

**Technical Support Document
for
Draft Air Emission Permit No. 09900002-105**

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: 2011 - Meat Packing Plants)
Hormel Foods Corp 500 14th Ave NE Austin, Minnesota 55912-3600	Hormel Foods Corporation - Austin Plant 500 14th Ave NE Austin, MN 55912-3600
Quality Pork Processors (QPP) (co-permittee) P.O. Box 369 Austin, Minnesota 55912	
Contact: Zuleyka Crespo Ramos Phone: 507-434-6166	

1.2 Facility description

Hormel Foods Corporation operates a meat processing plant in Austin, Minnesota. At the facility, Quality Pork Processors (QPP) processes hogs and Hormel manufactures the hogs into ham, bacon, dry sausage, fresh sausage, SPAM, and other meat products. Refined products operations produce salable byproducts including blood meal, cracklings, and bone meal. QPP is a co-Permittee with Hormel. However, Hormel Foods owns all equipment and operates the majority of it; QPP only operates a number of natural gas-fired indirect heating units in the hog processing area.

A majority of the air emissions produced at the facility come from the refined products operations, which includes rendering cookers, a blood dryer, bone dryer, and hair hydrolyzer. These units primarily emit particulate matter (PM), particulate matter less than 10 microns (PM₁₀), and particulate matter less than 2.5 microns (PM_{2.5}). Emissions from these units are vented in series through two separate packed-gas adsorption columns, a single Venturi scrubber, and a regenerative thermal oxidizer (RTO). Other sources of emissions at the facility include natural smoke generators that provide smoke to the natural gas-fired smoking ovens controlled by exhaust washers, precooked bacon production lines, and various natural gas combustion equipment.

The pre-cooked bacon bits line (EQUI 111) operates a mist eliminator but this unit is not listed in the permit. It is not required to be used, and the facility does not take credit for it in the PTE calculations, the annual air emission inventory, or in compliance with any applicable standards.

1.3 Description of the activities allowed by this permit action

This permit action is a Part 70 Reissuance. No construction is authorized by this action.

1.4 Facility emissions

Table 2. Total facility potential to emit summary

	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	SO ₂ tpy	NO _x tpy	CO tpy	CO ₂ e tpy	VOC tpy	Single HAP ** tpy	All HAPs tpy
Total facility limited potential emissions	122	189	189	1.14	177	185	211,798	72.0	3.17	4.37
Total facility actual emissions (2024)	90.7	90.7	90.0	0.339	51.2	49.4	*	5.58	*	

*Not reported in Minnesota emission inventory.

**Highest single HAP is hexane

Table 3. Facility classification

Classification	Major	Synthetic minor/area	Minor/Area
New Source Review		X	
Part 70	X		
Part 63			X

1.5 Changes to permit

The permit does not authorize any specific modifications, however, the MPCA has a combined operating and construction permitting program under Minnesota Rules Chapter 7007, and under Minn. R. 7007.0800, the MPCA has authority to include additional requirements in an operating permit]. The following changes to the permit are made through this permit action:

- The permit has been updated to reflect current MPCA templates and standard citation formatting;
- The MPCA is working to more appropriately implement CAM rules in Part 70 permits. CAM cannot apply to PM because there is no Part 70 major source threshold for PM. Therefore, PM CAM requirements have been removed from the permit. CAM still applies to PM₁₀ and PM_{2.5} emissions, however, as described in Table 4;
- The Regenerative Thermal Oxidizer stack (COMG 22) PM₁₀ and PM_{2.5} testing requirements were updated from occurring once every 60 months to once every 12 months, based on results of 7/25/2024 testing (see Table 6);
- Requirements for the Duske Blood Dryer (EQUI 15) were removed, as this unit has been removed from the facility;
- Pre-cooked bacon processes (EQUIs 32-35) were also removed from the facility, and so have been removed from the permit;
- Livestock boilers #1 and #2 (EQUI 88 and 89) have both been removed from the facility and therefore from the permit;
- Hog Hair Singer #2 (EQUI 97) has been replaced with a similar unit and is now EQUI 123;
- The limits for combined PM emissions from the Crax Grinding/Truck Loadout Room Air (EQUI 17) and the Crax Storage Room Air (EQUI 18) are located at the group called "STRU 2 Limits" (COMG 21);
- The limits for combined PM and VOC emissions from the Scott Bone Dryer (EQUI 14), the Refined Products Machinery (EQUI 71), the Hog Hair Hydrolyzer (EQUI 101) and the Dupps Blood Dryer (EQUI 113) are located at the group called "STRU 23 Limits" (COMG 22);

- An Alternate Operating Scenario was removed from the AFO Heat Braising Unit (EQUI 117) because the associated drench cabinet was never installed. VOC emissions were also removed from the calculations, as these were associated with the drench cabinet. Therefore, liquid smoke cannot be used at this unit. Emission calculations for this unit were updated because this unit was previously identified as having a maximum rated capacity of 3.96 MMBtu/hr but is now identified as having a maximum heating rate of 1.96 MMBtu/hr;
- Component groups COMG 17, which contained Exhaust Washers for ovens #1-#5 (TREAs 34-38), and COMG 19, which contained Exhaust Washers for ovens #9-#12 (TREAs 39-45), have been removed from the permit to eliminate unnecessary grouping of requirements. Requirements are now located at individual pieces of control equipment;
- Performance test requirements for PM, PM₁₀, PM_{2.5} from Crax Grinding/Truck Loadout, Crax Storage Room, Refined Products Room, and Dupps Blood Dryer (EQUIs 17, 18, 72, and 113) were updated from initial performance tests after permit issuance to recurring tests every 60 months.
- Citations for opacity testing at Ovens Controlled by Schroter Scrubbers (COMG 16) and Ovens Controlled by IES Scrubbers (COMG 18) were updated to include testing to demonstrate compliance with the Industrial Process Equipment Rule (IPER);
- Performance test requirements for Ovens Controlled by Schroter Scrubbers (COMG 16) and Ovens Controlled by IES Scrubbers (COMG 18) were updated to change the requirement that testing take place at two ovens per COMG per test round to require that testing take place at only one oven per COMG per test round. The requirement for testing at two ovens per COMG was added inadvertently in permit 09900002-104. The correction is being made in this permit action;
- References to the Duske Blood Dryer (EQUI 15) venting to the Pre-RTO Packed Bed Adsorption Column (TREA 33) were removed, as the Duske Blood Dryer was removed a number of years ago;
- Methyl Ethyl Ketone (MEK) is no longer a Hazardous Air Pollutant, so it was removed from the calculations; and
- The insignificant activities for the facility have been updated to reflect the current activities on site as well as to reflect changes to these rules since the last permit was issued.

2. Regulatory and/or statutory basis

2.1 New source review (NSR)

The permit carries forward limits on PM, PM₁₀, PM_{2.5} and VOC such that the facility remains a minor source under New Source Review regulations. The facility has accepted emission limits on PM, PM₁₀, PM_{2.5} and VOC at the Regenerative Thermal Oxidizer stack (COMG 22), along with PM₁₀ and PM_{2.5} limits at the Crax Storage/Grinding/Load out stack (COMG 21) and the Refined Products Room Air (EQUI 72) to avoid the 250 tpy major source threshold for these pollutants.

2.2 Part 70 permit program

The facility is a major source under the Part 70 permit program, and this status is not changed by this permit action.

2.3 New source performance standards (NSPS)

Natural gas-fired Boilers #6 and #7 (EQUI 3 and EQUI 9) are subject to 40 CFR pt. 60, subp. Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (NSPS Dc). Regulations under this subpart set requirements for recordkeeping and fuel usage.

Boilers #1-5 (EQUIs 4-8) are not subject to NSPS Dc because their construction date was prior to the applicability construction date of June 9, 1989, set forth in 40 CFR § 60.40c(a).

The natural gas-fired emergency engine (EQUI 81) is not subject to 40 CFR, pt. 60, subp. JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines because it was installed prior to the applicability construction date of June 12, 2006, set forth in 40 CFR § 60.4230(a)(4).

2.4 National emission standards for hazardous air pollutants (NESHAP)

The facility is an area source of hazardous air pollutants (HAP) under 40 CFR pt. 63, but is subject to an area source NESHAP:

The natural gas-fired emergency engine (EQUI 81) is subject to 40 CFR, pt. 63, subp. ZZZZ – NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE) because it is a stationary RICE located at an area source of HAPs. This subpart sets operating, monitoring, and recordkeeping requirements for the emergency engine. Since EQUI 81 is an emergency engine, there are no emission limits or required performance testing.

Natural gas-fired Boilers #1-7 (EQUI 3-9) are not subject to 40 CFR, pt. 63, subp. JJJJJ – NESHAP for Industrial, Commercial, and Institutional Boilers for Area Sources (NESHAP JJJJJ). Specifically, 40 CFR § 63.11195(e) exempts gas-fired boilers from requirements under NESHAP JJJJJ.

2.5 Compliance assurance monitoring (CAM)

The table below lists the sources subject to CAM, the control equipment used, whether the source is a large or other pollutant specific emission unit (PSEU), and the pollutants triggering CAM. Internal discussions were held as to whether the control efficiency limits on these control devices need to be considered as emission limitations or standards under 40 CFR pt 64. We do not believe that control efficiency limits meet this definition.

The MPCA is working to more appropriately implement CAM rules, as mentioned in Section 1.5. To this end, the MPCA has revised CAM applicability regarding PM. Therefore, the current CAM plans for this facility no longer match CAM applicability. However, it is the MPCA's position that an updated CAM plan is not needed for these types of changes as long as documentation is made here.

Table 4. CAM summary

Control	Pollutant Specific Emission Unit (PSEU)	CAM applicability	Pollutant	Emission Limit basis
PSEU 1	Scott Bone Dryer (EQUI 14) Refined Products Machinery (EQUI 71) Hog Hair Hydrolyzer (EQUI 101) Dupps Blood Dryer (EQUI 113)	Other PSEU	PM ₁₀ , PM _{2.5} for all, VOC for Refined Products Machinery (EQUI 71)	Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000
Crax Grinding/Truck Loadout Room Venturi Scrubber (TREA 24)	Crax Grinding/Truck Loadout Room Air (EQUI 17)	Other PSEU	PM ₁₀	Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000
Packed -Gas Adsorption Column (TREA 26)	Refined Products Room Air (EQUI 72)	Other PSEU	PM ₁₀	Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000

Control	Pollutant Specific Emission Unit (PSEU)	CAM applicability	Pollutant	Emission Limit basis
Refined Products Machinery Venturi Scrubber (TREA 31)	Refined Products Machinery (EQUI 71)	Other PSEU	PM ₁₀ , PM _{2.5}	Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000
(TREA 33)	Scott Bone Dryer (EQUI 14) Refined Products Machinery (EQUI 71) Hog Hair Hydrolyzer (EQUI 101) Dupps Blood Dryer (EQUI 113)	Other PSEU	PM ₁₀ , PM _{2.5} for all, VOC for Refined Products Machinery (EQUI 71)	Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000
(TREA 46)	Scott Bone Dryer (EQUI 14) Dupps Blood Dryer (EQUI 113)	Other PSEU	PM ₁₀ , PM _{2.5}	Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000

See Attachment 3 to this document for the CAM Plan submitted by the applicant.

2.6 Regulatory Overview

Table 5. Regulatory overview of facility

Subject item*	Applicable regulations	Rationale
COMG 3 – Natural Smoke Generators	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD - The smoke generators are limited to ≤ 368 cubic feet of wood smoked per 12-month rolling sum, total combined usage for the smoke generators in COMG 3. - The units are required to vent all emissions to associated control equipment when either unit is operating.
COMG 16 – Natural Smoke Ovens Controlled by Schroter Scrubbers	Minn. R. 7011.0610	Standards of Performance for Direct Heating Equipment. - All COMG 16 units were constructed after July 9, 1969; - All COMG 16 units burn gaseous fuel only; - The facility is located outside of the Twin Cities; and - The facility has greater than 250 MMBtu/hr of indirect and direct heating equipment.
COMG 18 – Natural Smoke Ovens Controlled by IES Scrubbers	Minn. R. 7011.0610	Standards of Performance for Direct Heating Equipment. - All COMG 18 units were constructed after July 9, 1969; - All COMG 18 units burn gaseous fuel only; - The facility is located outside of the Twin Cities; and - The facility has greater than 250 MMBtu/hr of indirect and direct heating equipment.

Subject item*	Applicable regulations	Rationale
COMG 20 – Natural Gas-Fired Air Makeup Units	Minn. R. 7011.0515	Standards of Performance for New Indirect Heating Equipment. Determination of applicable limit from the rule: - All units were constructed after 1977 and prior to June 9, 1989, the NSPS Dc applicability date; - The facility is located outside the cities in Table I; - The units' total capacity is less than 250 MMBtu/hr; and - Fuel type is natural gas only.
COMG 21 - STRU 2 Limits	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD Hormel/QPP previously accepted emission limits for PM, PM ₁₀ , and PM _{2.5} to reduce emissions to avoid PSD major source classification.
COMG 22 - STRU 23 Limits	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD Hormel/QPP previously accepted emission limits for PM, PM ₁₀ , PM _{2.5} , and VOC to reduce emissions to avoid PSD major source classification.
EQUI 4 – Boiler #1, EQUI 5 – Boiler #2, EQUI 6 – Boiler #3, EQUI 7 – Boiler #4, EQUI 8 – Boiler #5, EQUI 117 – AFO Fire Braising Unit	Minn. R. 7011.0515	Standards of Performance for New Indirect Heating Equipment. Determination of applicable limit from the rule: - All units were constructed after 1977 and prior to June 9, 1989, the NSPS Dc applicability date; - The facility is located outside the cities in Table I; - The units' total capacity is less than 250 MMBtu/hr; and - Fuel type is natural gas only.
EQUIs 3 and 9 – Boilers #6 and #7	40 CFR pt. 60, subp. Dc	NSPS for Small Industrial-Commercial-Institutional Steam Generating Units. Determination of applicable limit from the rule: - All units were constructed after June 9, 1989, the NSPS Dc applicability date; - The units' total capacity is greater than or equal to 10 MMBtu/hr and less than or equal to 100 MMBtu/hr; and - Fuel type is natural gas only.
EQUI 17 – Crax Grinding/Truck Loadout Room Air EQUI 18 – Crax Storage Room Air EQUIs 68–69 Natural Smoke Generators 1-2 EQUI 71 – Refined Products Machinery EQUIs 76-80 Natural Smoke Generators 3-7 EQUI 101 – Hog Hair Hydrolyzer EQUIs 118-120 Smoke Generators	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000 Minn. R. 7011.0715	PSD - The units are required to vent all emissions to associated control equipment when any unit is operating. 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 units was on or after July 9, 1969.

Subject item*	Applicable regulations	Rationale
EQUI 72 – Refined Products Room air	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD. - Hormel/QPP previously accepted emission limits for PM, PM₁₀, and PM_{2.5} to reduce emissions to avoid PSD major source classification. - The unit is required to vent all emissions to associated control equipment when either unit is operating.
	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.
EQUI 81 - Reciprocating IC Engine	40 CFR pt. 63, subp. ZZZZ	NESHAP for Stationary Reciprocating Internal Combustion Engines. Applicability criteria include: - Area source; - Existing Engine (Constr Before 6/12/06); - Emergency; - SI 4SRB; ≤ 500 HP; and - Limited Use.
	Minn. R. 7007.2300 Internal Combustion Engines	Standards of Performance for Stationary Internal Combustion Engines Fuel limited to natural gas only, by design. Sulfur content of fuel limited to 0.0015 percent by weight.
EQUI 14 - Scott Bone Dryer EQUI 113 – Dupps Blood Dryer	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD The units are required to vent all emissions to associated control equipment when the units are operating.
	Minn. R. 7011.0610	Standards of Performance for Direct Heating Equipment. - All units were constructed after July 9, 1969; - All units burn gaseous fuel only; - The facility is located outside of the Twin Cities; and - The facility has greater than 250 MMBtu/hr of indirect and direct heating equipment.
EQUI 111 – Bacon Bits Precooked Line	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.
TREA 23 - Thermal Oxidizer	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD Hormel/QPP is required to operate the RTO at permit-specified destruction efficiencies to reduce emissions to avoid PSD major source classification.

Subject item*	Applicable regulations	Rationale
	40 CFR pt. 64	CAM for “other” PSEU. - The facility is required to have a Part 70 permit. - The PSEU uses the RTO to achieve compliance with the emission rate limits at COMG 22. - The PSEU has potential pre-control device emissions of particulate matter greater than 100% of the major source threshold for a NSR listed source category (100 tpy). - The PSEU has potential post-control emissions of particulate matter that are less than 100% of the major source threshold for a NSR listed source category (100 tpy).
	Minn. R. 7011.0610	Standards of Performance for Direct Heating Equipment - Construction of the unit was on or after July 9, 1969; - The unit burns gaseous fuel; - The facility is located outside of the Twin Cities; and - The facility has greater than 250 MMBtu/hr of indirect and direct heating equipment.
TREA 24 - Venturi Scrubber TREA 25 – Packed Gas Adsorption Column TREA 26 – Packed Gas Adsorption Column TREA 31 - Venturi Scrubber TREA 33 - Packed Gas Adsorption Column TREA 46 - Venturi Scrubber	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD Hormel/QPP is required to operate these controls at permit-specified destruction efficiencies to reduce emissions to avoid PSD major source classification.
	40 CFR pt. 64	Compliance Assurance Monitoring (CAM) for “other” PSEU. - The facility is required to have a Part 70 permit. - The various PSEUs (EQUI 17, EQUI 71, EQUI 72, EQUI 101, and EQUI 113) use: - TREA 24 and TREA 25 to achieve compliance with the emission rate limits at COMG 21; - TREA 26 to achieve compliance with the emission rate limits at EQUI 72; and - TREA 31, TREA 33, and TREA 46 (following startup) to achieve compliance with the emission rate limits at COMG 22. - The various PSEUs all have potential pre-control device emissions of particulate matter less than 100% of the major source threshold for a NSR listed source category (100 tpy).
TREAs 34-38	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD Hormel/QPP is required to operate these controls at permit-specified control efficiencies and permit-specified water flow rate and water pressure to reduce emissions to avoid PSD major source classification.
TREAs 39-45	Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000	PSD Hormel/QPP is required to operate these controls at permit-specified control efficiencies and permit-specified water flow rate (both make up water and recirculated water) to reduce emissions to avoid PSD major source classification.

*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

3. Technical information

3.1 Calculations of potential to emit (PTE)

Attachment 1 to this TSD contains a summary of the PTE of the facility as well as detailed spreadsheets and supporting information prepared by the MPCA and the Permittee. A brief summary of the PTE calculations and pertinent assumptions follows below. There are no emissions increases authorized by this permit action.

Natural Smoke Generators (EQUIs 68-69, 76-80, 118-120):

AP-42 Chapter 9.5.2 (Meat Smoke Houses) provided factors for PM, PM₁₀, PM_{2.5}, and VOC emissions, and AP-42 Chapter 1.10 (Residential Wood Stoves) provided factors for emissions of NO_x and for several HAPs. An emission factor for CO came from a stack test at the facility and emission factors for acetaldehyde, formaldehyde, and phenol came from stack test data from Hormel and from similar facilities (see TSD Attachments 4, 5 and 6). Attachment 4 documents testing at Osceola, LLC (Osceola, Iowa), which operates smoke generators fired by wood or cobs and controlled by scrubbers. Attachment 5 and 6 document testing at Schroter Smoke Systems, which operates smoke generators fired by wood chips, operating without controls. The agency believes that use of these factors is reasonable and, in the case of Schroter, potentially overly conservative as the results obtained at that facility do not include the use of control equipment.

Along with these emission factors, the maximum capacity of the equipment was also used to calculate emissions.

Greenhouse gas emissions were calculated based on emission factors from 40 CFR pt. 98, subp. A, Table A-1, and 40 CFR pt. 98, subp. C, Tables C-1 and C-2. Global warming potentials were calculated using factors from 40 CFR § 98, subp. A, Table A-1.

Natural and Liquid Smoke Process Ovens: Smoked meat ovens #1-#5 (EQUIs 63-67) and Smoked meat ovens #6-#12 (EQUIs 56-62)

The process ovens burn natural gas. Emissions for these units are calculated using AP-42 Chapter 1.4 (Natural Gas Combustion) emission factors and the maximum capacity of the equipment.

Smoke from the smoke generators is sent to the natural gas ovens during the smoke cycle. Emissions from both of these processes are then vented to the exhaust washers, which control PM, PM₁₀, and PM_{2.5}.

Based on emission calculations, each smoke generator has the potential to emit 0.795 lb/hr of PM, PM₁₀, and PM_{2.5}, and each process oven has the potential to emit 0.011 lb/hr of PM, PM₁₀, and PM_{2.5}. Therefore, the unrestricted potential to emit from each process line is 0.81 lb/hr of PM, PM₁₀, and PM_{2.5} (reflected in the permit at COMGs 16 and 18).

Greenhouse gas emissions were calculated based on emission factors from 40 CFR pt. 98, Tables C-1 and C-2. Global warming potentials were calculated using factors from 40 CFR § 98, Subpart A, table A-1.

Natural Gas Combustion equipment: Natural Gas-Fired Make-Up Air Units (COMG 20); Boilers #1-7 (EQUIs 3-9), Scott Bone Dryer (EQUI 14); Refined Products makeup air units (EQUIs 73-75); Miscellaneous make-up air units (EQUIs 90-100 and 102-110, 113, and 123).

All combustion units at the facility burn only natural gas. Emissions for these units were calculated using AP-42 Chapter 1.4 (Natural Gas Combustion) emission factors and the maximum capacity of the equipment.

Greenhouse gas emissions were calculated based on emission factors from 40 CFR pt. 98, Tables C-1 and C-2. Global warming potentials were calculated using factors from 40 CFR § 98, Subpart A, table A-1.

Emergency generator (EQUI 81)

This unit burns only natural gas. Criteria pollutant emissions from EQUI 81 were calculated using emission factors from AP-42 section 3.2 (Natural Gas-fired Reciprocating Engines) (HAP emissions were calculated using AP-42 Chapter 1.4). EQUI 81 is an emergency generator and is assumed to operate less than 500 hours of operation per year, and 500 hours per year was used to calculate the engine's potential to emit.

Greenhouse gas emissions were calculated based on emission factors from 40 CFR pt. 98, Tables C-1 and C-2. Global warming potentials were calculated using factors from 40 CFR § 98, Subpart A, table A-1.

Dupps Blood Dryer (EQUI 113)

Emissions of PM, PM₁₀ and PM_{2.5} were calculated using factors from AP-42, Chapter 9.5.3, Meat Rendering, for a natural gas-fired direct-fired dryer controlled by a Venturi scrubber and a packed bed scrubber. The weight of dried blood product is also used in these calculations. Combustion emissions were calculated using factors from AP-42, Chapter 1.4 "Natural Gas Combustion" along with the maximum firing rate.

Greenhouse gas emissions were calculated based on emission factors from 40 CFR pt. 98, Tables C-1 and C-2. Global warming potentials were calculated using factors from 40 CFR § 98, Subpart A, table A-1.

Room Air Units (EQUIs 17, 18 and 72)

Within Hormel's refined products area, there are four distinct rooms containing various process equipment that may indirectly vent into the ambient room air. These individual rooms have each been designated as subject items with the exception of Crax Grinding/Truck Loadout Room Air (EQUI 17), which is comprised of two rooms. They are Crax Grinding/Truck Loadout Room Air (EQUI 17), Crax Storage Room Air (EQUI 18), and Refined Products Room Air (EQUI 72). The EPA and industry sources have yet to identify quantitative emission factors for processes occurring in these rooms (crax processing, bone meal screening, etc.) and performance testing cannot be done due to inadequate stack heights and a lack of safe access to ductwork. Therefore, permit 09900002-102 limited controlled emissions for these three sources based on an estimated indoor air concentration of 0.01 grains/dry standard cubic foot (gr/dscf) and the maximum airflow for each room's air pollution control system. Uncontrolled emissions were back-calculated based on control efficiencies of the various controls serving each room. The control efficiencies used are those listed in Minn R. 7011.0070.

The concentration of 0.01 gr/dscf is commonly used in industrial exhausts, baghouses, and commercial HVAC systems and is also used in several state and federal rules as an emissions limit. In February of 2024 the facility performed industrial hygiene indoor air quality testing to measure pollutant concentrations in these rooms to verify the use of this concentration. The highest individual result of these tests was found to be 0.00095 gr/dscf, which is well below 0.01 gr/dscf (see TSD Attachment 7). The MPCA believes that this limit is appropriate. Test results show that it is conservative compared to actual emissions. When the test results were converted to lb/hr values the results compared to limits on these units were as follows:

Table 6: Results from Industrial Hygiene Indoor Air Quality Testing at COMG 22

Unit	Pollutant	Limit	Test Results	Units	Test Result % of Limit	Compliance
EQUI 17	PM	2.68	0.159	lb/hr	5.9	Compliant
EQUI 18	PM	2.68	0.159	lb/hr	5.9	Compliant
EQUI 72	PM	8.38	0.189	lb/hr	2.26	Compliant

Calculations for the Crax Grinding/Truck Loadout Room Air (EQUI 17), the Crax Storage Room Air (EQUI 18) and the Refined Products Room Air (EQUI 72) assume a similar control efficiency for PM_{2.5} as for PM₁₀. Emissions from the Crax Grinding/Truck Loadout Room Air (EQUI 17) are controlled by a Venturi

scrubber (TREA 24), and the Crax Storage Room Air (EQUI 18) and the Refined Products Room Air (EQUI 72) are controlled by Packed Gas Adsorption Columns (TREAs 25 and 26, respectively).

Precooked bacon process (EQUI 111)

Emissions were calculated using emission factors from AP-42 Chapter 9.13.3 (Snack Chip Deep Fat Frying) along with the maximum throughput for this equipment. Although Hormel operates a mist eliminator to control emissions from this unit, the facility has elected not to take credit for this control in the calculations. The mist eliminator is not listed in the permit.

Refined Products Machinery (EQUI 71) and Hog Hair Hydrolyzer (EQUI 101)

Similar to the Room Air Units above, there are no EPA or industry emission factors available for these units, therefore emissions were estimated based on stack test data from STRU 23. The combined PTE for EQUI 71 and 101 has been back-calculated based on emission rate limits at the RTO stack (COMG 22) and the PTE of other emission units venting to this stack. These units are the Scott Bone Dryer (EQUI 14) and the Dupps Blood Dryer (EQUI 113). From the combined PTE, the individual PTE is attributed to both Refined Products Machinery (EQUI 71) and the Hog Hair Hydrolyzer (EQUI 101) using the individual throughputs of Refined Products Machinery and the Hydrolyzer compared to their combined throughput. While testing takes place to verify emissions, calculations were based on the emission limit. This is detailed further in TSD Attachment 1.

AFO Braising Unit

This combustion unit burns only natural gas. Emissions from combustion were calculated using AP-42 Chapter 1.4 (Natural Gas Combustion) emission factors and the maximum capacity of the equipment.

Emissions from braising were calculated using PM, PM_{2.5}, SO₂ and CO were calculated using emission factors from stack testing at the facility (see Table 7 below).

Greenhouse gas emissions were calculated based on emission factors from 40 CFR pt. 98, Tables C-1 and C-2. Global warming potentials were calculated using factors from 40 CFR pt. 98, subp. A, Table A-1.

3.2 Performance Testing

Refined Products Machinery (EQUI 71), Scott Bone Dryer (EQUI 14) and Hog Hair Hydrolyzer (EQUI 101)

Compliance with the PM, PM₁₀, PM_{2.5} limits at RTO stack (COMG 22) is demonstrated by performance testing. PM testing is required every 60 months but PM₁₀ and PM_{2.5} testing are required every 12 months, pending results. If the results are less than 60% of the most stringent limit, then testing may be updated to once every 60 months.

Smoke ovens (COMG 16 and COMG 18)

Performance testing is needed at these groups to confirm opacity limits on these units. A once every 60-month test frequency plan is already in place.

Crax Storage/Grinding/Loading Stack (COMG 21 - Crax Grinding/Loading (EQUI 17), and Crax Storage (EQUI 18)) and at the Refined Products Air Room (EQUI 72)

Limited controlled emissions for these sources are based on an estimated indoor air concentration of 0.01 grains/dry standard cubic foot (gr/dscf) and the maximum airflow for each room's air pollution control system. Recurring testing at the EQUIs (every 60 months) verify that emissions are below these estimates.

Indoor air testing was done at worst-case conditions. This means that the maximum number of trucks possible were loaded in the load out dock portion of EQUI 17. Each truck was required to remain in the room for 10 minutes following completion of the load out process to minimize the emissions leaving the building through the open bay doors. As in conventional stack testing, three separate runs were completed,

and the results averaged. Samples were collected in accordance with the National Institute of Occupational Safety and Health Method 0501.

Table 7. Performance Testing History

Unit	Test Date	Pollutant	Limit	Limit Basis	Test Result	Units	Test Result % of Limit	Compliance
RTO stack (STRU 23) Scott Bone Dryer (EQUI 14), Refined Products Machinery (EQUI 71), Hog Hair Hydrolyzer (EQUI 101), and Dupps Blood Dryer (EQUI 113)	7/25/2024	PM	3.0	Limit to avoid major source under 40 CFR 52.21(b)(1)(i)	0.62	lb/hr	20.7	Compliant
		PM ₁₀	18.0		17.21		95.6	
		PM _{2.5}	18.0		17.16		95.6	
		VOC	0.99		0.363		36.7	
RTO stack (STRU 23) Scott Bone Dryer (EQUI 14), Refined Products Machinery (EQUI 71), Hog Hair Hydrolyzer (EQUI 101), and Dupps Blood Dryer (EQUI 113)	12/9/2019	PM	3.0	Limit to avoid major source under 40 CFR 52.21(b)(1)(i)	0.22	lb/hr	7.33	Compliant
		PM ₁₀	18.0		5.76		32	
		PM _{2.5}	18.0		5.72		31.8	
		VOC	0.99		0.128		12.9	
Smoke Ovens (EQUIs 63-67, or COMG 16)	7/6/2021	Opacity	20	Minn. R. 7011.0610, subp. 1(A)(2)	5.5	% Opacity	27.5	Compliant
Smoke Ovens (EQUIs 63-67, or COMG 16)	6/19/2017	PM	≤0.30	Minn. R. 7011.0610, subp. 1(A)	0.024	gr/dscf		Compliant
		Opacity	20		13.7	% Opacity	68.5	
Smoke Ovens (EQUIs 56-62, or COMG 18)	7/6/2021	Opacity	20	Minn. R. 7011.0610, subp. 1(A)(2)	6.3	% Opacity	3.82	Compliant
Smoke Ovens (EQUIs 56-62, or COMG 18)	6/19/2017	PM	≤0.30	Minn. R. 7011.0610, subp. 1(A)	0.034	gr/dscf		Compliant
		Opacity	20		13.1	% Opacity	65.5	
Crax Storage/ Grinding/Loading Stack (STRU 2) Crax Grinding/Loading (EQUI 17) and Crax Storage (EQUI 18)	2/9/2024	PM	2.68	Limit to avoid major source under 40 CFR 52.21(b)(1)(i)	0.159	lb/hr	5.93	Compliant
Crax Storage/ Grinding/Loading Stack (STRU 2) Crax Grinding/Loading (EQUI 17) and	2/20/2019	PM	2.68	Limit to avoid major source under 40 CFR 52.21(b)(1)(i)	0.05	lb/hr	1.87	Compliant

Unit	Test Date	Pollutant	Limit	Limit Basis	Test Result	Units	Test Result % of Limit	Compliance
Crax Storage (EQUI 18)								
Refined Products Room (EQUI 72)	2/9/2024	PM	8.38	Limit to avoid major source under 40 CFR 52.21(b)(1)(i)	0.189	lb/hr	2.25	Compliant
		PM ₁₀	8.38		0.189		2.25	
		PM _{2.5}	8.38		0.189		2.25	
Refined Products Room (EQUI 72)	2/20/2019	PM	8.38	Limit to avoid major source under 40 CFR 52.21(b)(1)(i)	0.23	lb/hr	2.74	Compliant
		PM ₁₀	8.38		0.23		2.74	
		PM _{2.5}	8.38		0.23		2.74	

Table 8. Emission factor demonstration tests

Smoke Ovens and AFO Braising Unit

Recurring testing is required to demonstrate compliance with the emission factors used in the PTE calculations for the smoke ovens (EQUIs 56-67) and the AFO Braising Unit (EQUI 117). These tests are required to be performed every 60 months for the smoke ovens and every 120 months for the AFO Braising Unit.

Unit	Test Date	Pollutant	Test Result	Units	Date of Notice of Verification
Smoke Ovens (EQUIs 63-67, or COMG 16) (During this test, EQUI 76 was tested)	7/6/2021	CO	0.063	lb CO/lb wood	9/21/2021
		PM	0.38	lb/hr	
		PM ₁₀	0.59		
		PM _{2.5}	0.59		
Smoke Ovens (EQUIs 56-62, or COMG 18) (During this test, EQUI 118 was tested)	7/6/2021	CO	0.054	lb CO/lb wood	9/21/2021
		PM	0.27	lb/hr	
		PM ₁₀	0.50		
		PM _{2.5}	0.50		
Smoke Ovens (EQUIs 63-67, or COMG 16) (During this test, EQUI 67 was tested)	9/15/2016	PM ₁₀	0.14	In 2016, PM ₁₀ and PM _{2.5} limits were in lb/hr but test results were in gr/dcsf. Test results were verified by PCA.	6/19/2017
		PM _{2.5}	0.14		
Smoke Ovens (EQUIs 56-62, or COMG 18) (During this test, EQUI 57 was	9/15/2016	PM ₁₀	0.20	In 2016, PM ₁₀ and PM _{2.5} limits were in lb/hr but	6/19/2017
		PM _{2.5}	0.20		

Unit	Test Date	Pollutant	Test Result	Units	Date of Notice of Verification
tested)				test results were in gr/dcsf. Test results were verified by PCA.	
AFO Braising Unit (EQUI 117)	7/6/2021	CO	2.55	lb CO/lb wood	9/21/2021
		PM	0.15		
		PM ₁₀	0.53		
		PM _{2.5}	0.53		
		SO ₂	0.02		

3.3 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; and
- the kind of monitoring found on similar units elsewhere.

The Table below summarizes the monitoring requirements.

Table 9. Monitoring

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
COMG 3 – Smoke Generators	Wood smoked ≤ 368 tons per year total combined usage limit for the smoke generators in COMG 3 [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Recordkeeping: Daily records of fuel usage, monthly calculations, and records.	Hormel/QPP is able to use daily records of fuel usage to calculate monthly and 12-month rolling sum usage. Because COMG 3 is not likely to operate uniformly throughout the year, a 12-month rolling sum is adequate to ensure the facility remains below the limit.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?									
COMG 20 – Natural gas-fired Air Makeup Units	PM ≤ 0.4 lb/MMBtu; Opacity ≤ 20% with exceptions. [Minn. R. 7011.0515]	Recordkeeping: monthly fuel records	All COMG 20 units use natural gas only; therefore, the likelihood of violating either of the emission limits is very small. Hormel/QPP can demonstrate that all COMG 20 units will continue to operate such that emissions are well below the emission limits by only burning natural gas. Design based PTE for these units, using AP-42, is 0.0075 lb/MMBtu of PM compared to the rule limit of 0.4 lb/MMBtu of PM.									
COMG 21 - STRU 2 Limits	The Permittee shall limit: PM ≤ 2.68 lb/hr PM ₁₀ ≤ 2.68 lb/hr PM _{2.5} ≤ 2.68 lb/hr [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Performance testing: Industrial hygiene indoor air quality testing.	Testing of indoor air concentrations and associated airflows required at EQUI 17 and EQUI 18 allow Hormel/QPP to quantify emissions from the room air and to verify conservative assumptions used to develop the limits to avoid PSD.									
COMG 22 - STRU 23 Limits	The Permittee shall limit: PM ≤ 3.0 lb/hr PM ₁₀ ≤ 18.0 lb/hr PM _{2.5} ≤ 18.0 lb/hr VOC ≤ 0.99 lb/hr [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Performance testing: PM, PM ₁₀ , PM _{2.5} , and VOC performance testing	Emissions from EQUI 71, EQUI 101, and EQUI 113 combine to vent out of STRU 23. Limits at STRU 23 are contained at COMG 22. The most recent stack test results have led to a testing schedule of every 12 months for PM _{2.5} and PM ₁₀ and every 60 months for PM and VOC.									
EQUI 4 – Boiler #1 EQUI 5 – Boiler #2 EQUI 6 – Boiler #3 EQUI 7 – Boiler #4 EQUI 8 – Boiler #5	PM ≤ 0.4 lb/MMBtu; Opacity ≤ 20% with exceptions. [Minn. R. 7011.0515]	Recordkeeping: monthly fuel records	EQUIs 4-8 use natural gas only; therefore, the likelihood of violating either of the emission limits is very small. Hormel/QPP can demonstrate that EQUIs 4-8 will continue to operate such that emissions are well below the emission limits by only burning natural gas. Design based PTE for these units, using AP-42, is 0.0075 lb/MMBtu of PM compared to the rule limit of 0.4 lb/MMBtu of PM.									
EQUI 3 – Boiler #6 EQUI 9 - Boiler #7	40 CFR pt. 60, subp. Dc Minn. R. 7011.0570	Monthly recordkeeping of the type and amount of fuel used	Monitoring required by 40 CFR pt. 60, subp. Dc is adequate to demonstrate compliance with the standard.									
EQUI 14 – Scott Bone Dryer EQUI 113 – Dupps Blood Dryer	PM ≤ 0.30 gr/dscf Opacity ≤ 20% [Minn. R. 7011.0610, subp. 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. Design based requirements give these units PTE's and application rule limits (Direct Heating Rule) at maximum airflow of: <table><tr><td></td><td><u>PTE (lb/hr)</u></td><td><u>DHR (lb/hr)</u></td></tr><tr><td>EQUI 14</td><td>0.0671</td><td>23.0</td></tr><tr><td>EQUI 113</td><td>1.13E-05</td><td>23.0</td></tr></table>		<u>PTE (lb/hr)</u>	<u>DHR (lb/hr)</u>	EQUI 14	0.0671	23.0	EQUI 113	1.13E-05	23.0
	<u>PTE (lb/hr)</u>	<u>DHR (lb/hr)</u>										
EQUI 14	0.0671	23.0										
EQUI 113	1.13E-05	23.0										

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?												
EQUI 17 – Crax Grinding/Truck Loadout Room Air EQUI 18 – Crax Storage room air	PM ≤ 0.30 gr/dscf Opacity ≤ 20% [Minn. R. 7011.0715, subp. 1(A)&(B) and (2)]	Performance testing: PM emissions testing every 60 months at EQUIs 17 and 18	Performance testing is required every 60 months, depending on results. Proper operation of control equipment and performance testing is adequate to show compliance with the limits.												
EQUIs 56-67 Ovens	PM ≤ 0.30 gr/dscf Opacity ≤ 20% [Minn. R. 7011.0610, subp. 1(A)(1)&(2)]	Performance Testing: Opacity and PM emission rate tested every 60 months at COMGs 16 and 18.	Smoke from smoke generators in COMG 3 is fed into process ovens in COMG 16 and 18. Each oven is controlled by an exhaust washer in TREAs 34-38 or TREAs 56-62. Proper operation of the control equipment and performance testing on a rotating basis is adequate to show compliance with the limits. The most recent performance test indicates emissions of: - PM - 0.024 gr/dscf; and 20% opacity. Based on MPCA guidance, a 60-month performance test schedule is adequate to ensure compliance with the limits.												
EQUIs 68-69 - Natural Smoke Generators 1-2 EQUIs 76-80- Natural Smoke Generators 3-7 EQUIs 118-120- Smoke Generators	PM ≤ 0.30 gr/dscf Opacity ≤ 20% [Minn. R. 7011.0715, subp. 1(A)&(B) and (2)]	Performance Testing: Opacity and PM emission rate tested every 60 months at COMGs 16 and 18.	100% of the smoke emitted from the smoke generators in COMG 3 is fed into the process ovens in COMG 16 and COMG 18 so compliance with the COMG 3 PM and opacity limits is determined at the outlet of each COMG 16 and COMG 18 oven. The permit requires PM and opacity performance tests for ovens in COMG 16 and COMG 18 on a rotating basis. These other operational limits give these units PTEs and applicable rule limits (IPER) at maximum airflow of: <table><thead><tr><th></th><th><u>PTE (lb/hr)</u></th><th><u>IPER (lb/hr)</u></th></tr></thead><tbody><tr><td>EQUI 68-69</td><td>0.795</td><td>3.07</td></tr><tr><td>EQUI 76-80</td><td>0.795</td><td>3.07</td></tr><tr><td>EQUI 118-120</td><td>0.795</td><td>3.07</td></tr></tbody></table> The Permittee can demonstrate based on the units’ PTE that the units will not violate the applicable Minnesota rule.		<u>PTE (lb/hr)</u>	<u>IPER (lb/hr)</u>	EQUI 68-69	0.795	3.07	EQUI 76-80	0.795	3.07	EQUI 118-120	0.795	3.07
	<u>PTE (lb/hr)</u>	<u>IPER (lb/hr)</u>													
EQUI 68-69	0.795	3.07													
EQUI 76-80	0.795	3.07													
EQUI 118-120	0.795	3.07													
EQUI 71 Refined Products Machinery	PM ≤ 0.30 gr/dscf Opacity ≤ 20% [Minn. R. 7011.0715, subp. 1(A)&(B) and (2)]	Performance testing at STRU 23	EQUI 71 is controlled in series by a Venturi scrubber, packed bed adsorption column, and RTO. Emissions from EQUI 71 combine with emissions from EQUI 14, EQUI 113, and EQUI 101 and vent out STRU 23. Limits at STRU 23 are contained at COMG 22. Performance testing is required at STRU 23 at a minimum of every 5 years, depending on results. Compliance with the limits at COMG 22 will mean compliance with the emission limits at EQUI 71. Proper operation of the control equipment and performance testing is adequate to demonstrate compliance with the limits.												

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?						
EQUI 72 – Refined Products Room Air	PM ≤ 8.38 lb/hr PM ₁₀ ≤ 8.38 lb/hr PM _{2.5} ≤ 8.38 lb/hr [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i)]	Industrial hygiene indoor air quality testing.	Testing of the indoor air concentration and the associated airflow has allowed Hormel/QPP to quantify emissions from the room air and verify conservative assumptions used to develop the limits to avoid PSD. Future testing frequencies will be based on the test results.						
	PM ≤ 0.30 gr/dscf Opacity ≤ 20% [Minn. R. 7011.0715, subp. 1(A)&(B) and (2)]	Industrial hygiene indoor air quality testing.	Testing of the indoor air concentration and the associated airflow can be used to verify the less stringent PM limit required by Minn. R. 7011.0715.						
EQUI 81 – Natural gas-fired emergency generator	Opacity ≤ 20% SO ₂ ≤ 0.0015 lb/MMBtu. [Minn. R. 7011.2300, subps. 1 & 2(B)]	Monthly recordkeeping of the type of fuel used	This unit uses natural gas only; therefore, the likelihood of violating either of the limits is very small. The Permittee can demonstrate that the unit will continue to operate such that emissions meet the applicable emission limits by only burning natural gas. PTE is 0.00059 lb of SO ₂ /MMBtu.						
EQUI 101 – Hog Hair Hydrolyzer	PM ≤ 0.30 gr/dscf Opacity ≤ 20% [Minn. R. 7011.0715, subps.1(A)&(B)]	See TREAs 23 and 33 for specific monitoring	Other limits at TREA 23 and TREA 33 (and associated monitoring) ensure that this applicable requirement is being met. These other operational limits give this unit’s PTE and applicable rule limits (IPER) at maximum airflow of: <table><tr><td></td><td><u>PTE (lb/hr)</u></td><td><u>IPER (lb/hr)</u></td></tr><tr><td>EQUI 101</td><td>1.58</td><td>23.0</td></tr></table> The Permittee can demonstrate based on the unit’s PTE that the unit will not violate the applicable Minnesota rule.		<u>PTE (lb/hr)</u>	<u>IPER (lb/hr)</u>	EQUI 101	1.58	23.0
	<u>PTE (lb/hr)</u>	<u>IPER (lb/hr)</u>							
EQUI 101	1.58	23.0							
EQUI 111 – Bacon Bits Precooked Line	PM ≤ 0.30 gr/dscf Opacity ≤ 20% [Minn. R. 7011.0715, subps.1(A)&(B)]	None	For this unit, based on EPA published emission factors it is unlikely that EQUI 111 could violate the applicable requirement.						
EQUI 117 – AFO Fire Braising Unit	PM ≤ 0.40 lb/MMBtu. Opacity ≤ 20% [Minn. R. 7011.0515, subp. 1, 2 & 3]	Recordkeeping: fuel records	This unit uses natural gas; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that the unit will continue to operate such that emissions are well below the emission limits by only burning natural gas. Design based PTE for this unit, using AP-42, is 1.46E-08 lbs/hr of PM compared to the rule limit of 2.36 lbs/hr of PM.						

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
TREA 23 - RTO	PM $\geq$ 62% PM ₁₀ $\geq$ 62% PM _{2.5} $\geq$ 62% VOC $\geq$ 97% Temperature $\geq$ 1400 ° F [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Temperature limit, continuous temperature monitoring, O&M, inspections, calibration, performance test at STRU 23. Temperature	Monitoring based on the approved CAM plan is adequate to have a reasonable assurance of compliance for PM ₁₀ , PM _{2.5} and VOC. While this device is not considered to be subject to CAM for PM, CAM monitoring is sufficient to demonstrate compliance for PM. Furthermore, Hormel/QPP is required to conduct performance testing at STRU 23 every 12 or every 60 months depending on the pollutant. Limits on emissions from STRU 23 are contained at COMG 22.
TREA 24 – Crax grinding/truck loadout room Venturi scrubber	PM $\geq$ 94% PM ₁₀ $\geq$ 84% Pressure Drop $\geq$ 4.0 and 14.0 $\leq$ inches Water flow rate $\geq$ 100 gpm [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Daily and periodic inspections, pressure drop, water flow rate, operation and maintenance, corrective actions, and recordkeeping.	Monitoring based on the approved CAM plan is adequate to have a reasonable assurance of compliance. While this device is not considered to be subject to CAM for PM, CAM monitoring is sufficient to demonstrate compliance for PM. Furthermore, Hormel/QPP is required to conduct performance testing at EQUI 17 every 60 months for PM, PM ₁₀ and PM _{2.5} .
TREA 25 – Crax Storage Room Air Packed Gas Adsorption Column	PM $\geq$ 85% PM ₁₀ $\geq$ 84% PM _{2.5} $\geq$ 84% Pressure Drop $\geq$ 2.0 and 12.0 $\leq$ inches Water flow rate $\geq$ 320 gpm [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Daily and periodic inspections, pressure drop, water flow rate, operation and maintenance, corrective actions, and recordkeeping.	Monitoring based on the approved CAM plan is adequate to have a reasonable assurance of compliance. While this device is not considered to be subject to CAM for PM, CAM monitoring is sufficient to demonstrate compliance for PM. Furthermore, Hormel/QPP is required to conduct performance testing at EQUI 17 and EQUI 18 to show compliance with limit at COMG 21.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
TREA 26 – Refined Products Room Air Packed Gas Adsorption Column	PM $\geq$ 85% PM ₁₀ $\geq$ 84% PM _{2.5} $\geq$ 84% Pressure Drop $\geq$ 2.0 and 12.0 $\leq$ inches Water flow rate $\geq$ 1,000 gpm [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Daily and periodic inspections, pressure drop, water flow rate, operation and maintenance, corrective actions, and recordkeeping.	Monitoring based on the approved CAM plan is adequate to have a reasonable assurance of compliance. While this device is not considered to be subject to CAM for PM, CAM monitoring is sufficient to demonstrate compliance for PM.
TREA 31 – Refined products Venturi scrubber	PM $\geq$ 94% PM ₁₀ $\geq$ 84% PM _{2.5} $\geq$ 84% Pressure Drop $\geq$ 4.0 and 14.0 $\leq$ inches Water flow rate $\geq$ 83.0 gpm [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Daily and periodic inspections, pressure drop, water flow rate, operation and maintenance, corrective actions, and recordkeeping.	Monitoring based on the approved CAM plan is adequate to have a reasonable assurance of compliance. While this device is not considered to be subject to CAM for PM, CAM monitoring is sufficient to demonstrate compliance for PM. Furthermore, Hormel/QPP is required to conduct performance testing to show compliance with limit at COMG 22.
TREA 33 – Pre RTO packed bed	PM $\geq$ 85% PM ₁₀ $\geq$ 84% PM _{2.5} $\geq$ 84 % Pressure Drop $\geq$ 0.5 and $\leq$ 10.5 inches Water flow rate $\geq$ 720 gpm [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Daily and periodic inspections, pressure drop, water flow rate, operation and maintenance, corrective actions, and recordkeeping.	Monitoring based on the approved CAM plan is adequate to have a reasonable assurance of compliance. While this device is not considered to be subject to CAM for PM, CAM monitoring is sufficient to demonstrate compliance for PM. Furthermore, Hormel/QPP is required to conduct performance testing to show compliance with limit at COMG 22.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
TREAs 34-38 Exhaust Washers	PM $\geq$ 94% PM ₁₀ $\geq$ 84% PM _{2.5} $\geq$ 84 % VOC $\geq$ 95% Water flow rate $\geq$ 3.5 gpm Water pressure $\geq$ 55.0 psi [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Periodic inspections, water flow rate, water pressure, operation and maintenance, corrective actions, and recordkeeping.	Monitoring based on the Minnesota Performance Standard for Control Equipment provides a reasonable assurance of compliance.
TREA 39-45 Exhaust Washers	PM $\geq$ 94% PM ₁₀ $\geq$ 84% PM _{2.5} $\geq$ 84 % VOC $\geq$ 95% Water flow rate $\geq$ 3.5 gpm (make up water) Water flow rate $\geq$ 25.0 gpm (recirculated water) [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Periodic inspections, water flow rates (make-up and recirculated), operation and maintenance, corrective actions, and recordkeeping.	Monitoring based on the Minnesota Performance Standard for Control Equipment provides a reasonable assurance of compliance.
TREA 46 – New Dupps Blood Dryer Venturi scrubber	PM $\geq$ 94% PM ₁₀ $\geq$ 84% PM _{2.5} $\geq$ 84% Pressure Drop 2.0 $\geq$ and $\leq$ 8.0 inches Water flow rate $\geq$ 80 gpm [Title I Condition: Avoid major source under 40 CFR § 52.21(b)(1)(i) and Minn. R. 7007.3000]	Daily and periodic inspections, pressure drop, water flow rate, operation and maintenance, corrective actions, and recordkeeping.	Monitoring based on the approved CAM plan is adequate to have a reasonable assurance of compliance. While this device is not considered to be subject to CAM for PM, CAM monitoring is sufficient to demonstrate compliance for PM. Furthermore, Hormel/QPP is required to conduct performance testing to show compliance with limit at COMG 22.

*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

3.4 Insignificant activities

Hormel Foods Corporation - Austin Plant 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 permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities. See Attachment 1 of this TSD for PTE information for the insignificant activities.

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)	The Permittee operates 4 welding stations and several portable welders. 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.
Individual units with potential emissions less than 2000 lb/year of certain pollutants	For all combustion insignificant activities: PM ≤ 0.4 lb/MMBtu Opacity ≤ 20% (Minn. R. 7011.0515) For all other insignificant activities: PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0715)	For all combustion units, based on the fuels used and EPA published emissions factors, it is highly unlikely they could violate the applicable requirement Hormel/QPP operates roughly 60 insignificant natural gas combustion units and an emergency generator. For all combustion units, based on the fuels used and EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. Hormel/QPP operates the MP salt system, GP salt system, GP sugar system, pig skin salt system, and lime storage silo. For these units, based on EPA published emission factors for similar unloading activities, it is highly unlikely that they could violate the applicable requirement. Furthermore, these activities are controlled with bin vent filters that collect valuable byproduct, further reducing particulate emissions. Hormel/QPP operates 18 cooling towers. Based on published EPA emission factors, it is highly unlikely these units could violate the applicable requirement

3.5 Permit organization

One item that deviates from MPCA Tempo Guidance is the use of component groups to list requirements that apply at individual units. There are several instances of this, with different reasons for each.

- The group Natural Smoke Generators (COMG 3) was created to cover all seven smoke generators at the facility under one annual sawdust throughput limit. This group limit affords Hormel/QPP greater flexibility to operate the smoke generators compared to individual throughput limits at each unit.
- The group for ovens controlled by Schroter scrubbers (COMG 16) contains five identical process ovens controlled by five identical Schroter scrubbers. This group was created to accommodate a rotating performance testing schedule, where one oven from each group is tested every 60 months. Results from the single oven tested are assumed representative of the whole group.
- The group for ovens controlled by IES scrubbers (COMG 18) contains five identical process ovens controlled by five identical Schroter scrubbers. This group was created to accommodate a rotating performance testing schedule, where one oven from each group is tested every 60 months. Results from the single oven tested are assumed representative of the whole group.

- The group for natural gas-fired air make-up units (COMG 20) contains 23 natural gas-fired indirect heating units. Identical requirements from the Minnesota Standards of Performance for Indirect Heating equipment apply to each unit in the group. This group was created to eliminate undue repetition within the permit, given the large quantity of units with identical requirements. In general, limits that apply to individual pieces of equipment should be tracked at the unit level and should not be listed at a group. The main reason is if there were noncompliance with a limit by one unit within the group, the computer system would say the whole group was out of compliance. For this case, the natural gas units in this group are not reasonably expected to generate significant particulate matter, much less violate the limits. Therefore, it is highly unlikely that the MPCA would need to track noncompliance with this limit at the individual unit level so the MPCA decided that a group was an acceptable way to include these requirements.

In this permit, federal requirements from NESHAPs and NSPS are included in two different formats. The requirements for 40 CFR pt. 63, subp. ZZZZ and 40 CFR pt. 60, subp. Dc are incorporated into the permit as individual permit requirements, which has historically been MPCA's standard practice. However, both the NESHAP General Provisions (40 CFR pt. 63, subp. A) and NSPS General Provisions (40 CFR pt. 60, subp. A) are included as a single requirement listing applicable portions of the NESHAP/NSPS; the full text of which is included as permit appendices.

For these rules, limits and submittal/actions are included individually in the permit like the other standards. For the remaining portions of the rule, 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. 40 CFR pt. 63, subp. ZZZZ is included in Appendix C.

3.6 Comments received

Public Notice Period: [start date] – [end date]

EPA Review Period: [start date] – [end date]

4. Permit fee assessment

This permit action is the reissuance of an individual Part 70; therefore, no application fees apply under Minn. R. 7002.0016, subp. 1.

5. Conclusion

Based on the information provided by Hormel Foods Corporation - Austin Plant the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 09900002-105 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff members on permit team: Joy Wiecks (permit engineer)
 Kayla Park (enforcement)
 Ross Provow (compliance)
 Benjamin Wenkel (peer reviewer)
 Joe Handtmann (data coordinator)
 Beckie Olson (permit writing assistant)
 Ryan Decker (administrative support)

Tempo Activities: Part 70 Reissuance (IND20230001)

Attachments: 1. PTE summary and calculation spreadsheets
 2. Subject item inventory and facility requirements
 3. CAM Plan

4. Osceola Foods Stack Test Data
5. Schroter Stack Test (data)
6. Schroter Stack Test (throughputs)
7. Industrial Hygiene Test Results

Facility Name: Hormel Foods
 Core/Quality Pork
 Facility ID: 09900002
 Agency Interest No.: 3926
 Emissions Summary

COMG 3					Boiler #1					Boiler #2					Boiler #3				
Tempo ID No.: COMG 003					Tempo ID No.: EQUI 004					Tempo ID No.: EQUI 005					Tempo ID No.: EQUI 006				
Tempo SV ID No.:					Tempo SV ID No.:					Tempo SV ID No.: STRU 47					Tempo SV ID No.: STRU 47				
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy			
PM	-			9.75		0.37	1.60	1.60		0.37	1.60	1.60		0.37	1.60	1.60			
PM ₁₀	-			9.75		0.37	1.60	1.60		0.37	1.60	1.60		0.37	1.60	1.60			
PM _{2.5}	-			9.75		0.37	1.60	1.60		0.37	1.60	1.60		0.37	1.60	1.60			
SO ₂	-					0.029	0.13	0.13		0.03	0.13	0.13		0.029	0.13	0.13			
NO _x	-			0.52		4.80	21.0	21.0		4.80	21.0	21.0		4.80	21.0	21.0			
VOC	-			8.10		0.26	1.16	1.16		0.26	1.16	1.16		0.26	1.16	1.16			
CO	-			25.6		4.04	17.7	17.7		4.04	17.7	17.7		4.04	17.7	17.7			
Pb	-					2.40E-05	1.05E-04	1.05E-04		2.40E-05	1.05E-04	1.05E-04		2.40E-05	1.05E-04	1.05E-04			
CO ₂	-			1359		5728	25087	25087		5728	25087	25087		5728	25087	25087			
CH ₄	-			0.10		0.11	0.47	0.47		0.11	0.47	0.47		0.11	0.47	0.47			
N ₂ O	-			0.052		1.08E-02	4.73E-02	4.73E-02		1.08E-02	4.73E-02	4.73E-02		1.08E-02	4.73E-02	4.73E-02			
CO ₂ e	-			1375		5733.45	25112	25112		5735	25117	25117		5733	25112	25112			
Total HAPs	-			1.04		9.07E-02	3.97E-01	3.97E-01	-	9.07E-02	3.97E-01	3.97E-01	-	9.07E-02	3.97E-01	3.97E-01			
Acetaldehyde	75-07-0			0.48															
Arsenic	7440-38-2					9.61E-06	4.21E-05	4.21E-05		9.61E-06	4.21E-05	4.21E-05		9.61E-06	4.21E-05	4.21E-05			
Benzene	71-43-2			0.36		1.01E-04	4.42E-04	4.42E-04	-	1.01E-04	4.42E-04	4.42E-04	-	1.01E-04	4.42E-04	4.42E-04	-		
Dichlorobenzene	25321-22-6					5.76E-05	2.52E-04	2.52E-04	-	5.76E-05	2.52E-04	2.52E-04	-	5.76E-05	2.52E-04	2.52E-04	-		
Formaldehyde	50-00-0			0.19		3.60E-03	1.58E-02	1.58E-02	-	3.60E-03	1.58E-02	1.58E-02	-	3.60E-03	1.58E-02	1.58E-02	-		
Hexane	110-54-3					8.65E-02	3.79E-01	3.79E-01	-	8.65E-02	3.79E-01	3.79E-01	-	8.65E-02	3.79E-01	3.79E-01	-		
Naphthalene	91-20-3					2.93E-05	1.28E-04	1.28E-04	-	2.93E-05	1.28E-04	1.28E-04	-	2.93E-05	1.28E-04	1.28E-04	-		
Toluene	108-88-3			0.13		1.63E-04	7.15E-04	7.15E-04	-	1.63E-04	7.15E-04	7.15E-04	-	1.63E-04	7.15E-04	7.15E-04	-		
POI	-			0.13		4.15E-06	1.82E-05	1.82E-05	-	4.15E-06	1.82E-05	1.82E-05	-	4.15E-06	1.82E-05	1.82E-05	-		
Beryllium	7440-41-7					5.76E-07	2.52E-06	2.52E-06	-	5.76E-07	2.52E-06	2.52E-06	-	5.76E-07	2.52E-06	2.52E-06	-		
Cadmium	7440-43-9			4.05E-06		5.28E-05	2.31E-04	2.31E-04	-	5.28E-05	2.31E-04	2.31E-04	-	5.28E-05	2.31E-04	2.31E-04	-		
Chromium	7440-47-3			1.84E-07		6.73E-05	2.95E-04	2.95E-04	-	6.73E-05	2.95E-04	2.95E-04	-	6.73E-05	2.95E-04	2.95E-04	-		
Cobalt	-					4.04E-06	1.77E-05	1.77E-05		4.04E-06	1.77E-05	1.77E-05		4.04E-06	1.77E-05	1.77E-05			
Manganese	7439-96-5			3.13E-05		1.83E-05	8.00E-05	8.00E-05	-	1.83E-05	8.00E-05	8.00E-05	-	1.83E-05	8.00E-05	8.00E-05	-		
Mercury	7439-97-6					1.25E-05	5.47E-05	5.47E-05	-	1.25E-05	5.47E-05	5.47E-05	-	1.25E-05	5.47E-05	5.47E-05	-		
Nickel	7440-02-0			2.58E-06		1.01E-04	4.42E-04	4.42E-04	-	1.01E-04	4.42E-04	4.42E-04	-	1.01E-04	4.42E-04	4.42E-04	-		
Selenium	7782-49-2					1.15E-06	5.05E-06	5.05E-06	-	1.15E-06	5.05E-06	5.05E-06	-	1.15E-06	5.05E-06	5.05E-06	-		
Phenol	108-95-2			0.19		-	-	-	-	-	-	-	-	-	-	-	-	-	
o-xylene	1330-20-7			0.037		-	-	-	-	-	-	-	-	-	-	-	-	-	
Highest Facility Single HAP:	-																		

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Boiler #4																					Boiler #5						Boiler #6						Boiler #7						Oven #6			
Tempo ID No.:		EQUI		007		Tempo ID No.:		EQUI		008		Tempo ID No.:		EQUI		003		Tempo ID No.:		EQUI		009		Tempo ID No.:		EQUI		056														
Tempo SV ID No.:		STRU 47				Tempo SV ID No.:		STRU 47				Tempo SV ID No.:		STRU 63 and STRU 64				Tempo SV ID No.:		STRU 63 and STRU 64				Tempo SV ID No.:		STRU011		TREA042														
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy			Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy			Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy			Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy			Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy														
PM	-	0.19	0.82	0.82		5.32E-02	2.33E-01	2.33E-01			2.19E-01	9.59E-01	9.59E-01			2.19E-01	9.59E-01	9.59E-01			1.12E-02	4.90E-02	4.90E-02			1.12E-02	4.90E-02	4.90E-02														
PM ₁₀	-	0.19	0.82	0.82		5.32E-02	2.33E-01	2.33E-01			2.19E-01	9.59E-01	9.59E-01			2.19E-01	9.59E-01	9.59E-01			1.12E-02	4.90E-02	4.90E-02			1.12E-02	4.90E-02	4.90E-02														
PM _{2.5}	-	0.19	0.82	0.82		5.32E-02	2.33E-01	2.33E-01			2.19E-01	9.59E-01	9.59E-01			2.19E-01	9.59E-01	9.59E-01			1.12E-02	4.90E-02	4.90E-02			1.12E-02	4.90E-02	4.90E-02														
SO ₂	-	0.015	0.06	0.06		4.20E-03	1.84E-02	1.84E-02			1.73E-02	7.57E-02	7.57E-02			1.73E-02	7.57E-02	7.57E-02			8.82E-04	3.86E-03	3.86E-03			8.82E-04	3.86E-03	3.86E-03														
NO _x	-	2.46	10.78	10.78		7.00E-01	3.07E+00	3.07E+00			2.88E+00	1.26E+01	1.26E+01			2.88E+00	1.26E+01	1.26E+01			1.47E-01	6.44E-01	6.44E-01			1.47E-01	6.44E-01	6.44E-01														
VOC	-	0.14	0.59	0.59		3.85E-02	1.69E-01	1.69E-01			1.59E-01	6.94E-01	6.94E-01			1.59E-01	6.94E-01	6.94E-01			8.09E-03	3.54E-02	3.54E-02			8.09E-03	3.54E-02	3.54E-02														
CO	-	2.07	9.05	9.05		0.59	2.58	2.58			2.42	11	11			2.42	11	11			0.12	0.54	0.54			0.12	0.54	0.54														
Pb	-	1.23E-05	5.39E-05	5.39E-05		3.50E-06	1.53E-05	1.53E-05			1.44E-05	6.31E-05	6.31E-05			1.44E-05	6.31E-05	6.31E-05			7.35E-07	3.22E-06	3.22E-06			7.35E-07	3.22E-06	3.22E-06														
CH ₄	-	2934	12851	12851		835	3655	3655			3437	15052	15052			3437	15052	15052			175	768	768			175	768	768														
CO ₂	-	0.055	0.24	0.24		1.57E-02	6.89E-02	6.89E-02			6.48E-02	2.84E-01	2.84E-01			6.48E-02	2.84E-01	2.84E-01			3.31E-03	1.45E-02	1.45E-02			3.31E-03	1.45E-02	1.45E-02														
N ₂ O	-	5.53E-03	2.42E-02	2.42E-02		1.57E-03	6.89E-03	6.89E-03			6.48E-03	2.84E-02	2.84E-02			6.48E-03	2.84E-02	2.84E-02			3.31E-04	1.45E-03	1.45E-03			3.31E-04	1.45E-03	1.45E-03														
CO ₂ e	-	2937	12864	12864		835	3659	3659			3440	15067	15067			3440	15067	15067			176	769	769			176	769	769														
Total HAPs	-	4.65E-02	2.03E-01	2.03E-01		1.32E-02	5.79E-02	5.79E-02			5.44E-02	2.38E-01	2.38E-01			5.44E-02	2.38E-01	2.38E-01			2.78E-03	1.22E-02	1.22E-02			2.78E-03	1.22E-02	1.22E-02		-												
Acetaldehyde	75-07-0																																									
Arsenic	7440-38-2	4.92E-06	2.16E-05	2.16E-05		1.40E-06	6.13E-06	6.13E-06			5.76E-06	2.52E-05	2.52E-05			5.76E-06	2.52E-05	2.52E-05			2.94E-07	1.29E-06	1.29E-06			2.94E-07	1.29E-06	1.29E-06														
Benzene	71-43-2	5.17E-05	2.26E-04	2.26E-04	-	1.47E-05	6.44E-05	6.44E-05	-		6.05E-05	2.65E-04	2.65E-04	-		6.05E-05	2.65E-04	2.65E-04	-		3.09E-06	1.35E-05	1.35E-05	-		3.09E-06	1.35E-05	1.35E-05	-													
Dichlorobenzene	25321-22-6	2.95E-05	1.29E-04	1.29E-04	-	8.40E-06	3.68E-05	3.68E-05	-		3.46E-05	1.51E-04	1.51E-04	-		3.46E-05	1.51E-04	1.51E-04	-		1.76E-06	7.73E-06	7.73E-06	-		1.76E-06	7.73E-06	7.73E-06	-													
Formaldehyde	50-00-0	1.85E-03	8.08E-03	8.08E-03	-	5.25E-04	2.30E-03	2.30E-03	-		2.16E-03	9.47E-03	9.47E-03	-		2.16E-03	9.47E-03	9.47E-03	-		1.10E-04	4.83E-04	4.83E-04	-		1.10E-04	4.83E-04	4.83E-04	-													
Hexane	110-54-3	4.43E-02	1.94E-01	1.94E-01	-	1.26E-02	5.52E-02	5.52E-02	-		5.19E-02	2.27E-01	2.27E-01	-		5.19E-02	2.27E-01	2.27E-01	-		2.65E-03	1.16E-02	1.16E-02	-		2.65E-03	1.16E-02	1.16E-02	-													
Naphthalene	91-20-3	1.50E-05	6.57E-05	6.57E-05	-	4.27E-06	1.87E-05	1.87E-05	-		1.76E-05	7.70E-05	7.70E-05	-		1.76E-05	7.70E-05	7.70E-05	-		8.97E-07	3.93E-06	3.93E-06	-		8.97E-07	3.93E-06	3.93E-06	-													
Toluene	108-88-3	8.37E-05	3.66E-04	3.66E-04	-	2.38E-05	1.04E-04	1.04E-04	-		9.80E-05	4.29E-04	4.29E-04	-		9.80E-05	4.29E-04	4.29E-04	-		5.00E-06	2.19E-05	2.19E-05	-		5.00E-06	2.19E-05	2.19E-05	-													
POM	-	2.13E-06	9.31E-06	9.31E-06	-	6.05E-07	2.65E-06	2.65E-06	-		2.49E-06	1.09E-05	1.09E-05	-		2.49E-06	1.09E-05	1.09E-05	-		1.27E-07	5.57E-07	5.57E-07	-		1.27E-07	5.57E-07	5.57E-07	-													
Beryllium	7440-41-7	2.95E-07	1.29E-06	1.29E-06	-	8.40E-08	3.68E-07	3.68E-07	-		3.46E-07	1.51E-06	1.51E-06	-		3.46E-07	1.51E-06	1.51E-06	-		1.76E-08	7.73E-08	7.73E-08	-		1.76E-08	7.73E-08	7.73E-08	-													
Cadmium	7440-43-9	2.71E-05	1.19E-04	1.19E-04	-	7.70E-06	3.37E-05	3.37E-05	-		3.17E-05	1.39E-04	1.39E-04	-		3.17E-05	1.39E-04	1.39E-04	-		1.62E-06	7.09E-06	7.09E-06	-		1.62E-06	7.09E-06	7.09E-06	-													
Chromium	7440-47-3	3.45E-05	1.51E-04	1.51E-04	-	9.80E-06	4.29E-05	4.29E-05	-		4.04E-05	1.77E-04	1.77E-04	-		4.04E-05	1.77E-04	1.77E-04	-		2.06E-06	9.02E-06	9.02E-06	-		2.06E-06	9.02E-06	9.02E-06	-													
Cobalt	-	2.07E-06	9.05E-06	9.05E-06		5.88E-07	2.58E-06	2.58E-06			2.42E-06	1.06E-05	1.06E-05			2.42E-06	1.06E-05	1.06E-05			1.24E-07	5.41E-07	5.41E-07			1.24E-07	5.41E-07	5.41E-07														
Manganese	7439-96-5	9.35E-06	4.10E-05	4.10E-05	-	2.66E-06	1.17E-05	1.17E-05	-		1.10E-05	4.80E-05	4.80E-05	-		1.10E-05	4.80E-05	4.80E-05	-		5.59E-07	2.45E-06	2.45E-06	-		5.59E-07	2.45E-06	2.45E-06	-													
Mercury	7439-97-6	6.40E-06	2.80E-05	2.80E-05	-	1.82E-06	7.97E-06	7.97E-06	-		7.49E-06	3.28E-05	3.28E-05	-		7.49E-06	3.28E-05	3.28E-05	-		3.82E-07	1.67E-06	1.67E-06	-		3.82E-07	1.67E-06	1.67E-06	-													
Nickel	7440-02-0	5.17E-05	2.26E-04	2.26E-04	-	1.47E-05	6.44E-05	6.44E-05	-		6.05E-05	2.65E-04	2.65E-04	-		6.05E-05	2.65E-04	2.65E-04	-		3.09E-06	1.35E-05	1.35E-05	-		3.09E-06	1.35E-05	1.35E-05	-													
Selenium	7782-49-2	5.91E-07	2.59E-06	2.59E-06		1.68E-07	7.36E-07	7.36E-07			6.92E-07	3.03E-06	3.03E-06			6.92E-07	3.03E-06	3.03E-06			3.53E-08	1.55E-07	1.55E-07			3.53E-08	1.55E-07	1.55E-07														
Phenol	108-95-2	-	-	-	-	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-	-	-	-	-	-	-												
o-xylene	1330-20-7	-	-	-	-	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-	-	-	-	-	-	-												
Highest Facility Single HAP:	-	-	-	-	-	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-	-	-	-	-	-	-												

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Oven #7				Oven #8				Oven #9			
Tempo ID No.:	EQUI	057		Tempo ID No.:	EQUI	058		Tempo ID No.:	EQUI	059	
Tempo SV ID No.:	STRU043	TREA043		Tempo SV ID No.:	STRU013	TREA044		Tempo SV ID No.:	STRU038	TREA045	

Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02	
PM ₁₀	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02	
PM _{2.5}	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02	
SO ₂	-	8.82E-04	3.86E-03	3.86E-03		8.82E-04	3.86E-03	3.86E-03		8.82E-04	3.86E-03	3.86E-03	
NO _x	-	1.47E-01	6.44E-01	6.44E-01		1.47E-01	6.44E-01	6.44E-01		1.47E-01	6.44E-01	6.44E-01	
VOC	-	8.09E-03	3.54E-02	3.54E-02		8.09E-03	3.54E-02	3.54E-02		8.09E-03	3.54E-02	3.54E-02	
CO	-	1.24E-01	5.41E-01	5.41E-01		1.24E-01	5.41E-01	5.41E-01		1.24E-01	5.41E-01	5.41E-01	
Pb	-	7.35E-07	3.22E-06	3.22E-06		7.35E-07	3.22E-06	3.22E-06		7.35E-07	3.22E-06	3.22E-06	
CO ₂	-	175	768	768		175	768	768		175	768	768	
CH ₄	-	3.31E-03	1.45E-02	1.45E-02		3.31E-03	1.45E-02	1.45E-02		3.31E-03	1.45E-02	1.45E-02	
N ₂ O	-	3.31E-04	1.45E-03	1.45E-03		3.31E-04	1.45E-03	1.45E-03		3.31E-04	1.45E-03	1.45E-03	
CO ₂ e	-	176	769	769		176	769	769		176	769	769	
Total HAPs	-	2.78E-03	1.22E-02	1.22E-02		2.78E-03	1.22E-02	1.22E-02		2.78E-03	1.22E-02	1.22E-02	-
Acetaldehyde	75-07-0												
Arsenic	7440-38-2	2.94E-07	1.29E-06	1.29E-06		2.94E-07	1.29E-06	1.29E-06		2.94E-07	1.29E-06	1.29E-06	
Benzene	71-43-2	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-
Dichlorobenzene	25321-22-6	1.76E-06	7.73E-06	7.73E-06	-	1.76E-06	7.73E-06	7.73E-06	-	1.76E-06	7.73E-06	7.73E-06	-
Formaldehyde	50-00-0	1.10E-04	4.83E-04	4.83E-04	-	1.10E-04	4.83E-04	4.83E-04	-	1.10E-04	4.83E-04	4.83E-04	-
Hexane	110-54-3	2.65E-03	1.16E-02	1.16E-02	-	2.65E-03	1.16E-02	1.16E-02	-	2.65E-03	1.16E-02	1.16E-02	-
Naphthalene	91-20-3	8.97E-07	3.93E-06	3.93E-06	-	8.97E-07	3.93E-06	3.93E-06	-	8.97E-07	3.93E-06	3.93E-06	-
Toluene	108-88-3	5.00E-06	2.19E-05	2.19E-05	-	5.00E-06	2.19E-05	2.19E-05	-	5.00E-06	2.19E-05	2.19E-05	-
POI	-	1.27E-07	5.57E-07	5.57E-07	-	1.27E-07	5.57E-07	5.57E-07	-	1.27E-07	5.57E-07	5.57E-07	-
Beryllium	7440-41-7	1.76E-08	7.73E-08	7.73E-08	-	1.76E-08	7.73E-08	7.73E-08	-	1.76E-08	7.73E-08	7.73E-08	-
Cadmium	7440-43-9	1.62E-06	7.09E-06	7.09E-06	-	1.62E-06	7.09E-06	7.09E-06	-	1.62E-06	7.09E-06	7.09E-06	-
Chromium	7440-47-3	2.06E-06	9.02E-06	9.02E-06	-	2.06E-06	9.02E-06	9.02E-06	-	2.06E-06	9.02E-06	9.02E-06	-
Cobalt	-	1.24E-07	5.41E-07	5.41E-07	-	1.24E-07	5.41E-07	5.41E-07	-	1.24E-07	5.41E-07	5.41E-07	-
Manganese	7439-96-5	5.59E-07	2.45E-06	2.45E-06	-	5.59E-07	2.45E-06	2.45E-06	-	5.59E-07	2.45E-06	2.45E-06	-
Mercury	7439-97-6	3.82E-07	1.67E-06	1.67E-06	-	3.82E-07	1.67E-06	1.67E-06	-	3.82E-07	1.67E-06	1.67E-06	-
Nickel	7440-02-0	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-
Selenium	7782-49-2	3.53E-08	1.55E-07	1.55E-07	-	3.53E-08	1.55E-07	1.55E-07	-	3.53E-08	1.55E-07	1.55E-07	-
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-												

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Oven #10				Oven #11				Oven #12			
Tempo ID No.:	EQUI	060		Tempo ID No.:	EQUI	061		Tempo ID No.:	EQUI	062	
Tempo SV ID No.:	STRU039	TREA040		Tempo SV ID No.:	STRU001	TREA041		Tempo SV ID No.:	STRU040	TREA039	

Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02	
PM ₁₀	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02	
PM _{2.5}	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02	
SO ₂	-	8.82E-04	3.86E-03	3.86E-03		8.82E-04	3.86E-03	3.86E-03		8.82E-04	3.86E-03	3.86E-03	
NO _x	-	1.47E-01	6.44E-01	6.44E-01		1.47E-01	6.44E-01	6.44E-01		1.47E-01	6.44E-01	6.44E-01	
VOC	-	8.09E-03	3.54E-02	3.54E-02		8.09E-03	3.54E-02	3.54E-02		8.09E-03	3.54E-02	3.54E-02	
CO	-	1.24E-01	5.41E-01	5.41E-01		1.24E-01	5.41E-01	5.41E-01		1.24E-01	5.41E-01	5.41E-01	
Pb	-	7.35E-07	3.22E-06	3.22E-06		7.35E-07	3.22E-06	3.22E-06		7.35E-07	3.22E-06	3.22E-06	
CO ₂	-	175	768	768		175	768	768		175	768	768	
CH ₄	-	3.31E-03	1.45E-02	1.45E-02		3.31E-03	1.45E-02	1.45E-02		3.31E-03	1.45E-02	1.45E-02	
N ₂ O	-	3.31E-04	1.45E-03	1.45E-03		3.31E-04	1.45E-03	1.45E-03		3.31E-04	1.45E-03	1.45E-03	
CO ₂ e	-	176	769	769		176	769	769		176	769	769	
Total HAPs	-	2.78E-03	1.22E-02	1.22E-02		2.78E-03	1.22E-02	1.22E-02		2.78E-03	1.22E-02	1.22E-02	
Acetaldehyde	75-07-0												
Arsenic	7440-38-2	2.94E-07	1.29E-06	1.29E-06		2.94E-07	1.29E-06	1.29E-06		2.94E-07	1.29E-06	1.29E-06	
Benzene	71-43-2	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-
Dichlorobenzene	25321-22-6	1.76E-06	7.73E-06	7.73E-06	-	1.76E-06	7.73E-06	7.73E-06	-	1.76E-06	7.73E-06	7.73E-06	-
Formaldehyde	50-00-0	1.10E-04	4.83E-04	4.83E-04	-	1.10E-04	4.83E-04	4.83E-04	-	1.10E-04	4.83E-04	4.83E-04	-
Hexane	110-54-3	2.65E-03	1.16E-02	1.16E-02	-	2.65E-03	1.16E-02	1.16E-02	-	2.65E-03	1.16E-02	1.16E-02	-
Naphthalene	91-20-3	8.97E-07	3.93E-06	3.93E-06	-	8.97E-07	3.93E-06	3.93E-06	-	8.97E-07	3.93E-06	3.93E-06	-
Toluene	108-88-3	5.00E-06	2.19E-05	2.19E-05	-	5.00E-06	2.19E-05	2.19E-05	-	5.00E-06	2.19E-05	2.19E-05	-
POI	-	1.27E-07	5.57E-07	5.57E-07	-	1.27E-07	5.57E-07	5.57E-07	-	1.27E-07	5.57E-07	5.57E-07	-
Beryllium	7440-41-7	1.76E-08	7.73E-08	7.73E-08	-	1.76E-08	7.73E-08	7.73E-08	-	1.76E-08	7.73E-08	7.73E-08	-
Cadmium	7440-43-9	1.62E-06	7.09E-06	7.09E-06	-	1.62E-06	7.09E-06	7.09E-06	-	1.62E-06	7.09E-06	7.09E-06	-
Chromium	7440-47-3	2.06E-06	9.02E-06	9.02E-06	-	2.06E-06	9.02E-06	9.02E-06	-	2.06E-06	9.02E-06	9.02E-06	-
Cobalt	-	1.24E-07	5.41E-07	5.41E-07	-	1.24E-07	5.41E-07	5.41E-07	-	1.24E-07	5.41E-07	5.41E-07	-
Manganese	7439-96-5	5.59E-07	2.45E-06	2.45E-06	-	5.59E-07	2.45E-06	2.45E-06	-	5.59E-07	2.45E-06	2.45E-06	-
Mercury	7439-97-6	3.82E-07	1.67E-06	1.67E-06	-	3.82E-07	1.67E-06	1.67E-06	-	3.82E-07	1.67E-06	1.67E-06	-
Nickel	7440-02-0	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-
Selenium	7782-49-2	3.53E-08	1.55E-07	1.55E-07	-	3.53E-08	1.55E-07	1.55E-07	-	3.53E-08	1.55E-07	1.55E-07	-
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-												

Facility Name: Hormel Foods
Core/Qualitv Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Oven #1													Oven #2				Oven #3			
Tempo ID No.:		EQUI		063		Tempo ID No.:		EQUI		064		Tempo ID No.:		EQUI		065				
Tempo SV ID No.:		STRU048		TREA034		Tempo SV ID No.:		STRU049		TREA035		Tempo SV ID No.:		STRU050		TREA036				
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy				
PM	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02				
PM ₁₀	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02				
PM _{2.5}	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02				
SO ₂	-	8.82E-04	3.86E-03	3.86E-03		8.82E-04	3.86E-03	3.86E-03		8.82E-04	3.86E-03	3.86E-03		8.82E-04	3.86E-03	3.86E-03				
NO _x	-	1.47E-01	6.44E-01	6.44E-01		1.47E-01	6.44E-01	6.44E-01		1.47E-01	6.44E-01	6.44E-01		1.47E-01	6.44E-01	6.44E-01				
VOC	-	8.09E-03	3.54E-02	3.54E-02		8.09E-03	3.54E-02	3.54E-02		8.09E-03	3.54E-02	3.54E-02		8.09E-03	3.54E-02	3.54E-02				
CO	-	1.24E-01	5.41E-01	5.41E-01		1.24E-01	5.41E-01	5.41E-01		1.24E-01	5.41E-01	5.41E-01		1.24E-01	5.41E-01	5.41E-01				
Pb	-	7.35E-07	3.22E-06	3.22E-06		7.35E-07	3.22E-06	3.22E-06		7.35E-07	3.22E-06	3.22E-06		7.35E-07	3.22E-06	3.22E-06				
CO ₂	-	175	768	768		175	768	768		175	768	768		175	768	768				
CH ₄	-	3.31E-03	1.45E-02	1.45E-02		3.31E-03	1.45E-02	1.45E-02		3.31E-03	1.45E-02	1.45E-02		3.31E-03	1.45E-02	1.45E-02				
N ₂ O	-	3.31E-04	1.45E-03	1.45E-03		3.31E-04	1.45E-03	1.45E-03		3.31E-04	1.45E-03	1.45E-03		3.31E-04	1.45E-03	1.45E-03				
CO ₂ e	-	176	769	769		176	769	769		176	769	769		176	769	769				
Total HAPs	-	2.78E-03	1.22E-02	1.22E-02	-	2.78E-03	1.22E-02	1.22E-02	-	2.78E-03	1.22E-02	1.22E-02	-	2.78E-03	1.22E-02	1.22E-02	-			
Acetaldehyde	75-07-0																			
Arsenic	7440-38-2	2.94E-07	1.29E-06	1.29E-06		2.94E-07	1.29E-06	1.29E-06		2.94E-07	1.29E-06	1.29E-06		2.94E-07	1.29E-06	1.29E-06				
Benzene	71-43-2	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-			
Dichlorobenzene	25321-22-6	1.76E-06	7.73E-06	7.73E-06	-	1.76E-06	7.73E-06	7.73E-06	-	1.76E-06	7.73E-06	7.73E-06	-	1.76E-06	7.73E-06	7.73E-06	-			
Formaldehyde	50-00-0	1.10E-04	4.83E-04	4.83E-04	-	1.10E-04	4.83E-04	4.83E-04	-	1.10E-04	4.83E-04	4.83E-04	-	1.10E-04	4.83E-04	4.83E-04	-			
Hexane	110-54-3	2.65E-03	1.16E-02	1.16E-02	-	2.65E-03	1.16E-02	1.16E-02	-	2.65E-03	1.16E-02	1.16E-02	-	2.65E-03	1.16E-02	1.16E-02	-			
Naphthalene	91-20-3	8.97E-07	3.93E-06	3.93E-06	-	8.97E-07	3.93E-06	3.93E-06	-	8.97E-07	3.93E-06	3.93E-06	-	8.97E-07	3.93E-06	3.93E-06	-			
Toluene	108-88-3	5.00E-06	2.19E-05	2.19E-05	-	5.00E-06	2.19E-05	2.19E-05	-	5.00E-06	2.19E-05	2.19E-05	-	5.00E-06	2.19E-05	2.19E-05	-			
POH	-	1.27E-07	5.57E-07	5.57E-07	-	1.27E-07	5.57E-07	5.57E-07	-	1.27E-07	5.57E-07	5.57E-07	-	1.27E-07	5.57E-07	5.57E-07	-			
Beryllium	7440-41-7	1.76E-08	7.73E-08	7.73E-08	-	1.76E-08	7.73E-08	7.73E-08	-	1.76E-08	7.73E-08	7.73E-08	-	1.76E-08	7.73E-08	7.73E-08	-			
Cadmium	7440-43-9	1.62E-06	7.09E-06	7.09E-06	-	1.62E-06	7.09E-06	7.09E-06	-	1.62E-06	7.09E-06	7.09E-06	-	1.62E-06	7.09E-06	7.09E-06	-			
Chromium	7440-47-3	2.06E-06	9.02E-06	9.02E-06	-	2.06E-06	9.02E-06	9.02E-06	-	2.06E-06	9.02E-06	9.02E-06	-	2.06E-06	9.02E-06	9.02E-06	-			
Cobalt	-	1.24E-07	5.41E-07	5.41E-07	-	1.24E-07	5.41E-07	5.41E-07	-	1.24E-07	5.41E-07	5.41E-07	-	1.24E-07	5.41E-07	5.41E-07	-			
Manganese	7439-96-5	5.59E-07	2.45E-06	2.45E-06	-	5.59E-07	2.45E-06	2.45E-06	-	5.59E-07	2.45E-06	2.45E-06	-	5.59E-07	2.45E-06	2.45E-06	-			
Mercury	7439-97-6	3.82E-07	1.67E-06	1.67E-06	-	3.82E-07	1.67E-06	1.67E-06	-	3.82E-07	1.67E-06	1.67E-06	-	3.82E-07	1.67E-06	1.67E-06	-			
Nickel	7440-02-0	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-			
Selenium	7782-49-2	3.53E-08	1.55E-07	1.55E-07	-	3.53E-08	1.55E-07	1.55E-07	-	3.53E-08	1.55E-07	1.55E-07	-	3.53E-08	1.55E-07	1.55E-07	-			
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Highest Facility Single HAP:																				

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Oven #4				Oven #5				Scott Bone Dryer - Material				Scott Bone Dryer - Combustion				Crax grinding/Truck loadout room air				Crax storage ro			
Tempo ID No.:	EQUI	066		Tempo ID No.:	EQUI	067		Tempo ID No.:	EQUI	14 Bone Dryer		Tempo ID No.:	EQUI	14 Bone Dryer Com		Tempo ID No.:	EQUI	017		Tempo ID No.:	EQUI		
Tempo SV ID No.:	STRU051	TREA037		Tempo SV ID No.:	STRU052	TREA038		Tempo SV ID No.:	STRU 23			Tempo SV ID No.:	STRU 25			Tempo SV ID No.:	TREA 24 and TREA 25			Tempo SV ID No.:	TREA 25		
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy
PM	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		9.00	39.4	0.13		6.71E-02	0.29	0.29		2.01	979	8.81		4.47	19.6
PM ₁₀	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		2.25	9.86	0.10		6.71E-02	0.29	0.29		2.01	344	8.81		4.19	18.4
PM _{2.5}	-	1.12E-02	4.90E-02	4.90E-02		1.12E-02	4.90E-02	4.90E-02		0.39	1.71	0.65		6.71E-02	0.29	0.29		2.01	344	8.81		4.19	18.4
SO ₂	-	8.82E-04	3.86E-03	3.86E-03		8.82E-04	3.86E-03	3.86E-03		0.00	0.00	0.00		5.29E-03	0.02	0.02		0.00	0.00	0.00		0.00	0.00
NO _x	-	1.47E-01	6.44E-01	6.44E-01		1.47E-01	6.44E-01	6.44E-01		0.00	0.00	0.00		0.88	3.86	3.86		0.00	0.00	0.00		0.00	0.00
VOC	-	8.09E-03	3.54E-02	3.54E-02		8.09E-03	3.54E-02	3.54E-02		0.00	0.00	0.00		0.049	0.21	0.21		2.01	8.81	8.81		0.67	2.94
CO	-	1.24E-01	5.41E-01	5.41E-01		1.24E-01	5.41E-01	5.41E-01		0.00	0.00	0.00		0.74	3.25	3.25		0.00	0.00	0.00		0.00	0.00
Pb	-	7.35E-07	3.22E-06	3.22E-06		7.35E-07	3.22E-06	3.22E-06		0.00	0.00	0.00		4.41E-06	1.93E-05	1.93E-05		0.00	0.00	0.00		0.00	0.00
CO ₂	-	175	768	768		175	768	768		0.00	0.00	0.00		1052	4608	4608		0.00	0.00	0.00		0.00	0.00
CH ₄	-	3.31E-03	1.45E-02	1.45E-02		3.31E-03	1.45E-02	1.45E-02		0.00	0.00	0.00		1.98E-02	8.69E-02	8.69E-02		0.00	0.00	0.00		0.00	0.00
N ₂ O	-	3.31E-04	1.45E-03	1.45E-03		3.31E-04	1.45E-03	1.45E-03		0.00	0.00	0.00		1.98E-03	8.69E-03	8.69E-03		0.00	0.00	0.00		0.00	0.00
CO ₂ e	-	176	769	769		176	769	769		0.00	0.00	0.00		1053	4612	4612		0.00	0.00	0.00		0.00	0.00
Total HAPs	-	2.78E-03	1.22E-02	1.22E-02	-	2.78E-03	1.22E-02	1.22E-02	-	-	-	-	-	1.67E-02	7.30E-02	7.30E-02	-	-	-	-	-	-	-
Acetaldehyde	75-07-0																						
Arsenic	7440-38-2	2.94E-07	1.29E-06	1.29E-06		2.94E-07	1.29E-06	1.29E-06						1.76E-06	7.73E-06	7.73E-06							
Benzene	71-43-2	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	-	-	-	-	1.85E-05	8.12E-05	8.12E-05	-	-	-	-	-	-	-
Dichlorobenzene	25321-22-6	1.76E-06	7.73E-06	7.73E-06	-	1.76E-06	7.73E-06	7.73E-06	-	-	-	-	-	1.06E-05	4.64E-05	4.64E-05	-	-	-	-	-	-	-
Formaldehyde	50-00-0	1.10E-04	4.83E-04	4.83E-04	-	1.10E-04	4.83E-04	4.83E-04	-	-	-	-	-	6.62E-04	2.90E-03	2.90E-03	-	-	-	-	-	-	-
Hexane	110-54-3	2.65E-03	1.16E-02	1.16E-02	-	2.65E-03	1.16E-02	1.16E-02	-	-	-	-	-	1.59E-02	6.96E-02	6.96E-02	-	-	-	-	-	-	-
Naphthalene	91-20-3	8.97E-07	3.93E-06	3.93E-06	-	8.97E-07	3.93E-06	3.93E-06	-	-	-	-	-	5.38E-06	2.36E-05	2.36E-05	-	-	-	-	-	-	-
Toluene	108-88-3	5.00E-06	2.19E-05	2.19E-05	-	5.00E-06	2.19E-05	2.19E-05	-	-	-	-	-	3.00E-05	1.31E-04	1.31E-04	-	-	-	-	-	-	-
POI	-	1.27E-07	5.57E-07	5.57E-07	-	1.27E-07	5.57E-07	5.57E-07	-	-	-	-	-	7.62E-07	3.34E-06	3.34E-06	-	-	-	-	-	-	-
Beryllium	7440-41-7	1.76E-08	7.73E-08	7.73E-08	-	1.76E-08	7.73E-08	7.73E-08	-	-	-	-	-	1.06E-07	4.64E-07	4.64E-07	-	-	-	-	-	-	-
Cadmium	7440-43-9	1.62E-06	7.09E-06	7.09E-06	-	1.62E-06	7.09E-06	7.09E-06	-	-	-	-	-	9.71E-06	4.25E-05	4.25E-05	-	-	-	-	-	-	-
Chromium	7440-47-3	2.06E-06	9.02E-06	9.02E-06	-	2.06E-06	9.02E-06	9.02E-06	-	-	-	-	-	1.24E-05	5.41E-05	5.41E-05	-	-	-	-	-	-	-
Cobalt	-	1.24E-07	5.41E-07	5.41E-07	-	1.24E-07	5.41E-07	5.41E-07	-	-	-	-	-	7.41E-07	3.25E-06	3.25E-06	-	-	-	-	-	-	-
Manganese	7439-96-5	5.59E-07	2.45E-06	2.45E-06	-	5.59E-07	2.45E-06	2.45E-06	-	-	-	-	-	3.35E-06	1.47E-05	1.47E-05	-	-	-	-	-	-	-
Mercury	7439-97-6	3.82E-07	1.67E-06	1.67E-06	-	3.82E-07	1.67E-06	1.67E-06	-	-	-	-	-	2.29E-06	1.00E-05	1.00E-05	-	-	-	-	-	-	-
Nickel	7440-02-0	3.09E-06	1.35E-05	1.35E-05	-	3.09E-06	1.35E-05	1.35E-05	-	-	-	-	-	1.85E-05	8.12E-05	8.12E-05	-	-	-	-	-	-	-
Selenium	7782-49-2	3.53E-08	1.55E-07	1.55E-07	-	3.53E-08	1.55E-07	1.55E-07	-	-	-	-	-	2.12E-07	9.28E-07	9.28E-07	-	-	-	-	-	-	-
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-																						

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

om air		Thermal Oxidizer	
018	Tempo ID No.:	TREA	023
	Delta SV ID No.:	STRU23	

Pollutant	CAS # (if applicable)	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	2.94		5.96E-02	0.26	0.26	
PM ₁₀	-	2.94		5.96E-02	0.26	0.26	
PM _{2.5}	-	2.94		5.96E-02	2.61E-01	2.61E-01	
SO ₂	-	0.00		4.71E-03	2.06E-02	2.06E-02	
NOx	-	0.00		0.78	3.44	3.44	
VOC	-	2.94		0.043	0.19	0.19	
CO	-	0.00		0.66	2.89	2.89	
Pb	-	0.00		3.92E-06	1.72E-05	1.72E-05	
CO ₂	-	0.00		935	4096	4096	
CH ₄	-	0.00		1.76E-02	7.72E-02	7.72E-02	
N ₂ O	-	0.00		1.76E-03	7.72E-03	7.72E-03	
CO ₂ e	-	0.00		936	4096	4096	
Total HAPs	-	-	-	1.48E-02	6.49E-02	6.49E-02	-
Acetaldehyde	75-07-0						
Arsenic	7440-38-2			1.57E-06	6.87E-06	6.87E-06	
Benzene	71-43-2	-	-	1.65E-05	7.21E-05	7.21E-05	-
Dichlorobenzene	25321-22-6	-	-	9.41E-06	4.12E-05	4.12E-05	-
Formaldehyde	50-00-0	-	-	5.88E-04	2.58E-03	2.58E-03	-
Hexane	110-54-3	-	-	1.41E-02	6.18E-02	6.18E-02	-
Naphthalene	91-20-3	-	-	4.78E-06	2.10E-05	2.10E-05	-
Toluene	108-88-3	-	-	2.67E-05	1.17E-04	1.17E-04	-
POH	-	-	-	6.78E-07	2.97E-06	2.97E-06	-
Beryllium	7440-41-7	-	-	9.41E-08	4.12E-07	4.12E-07	-
Cadmium	7440-43-9	-	-	8.63E-06	3.78E-05	3.78E-05	-
Chromium	7440-47-3	-	-	1.10E-05	4.81E-05	4.81E-05	-
Cobalt	-	-	-	6.59E-07	2.89E-06	2.89E-06	-
Manganese	7439-96-5	-	-	2.98E-06	1.31E-05	1.31E-05	-
Mercury	7439-97-6	-	-	2.04E-06	8.93E-06	8.93E-06	-
Nickel	7440-02-0	-	-	1.65E-05	7.21E-05	7.21E-05	-
Selenium	7782-49-2	-	-	1.88E-07	8.24E-07	8.24E-07	-
Phenol	108-95-2	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-
Highest Facility Single HAP:	-						

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Natural Smoke Gen 1										Natural Smoke Gen 2					Refined Products Machinery					Refined Products Air Room					Refined Products MAU 1					Refined Product	
		Tempo ID No.:		EQUI 068		Tempo ID No.:		EQUI 069		Tempo ID No.:		EQUI 071		Tempo ID No.:		EQUI 072		Tempo ID No.:		EQUI 073		Tempo ID No.:		EQUI							
		Tempo SV ID No.:		STRU 11 and STRU 12		Tempo SV ID No.:		STRU12-13, STRU 38		Tempo SV ID No.:		STRU 23		Tempo SV ID No.:		STRU03, 04		Tempo SV ID No.:		STRU 05		Tempo SV ID No.:		STRU 06							
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy							
PM	-	0.80	3.48			0.80	3.48			2.16	2769	9.47		8.38	245	36.7		3.65E-02	0.16	0.16		3.65E-02	0.16	0.16							
PM ₁₀	-	0.80	3.48			0.80	3.48			15.6	7025	68.3		8.38	229	36.7		3.65E-02	0.16	0.16		3.65E-02	0.16	0.16							
PM _{2.5}	-	0.80	3.48			0.80	3.48			15.5	6974	67.8		8.38	229	36.7		3.65E-02	0.16	0.16		3.65E-02	0.16	0.16							
SO ₂	-	0.00E+00	0.00E+00			0.00	0.00			0.00	0.00	0.00						2.88E-03	0.01	0.01		2.88E-03	0.01	0.01							
NO _x	-	2.10E-02	9.20E-02			2.10E-02	9.20E-02			0.00E+00	0.00E+00	0.00E+00						4.80E-01	2.10	2.10		4.80E-01	2.10	2.10							
VOC	-	0.66	2.89			0.66	2.89			0.89	129.44	3.88		8.38	36.7	36.7		2.64E-02	0.12	0.12		2.64E-02	0.12	0.12							
CO	-	1.62	7.10			1.62	7.10			0.00E+00	0.00E+00	0.00E+00						4.03E-01	1.77E+00	1.77E+00		4.03E-01	1.77E+00	1.77E+00							
Pb	-	0.00E+00	0.00E+00			0.00	0.00			0.00E+00	0.00E+00	0.00E+00						2.40E-06	1.05E-05	1.05E-05		2.40E-06	1.05E-05	1.05E-05							
CO ₂	-	31.0	136			31.0	136			0.00E+00	0.00E+00	0.00E+00						572	2507	2507		572	2507	2507							
CH ₄	-	2.38E-03	1.04E-02			2.38E-03	1.04E-02			0.00E+00	0.00E+00	0.00E+00						1.08E-02	4.73E-02	4.73E-02		1.08E-02	4.73E-02	4.73E-02							
N ₂ O	-	1.19E-03	5.21E-03			1.19E-03	5.21E-03			0.00E+00	0.00E+00	0.00E+00						1.08E-03	4.73E-03	4.73E-03		1.08E-03	4.73E-03	4.73E-03							
CO ₂ e	-	31.4	138			31.4	138			0.00E+00	0.00E+00	0.00E+00		0.00	0.00	0.00		572	2507	2507		572	2507	2507							
Total HAPs	-	1.24E-01	5.42E-01	NA	-	1.24E-01	5.42E-01	NA	-	-	-	-	-	-	-	-	-	9.06E-03	3.97E-02	3.97E-02	-	9.06E-03	3.97E-02	3.97E-02	-						
Acetaldehyde	75-07-0	3.90E-02	1.71E-01	NA	-	3.90E-02	1.71E-01	NA	-	-	-	-	-	-	-	-	-	9.60E-07	4.20E-06	4.20E-06	-	9.60E-07	4.20E-06	4.20E-06	-						
Arsenic	7440-38-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.01E-05	4.42E-05	4.42E-05	-	1.01E-05	4.42E-05	4.42E-05	-						
Benzene	71-43-2	2.91E-02	1.27E-01	NA	-	2.91E-02	1.27E-01	NA	-	-	-	-	-	-	-	-	-	5.76E-06	2.52E-05	2.52E-05	-	5.76E-06	2.52E-05	2.52E-05	-						
Dichlorobenzene	25321-22-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.60E-04	1.58E-03	1.58E-03	-	3.60E-04	1.58E-03	1.58E-03	-						
Formaldehyde	50-00-0	1.54E-02	6.75E-02	NA	-	1.54E-02	6.75E-02	NA	-	-	-	-	-	-	-	-	-	8.64E-03	3.78E-02	3.78E-02	-	8.64E-03	3.78E-02	3.78E-02	-						
Hexane	110-54-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.93E-06	1.28E-05	1.28E-05	-	2.93E-06	1.28E-05	1.28E-05	-						
Naphthalene	91-20-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.63E-05	7.15E-05	7.15E-05	-	1.63E-05	7.15E-05	7.15E-05	-						
Toluene	108-88-3	1.10E-02	4.80E-02	NA	-	1.10E-02	4.80E-02	NA	-	-	-	-	-	-	-	-	-	4.15E-07	1.82E-06	1.82E-06	-	4.15E-07	1.82E-06	1.82E-06	-						
POM	-	1.10E-02	4.80E-02	NA	-	1.10E-02	4.80E-02	NA	-	-	-	-	-	-	-	-	-	5.76E-08	2.52E-07	2.52E-07	-	5.76E-08	2.52E-07	2.52E-07	-						
Beryllium	7440-41-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.28E-06	2.31E-05	2.31E-05	-	5.28E-06	2.31E-05	2.31E-05	-						
Cadmium	7440-43-9	3.30E-07	1.45E-06	NA	-	3.30E-07	1.45E-06	NA	-	-	-	-	-	-	-	-	-	6.72E-06	2.94E-05	2.94E-05	-	6.72E-06	2.94E-05	2.94E-05	-						
Chromium	7440-47-3	1.50E-08	6.57E-08	NA	-	1.50E-08	6.57E-08	NA	-	-	-	-	-	-	-	-	-	4.03E-07	1.77E-06	1.77E-06	-	4.03E-07	1.77E-06	1.77E-06	-						
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.82E-06	7.99E-06	7.99E-06	-	1.82E-06	7.99E-06	7.99E-06	-						
Manganese	7439-96-5	2.55E-06	1.12E-05	NA	-	2.55E-06	1.12E-05	NA	-	-	-	-	-	-	-	-	-	1.25E-06	5.47E-06	5.47E-06	-	1.25E-06	5.47E-06	5.47E-06	-						
Mercury	7439-97-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.01E-05	4.42E-05	4.42E-05	-	1.01E-05	4.42E-05	4.42E-05	-						
Nickel	7440-02-0	2.10E-07	9.20E-07	NA	-	2.10E-07	9.20E-07	NA	-	-	-	-	-	-	-	-	-	1.15E-07	5.05E-07	5.05E-07	-	1.15E-07	5.05E-07	5.05E-07	-						
Selenium	7782-49-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Phenol	108-95-2	1.54E-02	6.75E-02	NA	-	1.54E-02	6.75E-02	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
o-xylene	1330-20-7	3.03E-03	1.33E-02	NA	-	3.03E-03	1.33E-02	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Highest Facility Single HAP:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

ts MAU 2				Refined Products MAU 3				Natural Smoke Gen 3				Natural Smoke Gen 4				Natural Smoke Gen 5				Natural Smoke Gen 6				
074		Tempo ID No.:	EQUI	075		Tempo ID No.:	EQUI	076		Tempo ID No.:	EQUI	077		Tempo ID No.:	EQUI	078		Tempo ID No.:	EQUI	079		Tempo ID No.:		
		Tempo SV ID No.:	STRU 07			Tempo SV ID No.:	STRU 48-49			Tempo SV ID No.:	STRU 49-51			Tempo SV ID No.:	STRU 51-52			Tempo SV ID No.:	STRU 01, STRU 38-39			Tempo SV ID No.:		
Pollutant	CAS # (if applicable)	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)
PM	-	0.16		1.82E-02	7.99E-02	7.99E-02		0.80	3.48			0.80	3.48			0.80	3.48			0.80	3.48			0.80
PM ₁₀	-	0.16		1.82E-02	7.99E-02	7.99E-02		0.80	3.48			0.80	3.48			0.80	3.48			0.80	3.48			0.80
PM _{2.5}	-	0.16		1.82E-02	7.99E-02	7.99E-02		0.80	3.48			0.80	3.48			0.80	3.48			0.80	3.48			0.80
SO ₂	-	1.26E-02		1.44E-03	6.31E-03	6.31E-03		0.00	0.00			0	0			0.00	0.00			0.00	0.00			0.00
NO _x	-	2.10		0.24	1.05	1.05		2.10E-02	9.20E-02			2.10E-02	9.20E-02			2.10E-02	9.20E-02			2.10E-02	9.20E-02			2.10E-02
VOC	-	0.12		0.01	0.06	0.06		0.66	2.89			0.66	2.89			0.66	2.89			0.66	2.89			0.66
CO	-	1.77		0.20	0.88	0.88		1.89	8.28			1.89	8.28			1.89	8.28			1.62	7.10			1.62
Pb	-	1.05E-05		1.20E-06	5.26E-06	5.26E-06		0.00E+00	0.00E+00			0.00E+00	0.00E+00											
CO ₂	-	2.51E+03		2.86E+02	1.25E+03	1.25E+03		3.10E+01	1.36E+02			3.10E+01	1.36E+02			31.0	136			31.0	136			31.0
CH ₄	-	4.73E-02		5.40E-03	2.36E-02	2.36E-02		2.38E-03	1.04E-02			2.38E-03	1.04E-02			2.38E-03	1.04E-02			2.38E-03	1.04E-02			2.38E-03
N ₂ O	-	4.73E-03		5.40E-04	2.36E-03	2.36E-03		1.19E-03	5.21E-03			1.19E-03	5.21E-03			1.19E-03	5.21E-03			1.19E-03	5.21E-03			1.19E-03
CO _{2e}	-	2509		286	1255	1255		31.4	138			31.4	138			31.40	137.54			31.4	138			31.4
Total HAPs	-	3.97E-02	-	4.53E-03	1.98E-02	1.98E-02	-	1.24E-01	5.42E-01	0.00E+00	-	1.24E-01	5.42E-01	0.00E+00	-	1.24E-01	5.42E-01	0.00E+00	-	1.24E-01	5.42E-01	0.00E+00	-	1.24E-01
Acetaldehyde	75-07-0	-		-	-	-		3.90E-02	1.71E-01	NA	-	3.90E-02	1.71E-01	NA	-	3.90E-02	1.71E-01	NA	-	3.90E-02	1.71E-01	NA	-	3.90E-02
Arsenic	7440-38-2	4.20E-06	-	4.80E-07	2.10E-06	2.10E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	71-43-2	4.42E-05	-	5.04E-06	2.21E-05	2.21E-05	-	2.91E-02	1.27E-01	NA	-	2.91E-02	1.27E-01	NA	-	2.91E-02	1.27E-01	NA	-	2.91E-02	1.27E-01	NA	-	2.91E-02
Dichlorobenzene	25321-22-6	2.52E-05	-	2.88E-06	1.26E-05	1.26E-05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Formaldehyde	50-00-0	1.58E-03	-	1.80E-04	7.88E-04	7.88E-04	-	1.54E-02	6.75E-02	NA	-	1.54E-02	6.75E-02	NA	-	1.54E-02	6.75E-02	NA	-	1.54E-02	6.75E-02	NA	-	1.54E-02
Hexane	110-54-3	3.78E-02	-	4.32E-03	1.89E-02	1.89E-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Napthalene	91-20-3	1.28E-05	-	1.46E-06	6.41E-06	6.41E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	108-88-3	7.15E-05	-	8.16E-06	3.57E-05	3.57E-05	-	1.10E-02	4.80E-02	NA	-	1.10E-02	4.80E-02	NA	-	1.10E-02	4.80E-02	NA	-	1.10E-02	4.80E-02	NA	-	1.10E-02
POM	-	1.82E-06	-	2.07E-07	9.08E-07	9.08E-07	-	1.10E-02	4.80E-02	NA	-	1.10E-02	4.80E-02	NA	-	1.10E-02	4.80E-02	NA	-	1.10E-02	4.80E-02	NA	-	1.10E-02
Beryllium	7440-41-7	2.52E-07	-	2.88E-08	1.26E-07	1.26E-07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	7440-43-9	2.31E-05	-	2.64E-06	1.16E-05	1.16E-05	-	3.30E-07	1.45E-06	NA	-	3.30E-07	1.45E-06	NA	-	3.30E-07	1.45E-06	NA	-	3.30E-07	1.45E-06	NA	-	3.30E-07
Chromium	7440-47-3	2.94E-05	-	3.36E-06	1.47E-05	1.47E-05	-	1.50E-08	6.57E-08	NA	-	1.50E-08	6.57E-08	NA	-	1.50E-08	6.57E-08	NA	-	1.50E-08	6.57E-08	NA	-	1.50E-08
Cobalt	-	1.77E-06	-	2.02E-07	8.83E-07	8.83E-07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	7439-96-5	7.99E-06	-	9.12E-07	3.99E-06	3.99E-06	-	2.55E-06	1.12E-05	NA	-	2.55E-06	1.12E-05	NA	-	2.55E-06	1.12E-05	NA	-	2.55E-06	1.12E-05	NA	-	2.55E-06
Mercury	7439-97-6	5.47E-06	-	6.24E-07	2.73E-06	2.73E-06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	7440-02-0	4.42E-05	-	5.04E-06	2.21E-05	2.21E-05	-	2.10E-07	9.20E-07	NA	-	2.10E-07	9.20E-07	NA	-	2.10E-07	9.20E-07	NA	-	2.10E-07	9.20E-07	NA	-	2.10E-07
Selenium	7782-49-2	5.05E-07	-	5.76E-08	2.52E-07	2.52E-07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	108-95-2	-	-	-	-	-	-	1.54E-02	6.75E-02	NA	-	1.54E-02	6.75E-02	NA	-	1.54E-02	6.75E-02	NA	-	1.54E-02	6.75E-02	NA	-	1.54E-02
o-xylene	1330-20-7	-	-	-	-	-	-	3.03E-03	1.33E-02	NA	-	3.03E-03	1.33E-02	NA	-	3.03E-03	1.33E-02	NA	-	3.03E-03	1.33E-02	NA	-	3.03E-03
Highest Facility Single HAP:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Facility Name: Hormel Foods
Facility ID: Core/Qualitv Pork
Agency Interest No.: 09900002
Emissions Summary 3926

Natural Smoke Gen 7				NG-fired EG				KC 13 Unit				MP4				Dehair MAU KC 146-2				MAU #4			
EQUI 080		Tempo ID No.:	EQUI 081	Tempo ID No.:	EQUI 090	Tempo ID No.:	EQUI 091	Tempo ID No.:	EQUI 092	Tempo ID No.:	EQUI 093	Tempo ID No.:	EQUI 092	Tempo ID No.:	EQUI 093	Tempo ID No.:	EQUI 092	Tempo ID No.:	EQUI 093	Tempo ID No.:	EQUI 093	Tempo ID No.:	EQUI 093
STRU 01, STRU 40		Delta SV ID No:	STRU 16	Tempo SV ID No:	STRU 68	Tempo SV ID No:	STRU 69	Tempo SV ID No:	STRU 70	Tempo SV ID No:	STRU 71	Tempo SV ID No:	STRU 70	Tempo SV ID No:	STRU 71	Tempo SV ID No:	STRU 70	Tempo SV ID No:	STRU 71	Tempo SV ID No:	STRU 71	Tempo SV ID No:	STRU 71
Pollutant	CAS # (if applicable)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy
PM	-	3.48			2.49E-02	6.24E-03	6.24E-03		1.86E-02	8.14E-02	8.14E-02		1.77E-02	7.73E-02	7.73E-02		2.98E-02	1.31E-01	1.31E-01		2.53E-02	1.11E-01	1.11E-01
PM ₁₀	-	3.48			2.49E-02	6.24E-03	6.24E-03		1.86E-02	8.14E-02	8.14E-02		1.77E-02	7.73E-02	7.73E-02		2.98E-02	1.31E-01	1.31E-01		2.53E-02	1.11E-01	1.11E-01
PM _{2.5}	-	3.48			2.49E-02	6.24E-03	6.24E-03		1.86E-02	8.14E-02	8.14E-02		1.77E-02	7.73E-02	7.73E-02		2.98E-02	1.31E-01	1.31E-01		2.53E-02	1.11E-01	1.11E-01
SO ₂	-	0.00			7.56E-04	1.89E-04	1.89E-04		1.47E-03	6.43E-03	6.43E-03		1.39E-03	6.11E-03	6.11E-03		2.35E-03	1.03E-02	1.03E-02		1.99E-03	8.73E-03	8.73E-03
NO _x	-	9.20E-02			2.92	0.73	0.73		0.24	1.07	1.07		0.23	1.02	1.02		0.39	1.72	1.72		0.33	1.46	1.46
VOC	-	2.89			3.80E-02	9.51E-03	9.51E-03		1.35E-02	5.89E-02	5.89E-02		1.28E-02	5.60E-02	5.60E-02		2.16E-02	9.45E-02	9.45E-02		1.83E-02	8.01E-02	8.01E-02
CO	-	7.10			4.78	1.20	1.20		0.21	0.90	0.90		0.20	0.85	0.85		0.33	1.44	1.44		0.28	1.22	1.22
Pb	-								1.22E-06	5.36E-06	5.36E-06		1.16E-06	5.09E-06	5.09E-06		1.96E-06	8.59E-06	8.59E-06		1.66E-06	7.28E-06	7.28E-06
CO ₂	-	136			150	658	658		292	1277	1277		277	1213	1213		468	2048	2048		396	1736	1736
CH ₄	-	1.04E-02			2.83E-03	1.24E-02	1.24E-02		5.50E-03	2.41E-02	2.41E-02		5.22E-03	2.29E-02	2.29E-02		8.82E-03	3.86E-02	3.86E-02		7.47E-03	3.27E-02	3.27E-02
N ₂ O	-	5.21E-03			2.83E-04	1.24E-03	1.24E-03		5.50E-04	2.41E-03	2.41E-03		5.22E-04	2.29E-03	2.29E-03		8.82E-04	3.86E-03	3.86E-03		7.47E-04	3.27E-03	3.27E-03
CO ₂ e	-	138			150	659	659		292	1279	1279		277	1215	1215		468	2050	2050		397	1737	1737
Total HAPs	-	5.42E-01	0.00E+00	-	2.38E-03	5.95E-04	5.95E-04		4.62E-03	2.02E-02	2.02E-02		4.39E-03	1.92E-02	1.92E-02		7.40E-03	3.24E-02	3.24E-02	-	6.27E-03	2.75E-02	2.75E-02
Acetaldehyde	75-07-0	1.71E-01	NA																				
Arsenic	7440-38-2				2.52E-07	6.30E-08	6.30E-08		4.89E-07	2.14E-06	2.14E-06		4.65E-07	2.04E-06	2.04E-06		7.84E-07	3.44E-06	3.44E-06		6.65E-07	2.91E-06	2.91E-06
Benzene	71-43-2	1.27E-01	NA	-	2.65E-06	6.62E-07	6.62E-07	-	5.14E-06	2.25E-05	2.25E-05	-	4.88E-06	2.14E-05	2.14E-05	-	8.24E-06	3.61E-05	3.61E-05	-	6.98E-06	3.06E-05	3.06E-05
Dichlorobenzene	25321-22-6	-	-	-	1.51E-06	3.78E-07	3.78E-07	-	2.94E-06	1.29E-05	1.29E-05	-	2.79E-06	1.22E-05	1.22E-05	-	4.71E-06	2.06E-05	2.06E-05	-	3.99E-06	1.75E-05	1.75E-05
Formaldehyde	50-00-0	6.75E-02	NA	-	9.45E-05	2.36E-05	2.36E-05	-	1.83E-04	8.04E-04	8.04E-04	-	1.74E-04	7.63E-04	7.63E-04	-	2.94E-04	1.29E-03	1.29E-03	-	2.49E-04	1.09E-03	1.09E-03
Hexane	110-54-3	-	-	-	2.27E-03	5.67E-04	5.67E-04	-	4.40E-03	1.93E-02	1.93E-02	-	4.18E-03	1.83E-02	1.83E-02	-	7.06E-03	3.09E-02	3.09E-02	-	5.98E-03	2.62E-02	2.62E-02
Naphthalene	91-20-3	-	-	-	7.69E-07	1.92E-07	1.92E-07	-	1.49E-06	6.54E-06	6.54E-06	-	1.42E-06	6.21E-06	6.21E-06	-	2.39E-06	1.05E-05	1.05E-05	-	2.03E-06	8.88E-06	8.88E-06
Toluene	108-88-3	4.80E-02	NA	-	4.28E-06	1.07E-06	1.07E-06	-	8.32E-06	3.64E-05	3.64E-05	-	7.90E-06	3.46E-05	3.46E-05	-	1.33E-05	5.84E-05	5.84E-05	-	1.13E-05	4.95E-05	4.95E-05
POI	-	4.80E-02	NA	-	1.09E-07	2.72E-08	2.72E-08	-	2.11E-07	9.26E-07	9.26E-07	-	2.01E-07	8.79E-07	8.79E-07	-	3.39E-07	1.48E-06	1.48E-06	-	2.87E-07	1.26E-06	1.26E-06
Beryllium	7440-41-7	-	-	-	1.51E-08	3.78E-09	3.78E-09	-	2.94E-08	1.29E-07	1.29E-07	-	2.79E-08	1.22E-07	1.22E-07	-	4.71E-08	2.06E-07	2.06E-07	-	3.99E-08	1.75E-07	1.75E-07
Cadmium	7440-43-9	1.45E-06	NA	-	1.39E-06	3.47E-07	3.47E-07	-	2.69E-06	1.18E-05	1.18E-05	-	2.56E-06	1.12E-05	1.12E-05	-	4.31E-06	1.89E-05	1.89E-05	-	3.66E-06	1.60E-05	1.60E-05
Chromium	7440-47-3	6.57E-08	NA	-	1.76E-06	4.41E-07	4.41E-07	-	3.42E-06	1.50E-05	1.50E-05	-	3.25E-06	1.42E-05	1.42E-05	-	5.49E-06	2.40E-05	2.40E-05	-	4.65E-06	2.04E-05	2.04E-05
Cobalt	-				1.06E-07	2.65E-08	2.65E-08		2.05E-07	9.00E-07	9.00E-07		1.95E-07	8.55E-07	8.55E-07		3.29E-07	1.44E-06	1.44E-06		2.79E-07	1.22E-06	1.22E-06
Manganese	7439-96-5	1.12E-05	NA	-	4.79E-07	1.20E-07	1.20E-07	-	9.30E-07	4.07E-06	4.07E-06	-	8.83E-07	3.87E-06	3.87E-06	-	1.49E-06	6.53E-06	6.53E-06	-	1.26E-06	5.53E-06	5.53E-06
Mercury	7439-97-6	-	-	-	3.28E-07	8.19E-08	8.19E-08	-	6.36E-07	2.79E-06	2.79E-06	-	6.04E-07	2.65E-06	2.65E-06	-	1.02E-06	4.47E-06	4.47E-06	-	8.64E-07	3.78E-06	3.78E-06
Nickel	7440-02-0	9.20E-07	NA	-	2.65E-06	6.62E-07	6.62E-07	-	5.14E-06	2.25E-05	2.25E-05	-	4.88E-06	2.14E-05	2.14E-05	-	8.24E-06	3.61E-05	3.61E-05	-	6.98E-06	3.06E-05	3.06E-05
Selenium	7782-49-2	-	-	-	3.02E-08	7.56E-09	7.56E-09	-	5.87E-08	2.57E-07	2.57E-07	-	5.58E-08	2.44E-07	2.44E-07	-	9.41E-08	4.12E-07	4.12E-07	-	7.98E-08	3.49E-07	3.49E-07
Phenol	108-95-2	6.75E-02	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	1.33E-02	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-																						

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Rendering Air MAH #2				Old Boiler Room MAU				Hog Hair Singer #1				Hog Hair Singer #2				Pretreatment Space Htr #1				KC-9 MAH			
Tempo ID No.:	EQUI	094		Tempo ID No.:	EQUI	095		Tempo ID No.:	EQUI	096		Tempo ID No.:	EQUI	123		Tempo ID No.:	EQUI	098		Tempo ID No.:	EQUI		
Tempo SV ID No.:	STRU 20			Tempo SV ID No.:	STRU 72			Tempo SV ID No.:	STRU 56			Tempo SV ID No.:	STRU 44			Tempo SV ID No.:	STRU 73			Tempo SV ID No.:	STRU 17		
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy
PM	-	1.62E-02	7.08E-02	7.08E-02		4.18E-02	1.83E-01	1.83E-01		5.96E-02	2.61E-01	2.61E-01		7.45E-02	3.26E-01	3.26E-01		1.49E-02	6.53E-02	6.53E-02		3.64E-02	1.59E-01
PM ₁₀	-	1.62E-02	7.08E-02	7.08E-02		4.18E-02	1.83E-01	1.83E-01		5.96E-02	2.61E-01	2.61E-01		7.45E-02	3.26E-01	3.26E-01		1.49E-02	6.53E-02	6.53E-02		3.64E-02	1.59E-01
PM _{2.5}	-	1.62E-02	7.08E-02	7.08E-02		4.18E-02	1.83E-01	1.83E-01		5.96E-02	2.61E-01	2.61E-01		7.45E-02	3.26E-01	3.26E-01		1.49E-02	6.53E-02	6.53E-02		3.64E-02	1.59E-01
SO ₂	-	1.28E-03	5.59E-03	5.59E-03		3.30E-03	1.45E-02	1.45E-02		4.71E-03	2.06E-02	2.06E-02		5.88E-03	2.58E-02	2.58E-02		1.18E-03	5.15E-03	5.15E-03		2.87E-03	1.26E-02
NO _x	-	2.13E-01	9.32E-01	9.32E-01		5.51E-01	2.41E+00	2.41E+00		7.84E-01	3.44E+00	3.44E+00		0.98	4.29	4.29		0.20	0.86	0.86		0.48	2.10
VOC	-	1.17E-02	5.13E-02	5.13E-02		3.03E-02	1.33E-01	1.33E-01		4.31E-02	1.89E-01	1.89E-01		5.39E-02	2.36E-01	2.36E-01		1.08E-02	4.72E-02	4.72E-02		2.63E-02	1.15E-01
CO	-	0.18	0.78	0.78		0.46	2.03	2.03		0.66	2.89	2.89		0.82	3.61	3.61		0.16	0.72	0.72		0.40	1.76
Pb	-	1.06E-06	4.66E-06	4.66E-06		2.75E-06	1.21E-05	1.21E-05		3.92E-06	1.72E-05	1.72E-05		4.90E-06	2.15E-05	2.15E-05		9.80E-07	4.29E-06	4.29E-06		2.39E-06	1.05E-05
CO ₂	-	254	1111	1111		656	2875	2875		935	4096	4096		1169	5120	5120		234	1024	1024		571	2500
CH ₄	-	4.78E-03	2.10E-02	2.10E-02		1.24E-02	5.42E-02	5.42E-02		1.76E-02	7.72E-02	7.72E-02		2.20E-02	9.66E-02	9.66E-02		4.41E-03	1.93E-02	1.93E-02		1.08E-02	4.72E-02
N ₂ O	-	4.78E-04	2.10E-03	2.10E-03		1.24E-03	5.42E-03	5.42E-03		1.76E-03	7.72E-03	7.72E-03		2.20E-03	9.66E-03	9.66E-03		4.41E-04	1.93E-03	1.93E-03		1.08E-03	4.72E-03
CO ₂ e	-	254	1112	1112		657	2878	2878		936	4100	4100		1170	5125	5125		234	1025	1025		571	2503
Total HAPs	-	4.02E-03	1.76E-02	1.76E-02		1.04E-02	4.55E-02	4.55E-02		1.48E-02	6.49E-02	6.49E-02		1.85E-02	8.11E-02	8.11E-02	-	3.70E-03	1.62E-02	1.62E-02		9.04E-03	3.96E-02
Acetaldehyde	75-07-0																						
Arsenic	7440-38-2	4.25E-07	1.86E-06	1.86E-06		1.10E-06	4.82E-06	4.82E-06		1.57E-06	6.87E-06	6.87E-06		1.96E-06	8.59E-06	8.59E-06		3.92E-07	1.72E-06	1.72E-06		9.57E-07	4.19E-06
Benzene	71-43-2	4.47E-06	1.96E-05	1.96E-05	-	1.16E-05	5.06E-05	5.06E-05	-	1.65E-05	7.21E-05	7.21E-05	-	2.06E-05	9.02E-05	9.02E-05	-	4.12E-06	1.80E-05	1.80E-05	-	1.01E-05	4.40E-05
Dichlorobenzene	25321-22-6	2.55E-06	1.12E-05	1.12E-05	-	6.61E-06	2.89E-05	2.89E-05	-	9.41E-06	4.12E-05	4.12E-05	-	1.18E-05	5.15E-05	5.15E-05	-	2.35E-06	1.03E-05	1.03E-05	-	5.74E-06	2.52E-05
Formaldehyde	50-00-0	1.60E-04	6.99E-04	6.99E-04	-	4.13E-04	1.81E-03	1.81E-03	-	5.88E-04	2.58E-03	2.58E-03	-	7.35E-04	3.22E-03	3.22E-03	-	1.47E-04	6.44E-04	6.44E-04	-	3.59E-04	1.57E-03
Hexane	110-54-3	3.83E-03	1.68E-02	1.68E-02	-	9.91E-03	4.34E-02	4.34E-02	-	1.41E-02	6.18E-02	6.18E-02	-	1.76E-02	7.73E-02	7.73E-02	-	3.53E-03	1.55E-02	1.55E-02	-	8.62E-03	3.77E-02
Naphthalene	91-20-3	1.30E-06	5.68E-06	5.68E-06	-	3.36E-06	1.47E-05	1.47E-05	-	4.78E-06	2.10E-05	2.10E-05	-	5.98E-06	2.62E-05	2.62E-05	-	1.20E-06	5.24E-06	5.24E-06	-	2.92E-06	1.28E-05
Toluene	108-88-3	7.23E-06	3.17E-05	3.17E-05	-	1.87E-05	8.20E-05	8.20E-05	-	2.67E-05	1.17E-04	1.17E-04	-	3.33E-05	1.46E-04	1.46E-04	-	6.67E-06	2.92E-05	2.92E-05	-	1.63E-05	7.13E-05
POI	-	1.84E-07	8.05E-07	8.05E-07	-	4.76E-07	2.08E-06	2.08E-06	-	6.78E-07	2.97E-06	2.97E-06	-	8.47E-07	3.71E-06	3.71E-06	-	1.69E-07	7.42E-07	7.42E-07	-	1.44E-07	1.81E-06
Beryllium	7440-41-7	2.55E-08	1.12E-07	1.12E-07	-	6.61E-08	2.89E-07	2.89E-07	-	9.41E-08	4.12E-07	4.12E-07	-	1.18E-07	5.15E-07	5.15E-07	-	2.35E-08	1.03E-07	1.03E-07	-	5.74E-08	2.52E-07
Cadmium	7440-43-9	2.34E-06	1.03E-05	1.03E-05	-	6.06E-06	2.65E-05	2.65E-05	-	8.63E-06	3.78E-05	3.78E-05	-	1.08E-05	4.72E-05	4.72E-05	-	2.16E-06	9.45E-06	9.45E-06	-	5.27E-06	2.31E-05
Chromium	7440-47-3	2.98E-06	1.30E-05	1.30E-05	-	7.71E-06	3.38E-05	3.38E-05	-	1.10E-05	4.81E-05	4.81E-05	-	1.37E-05	6.01E-05	6.01E-05	-	2.75E-06	1.20E-05	1.20E-05	-	6.70E-06	2.94E-05
Cobalt	-	1.79E-07	7.83E-07	7.83E-07	-	4.62E-07	2.03E-06	2.03E-06	-	6.59E-07	2.89E-06	2.89E-06	-	8.24E-07	3.61E-06	3.61E-06	-	1.65E-07	7.21E-07	7.21E-07	-	4.02E-07	1.76E-06
Manganese	7439-96-5	8.08E-07	3.54E-06	3.54E-06	-	2.09E-06	9.16E-06	9.16E-06	-	2.98E-06	1.31E-05	1.31E-05	-	3.73E-06	1.63E-05	1.63E-05	-	7.45E-07	3.26E-06	3.26E-06	-	1.82E-06	7.97E-06
Mercury	7439-97-6	5.53E-07	2.42E-06	2.42E-06	-	1.43E-06	6.27E-06	6.27E-06	-	2.04E-06	8.93E-06	8.93E-06	-	2.55E-06	1.12E-05	1.12E-05	-	5.10E-07	2.23E-06	2.23E-06	-	1.24E-06	5.45E-06
Nickel	7440-02-0	4.47E-06	1.96E-05	1.96E-05	-	1.16E-05	5.06E-05	5.06E-05	-	1.65E-05	7.21E-05	7.21E-05	-	2.06E-05	9.02E-05	9.02E-05	-	4.12E-06	1.80E-05	1.80E-05	-	1.01E-05	4.40E-05
Selenium	7782-49-2	5.11E-08	2.24E-07	2.24E-07	-	1.32E-07	5.79E-07	5.79E-07	-	1.88E-07	8.24E-07	8.24E-07	-	2.35E-07	1.03E-06	1.03E-06	-	4.71E-08	2.06E-07	2.06E-07	-	1.15E-07	5.03E-07
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-																						

3926

H:\Hormel\Calculations\MPCA Calculations[GI-07]

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

QPP Animal Welfare MAU-1				QPP Animal Welfare MAU-2				Dehair MAU KC146-1				Machinery Room MAU 3				Machinery Room MAU 5				Pretreatment Space Htr #3			
EQUI 105		Tempo ID No.:	EQUI 106	Tempo ID No.:	EQUI 107		Tempo ID No.:	EQUI 108		Tempo ID No.:	EQUI 109		Tempo ID No.:	EQUI 110		Tempo ID No.:							
STRU 77		Tempo SV ID No.:	STRU 78		Tempo SV ID No.:	STRU 79		Tempo SV ID No.:	STRU 80		Tempo SV ID No.:	STRU 81		Tempo SV ID No.:	STRU 82		Tempo SV ID No.:						
Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy						
7.68E-02	7.68E-02		1.75E-02	7.68E-02	7.68E-02	2.98E-02	1.31E-01	1.31E-01	2.28E-02	1.00E-01	1.00E-01	2.28E-02	1.00E-01	1.00E-01	1.77E-02	7.77E-02	7.77E-02						
7.68E-02	7.68E-02		1.75E-02	7.68E-02	7.68E-02	2.98E-02	1.31E-01	1.31E-01	2.28E-02	1.00E-01	1.00E-01	2.28E-02	1.00E-01	1.00E-01	1.77E-02	7.77E-02	7.77E-02						
7.68E-02	7.68E-02		1.75E-02	7.68E-02	7.68E-02	2.98E-02	1.31E-01	1.31E-01	2.28E-02	1.00E-01	1.00E-01	2.28E-02	1.00E-01	1.00E-01	1.77E-02	7.77E-02	7.77E-02						
6.06E-03	6.06E-03		1.38E-03	6.06E-03	6.06E-03	2.35E-03	1.03E-02	1.03E-02	1.80E-03	7.89E-03	7.89E-03	1.80E-03	7.89E-03	7.89E-03	1.40E-03	6.13E-03	6.13E-03						
1.01E+00	1.01E+00		2.31E-01	1.01E+00	1.01E+00	3.92E-01	1.72E+00	1.72E+00	0.30	1.32	1.32	0.30	1.32	1.32	0.23	1.02	1.02						
5.56E-02	5.56E-02		1.27E-02	5.56E-02	5.56E-02	2.16E-02	9.45E-02	9.45E-02	1.65E-02	7.24E-02	7.24E-02	1.65E-02	7.24E-02	7.24E-02	1.28E-02	5.62E-02	5.62E-02						
8.49E-01	8.49E-01		1.94E-01	8.49E-01	8.49E-01	3.29E-01	1.44E+00	1.44E+00	2.52E-01	1.11E+00	1.11E+00	2.52E-01	1.11E+00	1.11E+00	1.96E-01	8.59E-01	8.59E-01						
5.05E-06	5.05E-06		1.15E-06	5.05E-06	5.05E-06	1.96E-06	8.59E-06	8.59E-06	1.50E-06	6.58E-06	6.58E-06	1.50E-06	6.58E-06	6.58E-06	1.17E-06	5.11E-06	5.11E-06						
1205	1205		275	1205	1205	468	2048	2048	358	1569	1569	358	1569	1569	278	1219	1219						
2.27E-02	2.27E-02		5.19E-03	2.27E-02	2.27E-02	8.82E-03	3.86E-02	3.86E-02	6.75E-03	2.96E-02	2.96E-02	6.75E-03	2.96E-02	2.96E-02	5.25E-03	2.30E-02	2.30E-02						
2.27E-02	2.27E-02		5.19E-04	2.27E-03	2.27E-03	8.82E-04	3.86E-03	3.86E-03	6.75E-04	2.96E-03	2.96E-03	6.75E-04	2.96E-03	2.96E-03	5.25E-04	2.30E-03	2.30E-03						
1206	1206		275	1206	1206	468	2050	2050	359	1570	1570	359	1570	1570	279	1220	1220						
1.91E-02	1.91E-02		4.36E-03	1.91E-02	1.91E-02	7.40E-03	3.24E-02	3.24E-02	5.67E-03	2.48E-02	2.48E-02	5.67E-03	2.48E-02	2.48E-02	4.41E-03	1.93E-02	1.93E-02						
2.02E-06	2.02E-06		4.61E-07	2.02E-06	2.02E-06	7.84E-07	3.44E-06	3.44E-06	6.01E-07	2.63E-06	2.63E-06	6.01E-07	2.63E-06	2.63E-06	4.67E-07	2.04E-06	2.04E-06						
2.12E-05	2.12E-05	-	4.84E-06	2.12E-05	2.12E-05	8.24E-06	3.61E-05	3.61E-05	6.31E-06	2.76E-05	2.76E-05	6.31E-06	2.76E-05	2.76E-05	4.90E-06	2.15E-05	2.15E-05						
1.21E-05	1.21E-05	-	2.77E-06	1.21E-05	1.21E-05	4.71E-06	2.06E-05	2.06E-05	3.60E-06	1.58E-05	1.58E-05	3.60E-06	1.58E-05	1.58E-05	2.80E-06	1.23E-05	1.23E-05						
7.58E-04	7.58E-04	-	1.73E-04	7.58E-04	7.58E-04	2.94E-04	1.29E-03	1.29E-03	2.25E-04	9.87E-04	9.87E-04	2.25E-04	9.87E-04	9.87E-04	1.75E-04	7.67E-04	7.67E-04						
1.82E-02	1.82E-02	-	4.15E-03	1.82E-02	1.82E-02	7.06E-03	3.09E-02	3.09E-02	5.41E-03	2.37E-02	2.37E-02	5.41E-03	2.37E-02	2.37E-02	4.20E-03	1.84E-02	1.84E-02						
6.16E-06	6.16E-06	-	1.41E-06	6.16E-06	6.16E-06	2.39E-06	1.05E-05	1.05E-05	1.83E-06	8.03E-06	8.03E-06	1.83E-06	8.03E-06	8.03E-06	1.42E-06	6.24E-06	6.24E-06						
3.44E-05	3.44E-05	-	7.84E-06	3.44E-05	3.44E-05	1.33E-05	5.84E-05	5.84E-05	1.02E-05	4.47E-05	4.47E-05	1.02E-05	4.47E-05	4.47E-05	7.94E-06	3.48E-05	3.48E-05						
8.73E-07	8.73E-07	-	1.99E-07	8.73E-07	8.73E-07	3.39E-07	1.48E-06	1.48E-06	2.60E-07	1.14E-06	1.14E-06	2.60E-07	1.14E-06	1.14E-06	2.02E-07	8.83E-07	8.83E-07						
1.21E-07	1.21E-07	-	2.77E-08	1.21E-07	1.21E-07	4.71E-08	2.06E-07	2.06E-07	3.60E-08	1.58E-07	1.58E-07	3.60E-08	1.58E-07	1.58E-07	2.80E-08	1.23E-07	1.23E-07						
1.11E-05	1.11E-05	-	2.54E-06	1.11E-05	1.11E-05	4.31E-06	1.89E-05	1.89E-05	3.30E-06	1.45E-05	1.45E-05	3.30E-06	1.45E-05	1.45E-05	2.57E-06	1.12E-05	1.12E-05						
1.41E-05	1.41E-05	-	1.94E-07	8.49E-07	1.41E-05	5.49E-06	2.40E-05	2.40E-05	4.21E-06	1.84E-05	1.84E-05	4.21E-06	1.84E-05	1.84E-05	3.27E-06	1.43E-05	1.43E-05						
8.49E-07	8.49E-07	-	3.23E-06	1.41E-05	8.49E-07	3.29E-07	1.44E-06	1.44E-06	2.52E-07	1.11E-06	1.11E-06	2.52E-07	1.11E-06	1.11E-06	1.96E-07	8.59E-07	8.59E-07						
3.84E-06	3.84E-06	-	8.77E-07	3.84E-06	3.84E-06	1.49E-06	6.53E-06	6.53E-06	1.14E-06	5.00E-06	5.00E-06	1.14E-06	5.00E-06	5.00E-06	8.87E-07	3.89E-06	3.89E-06						
2.63E-06	2.63E-06	-	6.00E-07	2.63E-06	2.63E-06	1.02E-06	4.47E-06	4.47E-06	7.81E-07	3.42E-06	3.42E-06	7.81E-07	3.42E-06	3.42E-06	6.07E-07	2.66E-06	2.66E-06						
2.12E-05	2.12E-05	-	4.84E-06	2.12E-05	2.12E-05	8.24E-06	3.61E-05	3.61E-05	6.31E-06	2.76E-05	2.76E-05	6.31E-06	2.76E-05	2.76E-05	4.90E-06	2.15E-05	2.15E-05						
2.42E-07	2.42E-07	-	5.54E-08	2.42E-07	2.42E-07	9.41E-08	4.12E-07	4.12E-07	7.21E-08	3.16E-07	3.16E-07	7.21E-08	3.16E-07	3.16E-07	5.60E-08	2.45E-07	2.45E-07						
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Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Tempo ID No.:	IA - GP Salt
Tempo SV ID No.:	

Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	6.50E-02	2.85E-01	2.85E-01	
PM ₁₀	-	6.50E-02	2.85E-01	2.85E-01	
PM _{2.5}	-	6.50E-02	2.85E-01	2.85E-01	
SO ₂	-	0.00E+00	0.00E+00	0.00E+00	
NOx	-	0.00	0.00	0.00	
VOC	-	0.00	0.00	0.00	
CO	-	0.00	0.00	0.00	
Pb	-	0.00	0.00	0.00	
CO ₂	-	0.00	0.00	0.00	
CH ₄	-	0.00	0.00	0.00	
N ₂ O	-	0.00	0.00	0.00	
CO ₂ e	-	0.00	0.00	0.00	
Total HAPs	-	-	-	-	-
Acetaldehyde	75-07-0				
Arsenic	7440-38-2				
Benzene	71-43-2	-	-	-	-
Dichlorobenzene	25321-22-6	-	-	-	-
Formaldehyde	50-00-0	-	-	-	-
Hexane	110-54-3	-	-	-	-
Naphthalene	91-20-3	-	-	-	-
Toluene	108-88-3	-	-	-	-
POI	-	-	-	-	-
Beryllium	7440-41-7	-	-	-	-
Cadmium	7440-43-9	-	-	-	-
Chromium	7440-47-3	-	-	-	-
Cobalt	-	-	-	-	-
Manganese	7439-96-5	-	-	-	-
Mercury	7439-97-6	-	-	-	-
Nickel	7440-02-0	-	-	-	-
Selenium	7782-49-2	-	-	-	-
Phenol	108-95-2	-	-	-	-
o-xylene	1330-20-7	-	-	-	-
Highest Facility Single HAP:	-				

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Tempo ID No.:	IA - MP Salt	Tempo ID No.:	IA - GP Sugar	Tempo ID No.:	IA - Pig Skin Salt System	Tempo ID No.:	IA - Kill Floor MAU	Tempo ID No.:	IA - Desiccant Air Handler	Tempo ID No.:	IA - New Boiler
Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:	

	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy
Pollutant																							
PM	-	6.50E-02	2.85E-01	2.85E-01		6.50E-02	2.85E-01	2.85E-01		6.50E-02	2.85E-01	2.85E-01		7.45E-03	3.26E-02	3.26E-02		2.03E-03	8.91E-03	8.91E-03		1.01E-02	4.44E-02
PM ₁₀	-	6.50E-02	2.85E-01	2.85E-01		6.50E-02	2.85E-01	2.85E-01		6.50E-02	2.85E-01	2.85E-01		7.45E-03	3.26E-02	3.26E-02		2.03E-03	8.91E-03	8.91E-03		1.01E-02	4.44E-02
PM _{2.5}	-	6.50E-02	2.85E-01	2.85E-01		6.50E-02	2.85E-01	2.85E-01		6.50E-02	2.85E-01	2.85E-01		7.45E-03	3.26E-02	3.26E-02		2.03E-03	8.91E-03	8.91E-03		1.01E-02	4.44E-02
SO ₂	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		5.88E-04	2.58E-03	2.58E-03		1.61E-04	7.03E-04	7.03E-04		8.01E-04	3.51E-03
NO _x	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		9.80E-02	4.29E-01	4.29E-01		2.68E-02	1.17E-01	1.17E-01		1.33E-01	5.84E-01
VOC	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		5.39E-03	2.36E-02	2.36E-02		1.47E-03	6.45E-03	6.45E-03		7.34E-03	3.21E-02
CO	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		8.24E-02	3.61E-01	3.61E-01		2.25E-02	9.85E-02	9.85E-02		1.12E-01	4.91E-01
Pb	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		4.90E-07	2.15E-06	2.15E-06		1.34E-07	5.86E-07	5.86E-07		6.67E-07	2.92E-06
CO ₂	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		117	512	512		31.9	140	140		159	697
CH ₄	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		2.20E-03	9.66E-03	9.66E-03		6.02E-04	2.64E-03	2.64E-03		3.00E-03	1.31E-02
N ₂ O	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		2.20E-04	9.66E-04	9.66E-04		6.02E-05	2.64E-04	2.64E-04		3.00E-04	1.31E-03
CO ₂ e	-	0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		117	512	512		31.9	140	140		159	698
Total HAPs		-	-	-	-	-	-	-	-	-	-	-	-	1.85E-03	8.11E-03	8.11E-03	-	5.05E-04	2.21E-03	2.21E-03	-	2.52E-03	1.10E-02
Acetaldehyde	75-07-0																						
Arsenic	7440-38-2													1.96E-07	8.59E-07	8.59E-07		5.35E-08	2.34E-07	2.34E-07		2.67E-07	1.17E-06
Benzene	71-43-2	-	-	-	-	-	-	-	-	-	-	-	-	2.06E-06	9.02E-06	9.02E-06	-	5.62E-07	2.46E-06	2.46E-06		2.80E-06	1.23E-05
Dichlorobenzene	25321-22-6	-	-	-	-	-	-	-	-	-	-	-	-	1.18E-06	5.15E-06	5.15E-06	-	3.21E-07	1.41E-06	1.41E-06	-	1.60E-06	7.01E-06
Formaldehyde	50-00-0	-	-	-	-	-	-	-	-	-	-	-	-	7.35E-05	3.22E-04	3.22E-04	-	2.01E-05	8.79E-05	8.79E-05		1.00E-04	4.38E-04
Hexane	110-54-3	-	-	-	-	-	-	-	-	-	-	-	-	1.76E-03	7.73E-03	7.73E-03	-	4.82E-04	2.11E-03	2.11E-03		2.40E-03	1.05E-02
Naphthalene	91-20-3	-	-	-	-	-	-	-	-	-	-	-	-	5.98E-07	2.62E-06	2.62E-06	-	1.63E-07	7.15E-07	7.15E-07		8.14E-07	3.57E-06
Toluene	108-88-3	-	-	-	-	-	-	-	-	-	-	-	-	3.33E-06	1.46E-05	1.46E-05	-	9.10E-07	3.99E-06	3.99E-06		4.54E-06	1.99E-05
POM		-	-	-	-	-	-	-	-	-	-	-	-	8.47E-08	3.71E-07	3.71E-07	-	2.31E-08	1.01E-07	1.01E-07	-	1.15E-07	5.05E-07
Beryllium	7440-41-7	-	-	-	-	-	-	-	-	-	-	-	-	1.18E-08	5.15E-08	5.15E-08	-	3.21E-09	1.41E-08	1.41E-08	-	1.60E-08	7.01E-08
Cadmium	7440-43-9	-	-	-	-	-	-	-	-	-	-	-	-	1.08E-06	4.72E-06	4.72E-06	-	2.94E-07	1.29E-06	1.29E-06	-	1.47E-06	6.43E-06
Chromium	7440-47-3	-	-	-	-	-	-	-	-	-	-	-	-	1.37E-06	6.01E-06	6.01E-06	-	3.75E-07	1.64E-06	1.64E-06	-	1.87E-06	8.18E-06
Cobalt														8.24E-08	3.61E-07	3.61E-07		2.25E-08	9.85E-08	9.85E-08		1.12E-07	4.91E-07
Manganese	7439-96-5	-	-	-	-	-	-	-	-	-	-	-	-	3.73E-07	1.63E-06	1.63E-06	-	1.02E-07	4.45E-07	4.45E-07	-	5.07E-07	2.22E-06
Mercury	7439-97-6	-	-	-	-	-	-	-	-	-	-	-	-	2.55E-07	1.12E-06	1.12E-06	-	6.96E-08	3.05E-07	3.05E-07	-	3.47E-07	1.52E-06
Nickel	7440-02-0	-	-	-	-	-	-	-	-	-	-	-	-	2.06E-06	9.02E-06	9.02E-06	-	5.62E-07	2.46E-06	2.46E-06	-	2.80E-06	1.23E-05
Selenium	7782-49-2	-	-	-	-	-	-	-	-	-	-	-	-	2.35E-08	1.03E-07	1.03E-07	-	6.42E-09	2.81E-08	2.81E-08	-	3.20E-08	1.40E-07
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:																							
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Facility Name: Hormel Foods
Core/Qualitv Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Room	Tempo ID No.:	IA - KC 7
	Tempo SV ID No.	STRU18

Pollutant	CAS # (if applicable)	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	4.44E-02		7.48E-03	3.28E-02	3.28E-02	
PM ₁₀	-	4.44E-02		7.48E-03	3.28E-02	3.28E-02	
PM _{2.5}	-	4.44E-02		7.48E-03	3.28E-02	3.28E-02	
SO ₂	-	3.51E-03		5.91E-04	2.59E-03	2.59E-03	
NO _x	-	5.84E-01		9.84E-02	4.31E-01	4.31E-01	
VOC	-	3.21E-02		5.41E-03	2.37E-02	2.37E-02	
CO	-	4.91E-01		8.27E-02	3.62E-01	3.62E-01	
Pb	-	2.92E-06		4.92E-07	2.16E-06	2.16E-06	
CO ₂	-	697		117	514	514	
CH ₄	-	1.31E-02		2.21E-03	9.69E-03	9.69E-03	
N ₂ O	-	1.31E-03		2.21E-04	9.69E-04	9.69E-04	
CO ₂ e	-	698		117	515	515	
Total HAPs	-	1.10E-02	-	1.86E-03	8.14E-03	8.14E-03	-
Acetaldehyde	75-07-0						
Arsenic	7440-38-2	1.17E-06		1.97E-07	8.62E-07	1.17E-06	
Benzene	71-43-2	1.23E-05		2.07E-06	9.05E-06	9.05E-06	-
Dichlorobenzene	25321-22-6	7.01E-06	-	1.18E-06	5.17E-06	5.17E-06	-
Formaldehyde	50-00-0	4.38E-04		7.38E-05	3.23E-04	3.23E-04	-
Hexane	110-54-3	1.05E-02		1.77E-03	7.76E-03	7.76E-03	-
Naphthalene	91-20-3	3.57E-06		6.00E-07	2.63E-06	2.63E-06	-
Toluene	108-88-3	1.99E-05		3.35E-06	1.47E-05	1.47E-05	-
POI	-	5.05E-07	-	8.50E-08	3.72E-07	3.72E-07	-
Beryllium	7440-41-7	7.01E-08	-	1.18E-08	5.17E-08	5.17E-08	-
Cadmium	7440-43-9	6.43E-06	-	1.08E-06	4.74E-06	4.74E-06	-
Chromium	7440-47-3	8.18E-06	-	1.38E-06	6.04E-06	6.04E-06	-
Cobalt	-	4.91E-07		8.27E-08	3.62E-07	3.62E-07	
Manganese	7439-96-5	2.22E-06	-	3.74E-07	1.64E-06	1.64E-06	-
Mercury	7439-97-6	1.52E-06	-	2.56E-07	1.12E-06	1.12E-06	-
Nickel	7440-02-0	1.23E-05	-	2.07E-06	9.05E-06	9.05E-06	-
Selenium	7782-49-2	1.40E-07	-	2.36E-08	1.03E-07	1.03E-07	-
Phenol	108-95-2	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-
Highest Facility Single HAP:	-						

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Tempo ID No.:	IA - Rendering MAH 1
Tempo SV ID No.:	STRU19

Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	7.45E-03	3.26E-02	3.26E-02	
PM ₁₀	-	7.45E-03	3.26E-02	3.26E-02	
PM _{2.5}	-	7.45E-03	3.26E-02	3.26E-02	
SO ₂	-	5.88E-04	2.58E-03	2.58E-03	
NOx	-	9.80E-02	4.29E-01	4.29E-01	
VOC	-	5.39E-03	2.36E-02	2.36E-02	
CO	-	8.24E-02	3.61E-01	3.61E-01	
Pb	-	4.90E-07	2.15E-06	2.15E-06	
CO ₂	-	117	512	512	
CH ₄	-	2.20E-03	9.66E-03	9.66E-03	
N ₂ O	-	2.20E-04	9.66E-04	9.66E-04	
CO ₂ e	-	117	512	512	
Total HAPs	-	1.85E-03	8.11E-03	8.11E-03	-
Acetaldehyde	75-07-0				
Arsenic	7440-38-2	1.96E-07	8.59E-07	8.59E-07	
Benzene	71-43-2	2.06E-06	9.02E-06	9.02E-06	-
Dichlorobenzene	25321-22-6	1.18E-06	5.15E-06	5.15E-06	-
Formaldehyde	50-00-0	7.35E-05	3.22E-04	3.22E-04	-
Hexane	110-54-3	1.76E-03	7.73E-03	7.73E-03	-
Naphthalene	91-20-3	5.98E-07	2.62E-06	2.62E-06	-
Toluene	108-88-3	3.33E-06	1.46E-05	1.46E-05	-
POI	-	8.47E-08	3.71E-07	3.71E-07	-
Beryllium	7440-41-7	1.18E-08	5.15E-08	5.15E-08	-
Cadmium	7440-43-9	1.08E-06	4.72E-06	4.72E-06	-
Chromium	7440-47-3	1.37E-06	6.01E-06	6.01E-06	-
Cobalt	-	8.24E-08	3.61E-07	3.61E-07	-
Manganese	7439-96-5	3.73E-07	1.63E-06	1.63E-06	-
Mercury	7439-97-6	2.55E-07	1.12E-06	1.12E-06	-
Nickel	7440-02-0	2.06E-06	9.02E-06	9.02E-06	-
Selenium	7782-49-2	2.35E-08	1.03E-07	1.03E-07	-
Phenol	108-95-2	-	-	-	-
o-xylene	1330-20-7	-	-	-	-
Highest Facility Single HAP:	-				

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Tempo ID No.:	IA - Pretreatment Space Htr 2	Tempo ID No.:	IA - N Hold Pen Htr 1	Tempo ID No.:	IA - N Hold Pen Htr 2
Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:	

Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	7.45E-03	3.26E-02	3.26E-02		2.38E-03	1.04E-02	1.04E-02		2.38E-03	1.04E-02	1.04E-02	
PM ₁₀	-	7.45E-03	3.26E-02	3.26E-02		2.38E-03	1.04E-02	1.04E-02		2.38E-03	1.04E-02	1.04E-02	
PM _{2.5}	-	7.45E-03	3.26E-02	3.26E-02		2.38E-03	1.04E-02	1.04E-02		2.38E-03	1.04E-02	1.04E-02	
SO ₂	-	5.88E-04	2.58E-03	2.58E-03		1.88E-04	8.24E-04	8.24E-04		1.88E-04	8.24E-04	8.24E-04	
NO _x	-	9.80E-02	4.29E-01	4.29E-01		3.14E-02	1.37E-01	1.37E-01		3.14E-02	1.37E-01	1.37E-01	
VOC	-	5.39E-03	2.36E-02	2.36E-02		1.73E-03	7.56E-03	7.56E-03		1.73E-03	7.56E-03	7.56E-03	
CO	-	8.24E-02	3.61E-01	3.61E-01		2.64E-02	1.15E-01	1.15E-01		2.64E-02	1.15E-01	1.15E-01	
Pb	-	4.90E-07	2.15E-06	2.15E-06		1.57E-07	6.87E-07	6.87E-07		1.57E-07	6.87E-07	6.87E-07	
CO ₂	-	117	512	512		37.4	164	164		37.4	164	164	
CH ₄	-	2.20E-03	9.66E-03	9.66E-03		7.05E-04	3.09E-03	3.09E-03		7.05E-04	3.09E-03	3.09E-03	
N ₂ O	-	2.20E-04	9.66E-04	9.66E-04		7.05E-05	3.09E-04	3.09E-04		7.05E-05	3.09E-04	3.09E-04	
CO ₂ e	-	117	512	512		37.4	164	164		37.4	164	164	
Total HAPs	-	1.85E-03	8.11E-03	8.11E-03	-	5.92E-04	2.59E-03	2.59E-03	-	5.92E-04	2.59E-03	2.59E-03	-
Acetaldehyde	75-07-0												
Arsenic	7440-38-2	1.96E-07	8.59E-07	8.59E-07		6.27E-08	2.75E-07	2.75E-07		6.27E-08	2.75E-07	2.75E-07	
Benzene	71-43-2	2.06E-06	9.02E-06	9.02E-06	-	6.59E-07	2.89E-06	2.89E-06	-	6.59E-07	2.89E-06	2.89E-06	-
Dichlorobenzene	25321-22-6	1.18E-06	5.15E-06	5.15E-06	-	3.76E-07	1.65E-06	1.65E-06	-	3.76E-07	1.65E-06	1.65E-06	-
Formaldehyde	50-00-0	7.35E-05	3.22E-04	3.22E-04	-	2.35E-05	1.03E-04	1.03E-04	-	2.35E-05	1.03E-04	1.03E-04	-
Hexane	110-54-3	1.76E-03	7.73E-03	7.73E-03	-	5.65E-04	2.47E-03	2.47E-03	-	5.65E-04	2.47E-03	2.47E-03	-
Naphthalene	91-20-3	5.98E-07	2.62E-06	2.62E-06	-	1.91E-07	8.38E-07	8.38E-07	-	1.91E-07	8.38E-07	8.38E-07	-
Toluene	108-88-3	3.33E-06	1.46E-05	1.46E-05	-	1.07E-06	4.67E-06	4.67E-06	-	1.07E-06	4.67E-06	4.67E-06	-
POH	-	8.47E-08	3.71E-07	3.71E-07	-	2.71E-08	1.19E-07	1.19E-07	-	2.71E-08	1.19E-07	1.19E-07	-
Beryllium	7440-41-7	1.18E-08	5.15E-08	5.15E-08	-	3.76E-09	1.65E-08	1.65E-08	-	3.76E-09	1.65E-08	1.65E-08	-
Cadmium	7440-43-9	1.08E-06	4.72E-06	4.72E-06	-	3.45E-07	1.51E-06	1.51E-06	-	3.45E-07	1.51E-06	1.51E-06	-
Chromium	7440-47-3	1.37E-06	6.01E-06	6.01E-06	-	4.39E-07	1.92E-06	1.92E-06	-	4.39E-07	1.92E-06	1.92E-06	-
Cobalt	-	8.24E-08	3.61E-07	3.61E-07	-	2.64E-08	1.15E-07	1.15E-07	-	2.64E-08	1.15E-07	1.15E-07	-
Manganese	7439-96-5	3.73E-07	1.63E-06	1.63E-06	-	1.19E-07	5.22E-07	5.22E-07	-	1.19E-07	5.22E-07	5.22E-07	-
Mercury	7439-97-6	2.55E-07	1.12E-06	1.12E-06	-	8.16E-08	3.57E-07	3.57E-07	-	8.16E-08	3.57E-07	3.57E-07	-
Nickel	7440-02-0	2.06E-06	9.02E-06	9.02E-06	-	6.59E-07	2.89E-06	2.89E-06	-	6.59E-07	2.89E-06	2.89E-06	-
Selenium	7782-49-2	2.35E-08	1.03E-07	1.03E-07	-	7.53E-09	3.30E-08	3.30E-08	-	7.53E-09	3.30E-08	3.30E-08	-
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-												

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Tempo ID No.:	IA - Shop Htr	Tempo ID No.:	IA - Break Room	Tempo ID No.:	IA - Office Boiler	Tempo ID No.:	IA - Refined Products MAU 4	Tempo ID No.:	IA - Refined Products RTU 1
Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:	

Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	5.59E-03	2.45E-02	2.45E-02		9.31E-04	4.08E-03	4.08E-03		2.95E-03	1.29E-02	1.29E-02		4.52E-03	1.98E-02	1.98E-02		7.82E-04	3.43E-03	3.43E-03	
PM ₁₀	-	5.59E-03	2.45E-02	2.45E-02		9.31E-04	4.08E-03	4.08E-03		2.95E-03	1.29E-02	1.29E-02		4.52E-03	1.98E-02	1.98E-02		7.82E-04	3.43E-03	3.43E-03	
PM _{2.5}	-	5.59E-03	2.45E-02	2.45E-02		9.31E-04	4.08E-03	4.08E-03		2.95E-03	1.29E-02	1.29E-02		4.52E-03	1.98E-02	1.98E-02		7.82E-04	3.43E-03	3.43E-03	
SO ₂	-	4.41E-04	1.93E-03	1.93E-03		7.35E-05	3.22E-04	3.22E-04		2.33E-04	1.02E-03	1.02E-03		3.56E-04	1.56E-03	1.56E-03		6.18E-05	2.71E-04	2.71E-04	
NO _x	-	7.35E-02	3.22E-01	3.22E-01		1.23E-02	5.37E-02	5.37E-02		3.88E-02	1.70E-01	1.70E-01		5.94E-02	2.60E-01	2.60E-01		1.03E-02	4.51E-02	4.51E-02	
VOC	-	4.04E-03	1.77E-02	1.77E-02		6.74E-04	2.95E-03	2.95E-03		2.14E-03	9.35E-03	9.35E-03		3.27E-03	1.43E-02	1.43E-02		5.66E-04	2.48E-03	2.48E-03	
CO	-	6.18E-02	2.71E-01	2.71E-01		1.03E-02	4.51E-02	4.51E-02		3.26E-02	1.43E-01	1.43E-01		4.99E-02	2.19E-01	2.19E-01		8.65E-03	3.79E-02	3.79E-02	
Pb	-	3.68E-07	1.61E-06	1.61E-06		6.13E-08	2.68E-07	2.68E-07		1.94E-07	8.50E-07	8.50E-07		2.97E-07	1.30E-06	1.30E-06		5.15E-08	2.25E-07	2.25E-07	
CO ₂	-	87.7	384	384		14.6	64.0	64.0		46.3	203	203		70.8	310	310		12.3	53.8	53.8	
CH ₄	-	1.65E-03	7.24E-03	7.24E-03		2.76E-04	1.21E-03	1.21E-03		8.73E-04	3.82E-03	3.82E-03		1.34E-03	5.85E-03	5.85E-03		2.31E-04	1.01E-03	1.01E-03	
N ₂ O	-	1.65E-04	7.24E-04	7.24E-04		2.76E-05	1.21E-04	1.21E-04		8.73E-05	3.82E-04	3.82E-04		1.34E-04	5.85E-04	5.85E-04		2.31E-05	1.01E-04	1.01E-04	
CO ₂ e	-	87.8	384	384		14.6	64.1	64.1		46.3	203	203		70.9	311	311		12.3	53.8	53.8	
Total HAPs	-	1.39E-03	6.08E-03	6.08E-03	-	2.31E-04	1.01E-03	1.01E-03	-	7.33E-04	3.21E-03	3.21E-03	-	1.12E-03	4.91E-03	4.91E-03	-	1.94E-04	8.51E-04	8.51E-04	-
Acetaldehyde	75-07-0																				
Arsenic	7440-38-2	1.47E-07	6.44E-07	6.44E-07		2.45E-08	1.07E-07	1.07E-07		7.76E-08	3.40E-07	3.40E-07		1.19E-07	5.20E-07	5.20E-07		2.06E-08	9.02E-08	9.02E-08	
Benzene	71-43-2	1.54E-06	6.76E-06	6.76E-06	-	2.57E-07	1.13E-06	1.13E-06	-	8.15E-07	3.57E-06	3.57E-06	-	1.25E-06	5.46E-06	5.46E-06	-	2.16E-07	9.47E-07	9.47E-07	-
Dichlorobenzene	25321-22-6	8.82E-07	3.86E-06	3.86E-06	-	1.47E-07	6.44E-07	6.44E-07	-	4.66E-07	2.04E-06	2.04E-06	-	7.13E-07	3.12E-06	3.12E-06	-	1.24E-07	5.41E-07	5.41E-07	-
Formaldehyde	50-00-0	5.51E-05	2.42E-04	2.42E-04	-	9.19E-06	4.03E-05	4.03E-05	-	2.91E-05	1.28E-04	1.28E-04	-	4.46E-05	1.95E-04	1.95E-04	-	7.72E-06	3.38E-05	3.38E-05	-
Hexane	110-54-3	1.32E-03	5.80E-03	5.80E-03	-	2.21E-04	9.66E-04	9.66E-04	-	6.99E-04	3.06E-03	3.06E-03	-	1.07E-03	4.68E-03	4.68E-03	-	1.85E-04	8.12E-04	8.12E-04	-
Naphthalene	91-20-3	4.49E-07	1.96E-06	1.96E-06	-	7.48E-08	3.27E-07	3.27E-07	-	2.37E-07	1.04E-06	1.04E-06	-	3.62E-07	1.59E-06	1.59E-06	-	6.28E-08	2.75E-07	2.75E-07	-
Toluene	108-88-3	2.50E-06	1.10E-05	1.10E-05	-	4.17E-07	1.83E-06	1.83E-06	-	1.32E-06	5.78E-06	5.78E-06	-	2.02E-06	8.85E-06	8.85E-06	-	3.50E-07	1.53E-06	1.53E-06	-
POI	-	6.35E-08	2.78E-07	2.78E-07	-	1.06E-08	4.64E-08	4.64E-08	-	3.35E-08	1.47E-07	1.47E-07	-	5.13E-08	2.25E-07	2.25E-07	-	8.89E-09	3.90E-08	3.90E-08	-
Beryllium	7440-41-7	8.82E-09	3.86E-08	3.86E-08	-	1.47E-09	6.44E-09	6.44E-09	-	4.66E-09	2.04E-08	2.04E-08	-	7.13E-09	3.12E-08	3.12E-08	-	1.24E-09	5.41E-09	5.41E-09	-
Cadmium	7440-43-9	8.09E-07	3.54E-06	3.54E-06	-	1.35E-07	5.90E-07	5.90E-07	-	4.27E-07	1.87E-06	1.87E-06	-	6.54E-07	2.86E-06	2.86E-06	-	1.13E-07	4.96E-07	4.96E-07	-
Chromium	7440-47-3	1.03E-06	4.51E-06	4.51E-06	-	1.72E-07	7.51E-07	7.51E-07	-	5.44E-07	2.38E-06	2.38E-06	-	8.32E-07	3.64E-06	3.64E-06	-	1.44E-07	6.31E-07	6.31E-07	-
Cobalt	-	6.18E-08	2.71E-07	2.71E-07	-	1.03E-08	4.51E-08	4.51E-08	-	3.26E-08	1.43E-07	1.43E-07	-	4.99E-08	2.19E-07	2.19E-07	-	8.65E-09	3.79E-08	3.79E-08	-
Manganese	7439-96-5	2.79E-07	1.22E-06	1.22E-06	-	4.66E-08	2.04E-07	2.04E-07	-	1.48E-07	6.46E-07	6.46E-07	-	2.26E-07	9.89E-07	9.89E-07	-	3.91E-08	1.71E-07	1.71E-07	-
Mercury	7439-97-6	1.91E-07	8.37E-07	8.37E-07	-	3.19E-08	1.40E-07	1.40E-07	-	1.01E-07	4.42E-07	4.42E-07	-	1.54E-07	6.77E-07	6.77E-07	-	2.68E-08	1.17E-07	1.17E-07	-
Nickel	7440-02-0	1.54E-06	6.76E-06	6.76E-06	-	2.57E-07	1.13E-06	1.13E-06	-	8.15E-07	3.57E-06	3.57E-06	-	1.25E-06	5.46E-06	5.46E-06	-	2.16E-07	9.47E-07	9.47E-07	-
Selenium	7782-49-2	1.76E-08	7.73E-08	7.73E-08	-	2.94E-09	1.29E-08	1.29E-08	-	9.32E-09	4.08E-08	4.08E-08	-	1.43E-08	6.25E-08	6.25E-08	-	2.47E-09	1.08E-08	1.08E-08	-
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-																				

Facility Name: Hormel Foods
 Core/Quality Pork
 Facility ID: 09900002
 Agency Interest No.: 3926
 Emissions Summary

Tempo ID No.:	IA - Refined Products RTU 2	Tempo ID No.:	IA - Refined Products ERV 1	Tempo ID No.:	IA - Refined Products ERV 2
Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:	

Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
PM	-	1.79E-03	7.83E-03	7.83E-03		7.45E-04	3.26E-03	3.26E-03		7.45E-04	3.26E-03	3.26E-03	
PM ₁₀	-	1.79E-03	7.83E-03	7.83E-03		7.45E-04	3.26E-03	3.26E-03		7.45E-04	3.26E-03	3.26E-03	
PM _{2.5}	-	1.79E-03	7.83E-03	7.83E-03		7.45E-04	3.26E-03	3.26E-03		7.45E-04	3.26E-03	3.26E-03	
SO ₂	-	1.41E-04	6.18E-04	6.18E-04		5.88E-05	2.58E-04	2.58E-04		5.88E-05	2.58E-04	2.58E-04	
NO _x	-	2.35E-02	1.03E-01	1.03E-01		9.80E-03	4.29E-02	4.29E-02		9.80E-03	4.29E-02	4.29E-02	
VOC	-	1.29E-03	5.67E-03	5.67E-03		5.39E-04	2.36E-03	2.36E-03		5.39E-04	2.36E-03	2.36E-03	
CO	-	1.98E-02	8.66E-02	8.66E-02		8.24E-03	3.61E-02	3.61E-02		8.24E-03	3.61E-02	3.61E-02	
Pb	-	1.18E-07	5.15E-07	5.15E-07		4.90E-08	2.15E-07	2.15E-07		4.90E-08	2.15E-07	2.15E-07	
CO ₂	-	28.1	123	123		11.7	51.2	51.2		11.7	51.2	51.2	
CH ₄	-	5.29E-04	2.32E-03	2.32E-03		2.20E-04	9.66E-04	9.66E-04		2.20E-04	9.66E-04	9.66E-04	
N ₂ O	-	5.29E-05	2.32E-04	2.32E-04		2.20E-05	9.66E-05	9.66E-05		2.20E-05	9.66E-05	9.66E-05	
CO ₂ e	-	28.1	123	123		11.7	51.2	51.2		11.7	51.2	51.2	
Total HAPs	-	4.44E-04	1.95E-03	1.95E-03	-	1.85E-04	8.11E-04	8.11E-04	-	1.85E-04	8.11E-04	8.11E-04	-
Acetaldehyde	75-07-0												
Arsenic	7440-38-2	4.71E-08	2.06E-07	2.06E-07		1.96E-08	8.59E-08	8.59E-08					
Benzene	71-43-2	4.94E-07	2.16E-06	2.16E-06	-	2.06E-07	9.02E-07	9.02E-07	-	2.06E-07	9.02E-07	9.02E-07	-
Dichlorobenzene	25321-22-6	2.82E-07	1.24E-06	1.24E-06	-	1.18E-07	5.15E-07	5.15E-07	-	1.18E-07	5.15E-07	5.15E-07	-
Formaldehyde	50-00-0	1.76E-05	7.73E-05	7.73E-05	-	7.35E-06	3.22E-05	3.22E-05	-	7.35E-06	3.22E-05	3.22E-05	-
Hexane	110-54-3	4.24E-04	1.86E-03	1.86E-03	-	1.76E-04	7.73E-04	7.73E-04	-	1.76E-04	7.73E-04	7.73E-04	-
Naphthalene	91-20-3	1.44E-07	6.29E-07	6.29E-07	-	5.98E-08	2.62E-07	2.62E-07	-	5.98E-08	2.62E-07	2.62E-07	-
Toluene	108-88-3	8.00E-07	3.50E-06	3.50E-06	-	3.33E-07	1.46E-06	1.46E-06	-	3.33E-07	1.46E-06	1.46E-06	-
POH	-	2.03E-08	8.90E-08	8.90E-08	-	8.47E-09	3.71E-08	3.71E-08	-	8.47E-09	3.71E-08	3.71E-08	-
Beryllium	7440-41-7	2.82E-09	1.24E-08	1.24E-08	-	1.18E-09	5.15E-09	5.15E-09	-	1.18E-09	5.15E-09	5.15E-09	-
Cadmium	7440-43-9	2.59E-07	1.13E-06	1.13E-06	-	1.08E-07	4.72E-07	4.72E-07	-	1.08E-07	4.72E-07	4.72E-07	-
Chromium	7440-47-3	3.29E-07	1.44E-06	1.44E-06	-	1.37E-07	6.01E-07	6.01E-07	-	1.37E-07	6.01E-07	6.01E-07	-
Cobalt	-	1.98E-08	8.66E-08	8.66E-08	-	8.24E-09	3.61E-08	3.61E-08	-				
Manganese	7439-96-5	8.94E-08	3.92E-07	3.92E-07	-	3.73E-08	1.63E-07	1.63E-07	-	3.73E-08	1.63E-07	1.63E-07	-
Mercury	7439-97-6	6.12E-08	2.68E-07	2.68E-07	-	2.55E-08	1.12E-07	1.12E-07	-	2.55E-08	1.12E-07	1.12E-07	-
Nickel	7440-02-0	4.94E-07	2.16E-06	2.16E-06	-	2.06E-07	9.02E-07	9.02E-07	-	2.06E-07	9.02E-07	9.02E-07	-
Selenium	7782-49-2	5.65E-09	2.47E-08	2.47E-08	-	2.35E-09	1.03E-08	1.03E-08	-	2.35E-09	1.03E-08	1.03E-08	-
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-												

Facility Name: Hormel Foods
Core/Qualitv Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

		Tempo ID No.: IA - Desiccant Units			Tempo ID No.: IA - Lime Storage Silo			Tempo ID No.: IA - Laundry Unit			Tempo ID No.: IA - MP - 130			Tempo ID No.: IA - Trim Blender Desiccant			Tempo ID No.: IA - QPP Office MAU 1		
		Tempo SV ID No.:			Delta SV ID No.:			Tempo SV ID No.:			Tempo SV ID No.:			Tempo SV ID No.:			Tempo SV ID No.:		
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy
PM	-	5.81E-02	2.55E-01	2.55E-01	5.87E-02	2.57E-01	2.57E-01	2.24E-03	9.79E-03	9.79E-03	6.41E-03	2.81E-02	2.81E-02	2.68E-03	1.17E-02	1.17E-02	1.94E-03	8.49E-03	8.49E-03
PM ₁₀	-	5.81E-02	2.55E-01	2.55E-01	5.87E-02	2.57E-01	2.57E-01	2.24E-03	9.79E-03	9.79E-03	6.41E-03	2.81E-02	2.81E-02	2.68E-03	1.17E-02	1.17E-02	1.94E-03	8.49E-03	8.49E-03
PM _{2.5}	-	5.81E-02	2.55E-01	2.55E-01	5.87E-02	2.57E-01	2.57E-01	2.24E-03	9.79E-03	9.79E-03	6.41E-03	2.81E-02	2.81E-02	2.68E-03	1.17E-02	1.17E-02	1.94E-03	8.49E-03	8.49E-03
SO ₂	-	4.59E-03	2.01E-02	2.01E-02	0.00E+00	0.00E+00	0.00E+00	1.76E-04	7.73E-04	7.73E-04	5.06E-04	2.22E-03	2.22E-03	2.12E-04	9.28E-04	9.28E-04	1.53E-04	6.70E-04	6.70E-04
NO _x	-	7.65E-01	3.35E+00	3.35E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-02	1.29E-01	1.29E-01	8.43E-02	3.69E-01	3.69E-01	3.53E-02	1.55E-01	1.55E-01	2.55E-02	1.12E-01	1.12E-01
VOC	-	4.21E-02	1.84E-01	1.84E-01	0.00E+00	0.00E+00	0.00E+00	1.62E-03	7.09E-03	7.09E-03	4.64E-03	2.03E-02	2.03E-02	1.94E-03	8.50E-03	8.50E-03	1.40E-03	6.14E-03	6.14E-03
CO	-	6.42E-01	2.81	2.81	0.00E+00	0.00E+00	0.00E+00	2.47E-02	1.08E-01	1.08E-01	7.08E-02	3.10E-01	3.10E-01	2.96E-02	1.30E-01	1.30E-01	2.14E-02	9.38E-02	9.38E-02
Pb	-	3.82E-06	1.67E-05	1.67E-05	0.00E+00	0.00E+00	0.00E+00	1.47E-07	6.44E-07	6.44E-07	4.22E-07	1.85E-06	1.85E-06	1.76E-07	7.73E-07	7.73E-07	1.27E-07	5.58E-07	5.58E-07
CO ₂	-	912	3993	3993	0.00	0.00	0.00	35.1	154	154	101	440	440	42.1	184	184	30.4	133	133
CH ₄	-	1.72E-02	7.53E-02	7.53E-02	0.00	0.00	0.00	6.61E-04	2.90E-03	2.90E-03	1.90E-03	8.30E-03	8.30E-03	7.94E-04	3.48E-03	3.48E-03	5.73E-04	2.51E-03	2.51E-03
N ₂ O	-	1.72E-03	7.53E-03	7.53E-03	0.00	0.00	0.00	6.61E-05	2.90E-04	2.90E-04	1.90E-04	8.30E-04	8.30E-04	7.94E-05	3.48E-04	3.48E-04	5.73E-05	2.51E-04	2.51E-04
CO ₂ e	-	913	3997	3997	0.00	0.00	0.00	35.1	154	154	101	441	441	42.1	184	184	30.4	133	133
Total HAPs	-	1.44E-02	6.32E-02	6.32E-02	-	-	-	5.55E-04	2.43E-03	2.43E-03	-	1.59E-03	6.98E-03	6.97E-03	-	6.66E-04	2.92E-03	2.92E-03	-
Acetaldehyde	75-07-0																		
Arsenic	7440-38-2	1.53E-06	6.70E-06	6.70E-06							1.69E-07	7.39E-07	7.39E-07	7.06E-08	3.09E-07	3.09E-07	5.10E-08	2.23E-07	2.23E-07
Benzene	71-43-2	1.61E-05	7.03E-05	7.03E-05				6.18E-07	2.71E-06	2.71E-06	1.77E-06	7.76E-06	7.76E-06	7.41E-07	3.25E-06	3.25E-06	5.35E-07	2.34E-06	2.34E-06
Dichlorobenzene	25321-22-6	9.18E-06	4.02E-05	4.02E-05	-	-	-	3.53E-07	1.55E-06	1.55E-06	1.01E-06	4.43E-06	4.43E-06	4.24E-07	1.86E-06	1.86E-06	3.06E-07	1.34E-06	1.34E-06
Formaldehyde	50-00-0	5.74E-04	2.51E-03	2.51E-03	-	-	-	2.21E-05	9.66E-05	9.66E-05	6.32E-05	2.77E-04	2.77E-04	2.65E-05	1.16E-04	1.16E-04	1.91E-05	8.37E-05	8.37E-05
Hexane	110-54-3	1.38E-02	6.03E-02	6.03E-02	-	-	-	5.29E-04	2.32E-03	2.32E-03	1.52E-03	6.65E-03	6.65E-03	6.35E-04	2.78E-03	2.78E-03	4.59E-04	2.01E-03	2.01E-03
Naphthalene	91-20-3	4.66E-06	2.04E-05	2.04E-05	-	-	-	1.79E-07	7.86E-07	7.86E-07	5.14E-07	2.25E-06	2.25E-06	2.15E-07	9.43E-07	9.43E-07	1.55E-07	6.81E-07	6.81E-07
Toluene	108-88-3	2.60E-05	1.14E-04	1.14E-04	-	-	-	1.00E-06	4.38E-06	4.38E-06	2.87E-06	1.26E-05	1.26E-05	1.20E-06	5.26E-06	5.26E-06	8.67E-07	3.80E-06	3.80E-06
POM		6.61E-07	2.89E-06	2.89E-06	-	-	-	2.54E-08	1.11E-07	1.11E-07	7.28E-08	3.19E-07	3.19E-07	3.05E-08	1.34E-07	1.34E-07	2.20E-08	9.65E-08	9.65E-08
Beryllium	7440-41-7	9.18E-08	4.02E-07	4.02E-07	-	-	-	3.53E-09	1.55E-08	1.55E-08	1.01E-08	4.43E-08	4.43E-08	4.24E-09	1.86E-08	1.86E-08	3.06E-09	1.34E-08	1.34E-08
Cadmium	7440-43-9	8.41E-06	3.68E-05	3.68E-05	-	-	-	3.24E-07	1.42E-06	1.42E-06	9.27E-07	4.06E-06	4.06E-06	3.88E-07	1.70E-06	1.70E-06	2.80E-07	1.23E-06	1.23E-06
Chromium	7440-47-3	1.07E-05	4.69E-05	4.69E-05	-	-	-	4.12E-07	1.80E-06	1.80E-06	1.18E-06	5.17E-06	5.17E-06	4.94E-07	2.16E-06	2.16E-06	3.57E-07	1.56E-06	1.56E-06
Cobalt		6.42E-07	2.81E-06	2.81E-06				2.47E-08	1.08E-07	1.08E-07	1.18E-06	5.17E-06	3.10E-07	2.96E-08	1.30E-07	1.30E-07	2.14E-08	9.38E-08	9.38E-08
Manganese	7439-96-5	2.91E-06	1.27E-05	1.27E-05	-	-	-	1.12E-07	4.90E-07	4.90E-07	3.20E-07	1.40E-06	1.40E-06	1.34E-07	5.87E-07	5.87E-07	9.69E-08	4.24E-07	4.24E-07
Mercury	7439-97-6	1.99E-06	8.71E-06	8.71E-06	-	-	-	7.65E-08	3.35E-07	3.35E-07	2.19E-07	9.60E-07	9.60E-07	9.18E-08	4.02E-07	4.02E-07	6.63E-08	2.90E-07	2.90E-07
Nickel	7440-02-0	1.61E-05	7.03E-05	7.03E-05	-	-	-	6.18E-07	2.71E-06	2.71E-06	1.77E-06	7.76E-06	7.76E-06	7.41E-07	3.25E-06	3.25E-06	5.35E-07	2.34E-06	2.34E-06
Selenium	7782-49-2	1.84E-07	8.04E-07	8.04E-07	-	-	-	7.06E-09	3.09E-08	3.09E-08	2.02E-08	8.86E-08	8.86E-08	8.47E-09	3.71E-08	3.71E-08	6.12E-09	2.68E-08	2.68E-08
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

		Tempo ID No.:	IA - QPP Office RTU 1			Tempo ID No.:	IA - QPP Office RTU 2			Tempo ID No.:	IA - QPP Office RTU 3			Tempo ID No.:	IA - QPP Office RTU 4			Tempo ID No.:	IA - QPP Office Water Heater			Tempo ID No.:	IA - DS 111 Hal		
		Tempo SV ID No:				Tempo SV ID No:				Tempo SV ID No:				Tempo SV ID No:				Tempo SV ID No:				Tempo SV ID No:			
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy			
PM	-	2.91E-03	1.27E-02	1.27E-02	2.01E-03	8.81E-03	8.81E-03	4.25E-03	1.86E-02	1.86E-02	4.31E-03	1.89E-02	1.89E-02	1.12E-02	4.90E-02	4.90E-02	2.98E-03	1.31E-02							
PM ₁₀	-	2.91E-03	1.27E-02	1.27E-02	2.01E-03	8.81E-03	8.81E-03	4.25E-03	1.86E-02	1.86E-02	4.31E-03	1.89E-02	1.89E-02	1.12E-02	4.90E-02	4.90E-02	2.98E-03	1.31E-02							
PM _{2.5}	-	2.91E-03	1.27E-02	1.27E-02	2.01E-03	8.81E-03	8.81E-03	4.25E-03	1.86E-02	1.86E-02	4.31E-03	1.89E-02	1.89E-02	1.12E-02	4.90E-02	4.90E-02	2.98E-03	1.31E-02							
SO ₂	-	2.29E-04	1.00E-03	1.00E-03	1.59E-04	6.96E-04	6.96E-04	3.35E-04	1.47E-03	1.47E-03	3.40E-04	1.49E-03	1.49E-03	8.82E-04	3.86E-03	3.86E-03	2.35E-04	1.03E-03							
NO _x	-	3.82E-02	1.67E-01	1.67E-01	2.65E-02	1.16E-01	1.16E-01	5.59E-02	2.45E-01	2.45E-01	5.67E-02	2.48E-01	2.48E-01	1.47E-01	6.44E-01	6.44E-01	3.92E-02	1.72E-01							
VOC	-	2.10E-03	9.21E-03	9.21E-03	1.46E-03	6.38E-03	6.38E-03	3.07E-03	1.35E-02	1.35E-02	3.12E-03	1.37E-02	1.37E-02	8.09E-03	3.54E-02	3.54E-02	2.16E-03	9.45E-03							
CO	-	3.21E-02	1.41E-01	1.41E-01	2.22E-02	9.74E-02	9.74E-02	4.69E-02	2.06E-01	2.06E-01	4.76E-02	2.08E-01	2.08E-01	1.24E-01	5.41E-01	5.41E-01	3.29E-02	1.44E-01							
Pb	-	1.91E-07	8.37E-07	8.37E-07	1.32E-07	5.80E-07	5.80E-07	2.79E-07	1.22E-06	1.22E-06	2.83E-07	1.24E-06	1.24E-06	7.35E-07	3.22E-06	3.22E-06	1.96E-07	8.59E-07							
CO ₂	-	45.6	200	200	31.6	138	138	66.6	292	292	67.6	296	296	175	768	768	46.8	205							
CH ₄	-	8.60E-04	3.77E-03	3.77E-03	5.95E-04	2.61E-03	2.61E-03	1.26E-03	5.50E-03	5.50E-03	1.27E-03	5.58E-03	5.58E-03	3.31E-03	1.45E-02	1.45E-02	8.82E-04	3.86E-03							
N ₂ O	-	8.60E-05	3.77E-04	3.77E-04	5.95E-05	2.61E-04	2.61E-04	1.26E-04	5.50E-04	5.50E-04	1.27E-04	5.58E-04	5.58E-04	3.31E-04	1.45E-03	1.45E-03	8.82E-05	3.86E-04							
CO ₂ e	-	45.6	200	200	31.6	138	138	66.7	292	292	67.6	296	296	175.51	768.75	768.75	46.8	205							
Total HAPs	-	7.22E-04	3.16E-03	3.16E-03	5.00E-04	2.19E-03	2.19E-03	1.05E-03	4.62E-03	4.62E-03	1.07E-03	4.69E-03	4.69E-03	2.78E-03	1.22E-02	1.22E-02	7.40E-04	3.24E-03							
Acetaldehyde	75-07-0																								
Arsenic	7440-38-2	7.65E-08	3.35E-07	3.35E-07	5.29E-08	2.32E-07	2.32E-07	1.12E-07	4.90E-07	4.90E-07	1.13E-07	4.96E-07	4.96E-07	2.94E-07	1.29E-06	1.29E-06	7.84E-08	3.44E-07							
Benzene	71-43-2	8.03E-07	3.52E-06	3.52E-06	5.56E-07	2.43E-06	2.43E-06	1.17E-06	5.14E-06	5.14E-06	1.19E-06	5.21E-06	5.21E-06	3.09E-06	1.35E-05	1.35E-05	8.24E-07	3.61E-06							
Dichlorobenzene	25321-22-6	4.59E-07	2.01E-06	2.01E-06	3.18E-07	1.39E-06	1.39E-06	6.71E-07	2.94E-06	2.94E-06	6.80E-07	2.98E-06	2.98E-06	1.76E-06	7.73E-06	7.73E-06	4.71E-07	2.06E-06							
Formaldehyde	50-00-0	2.87E-05	1.26E-04	1.26E-04	1.99E-05	8.70E-05	8.70E-05	4.19E-05	1.84E-04	1.84E-04	4.25E-05	1.86E-04	1.86E-04	1.10E-04	4.83E-04	4.83E-04	2.94E-05	1.29E-04							
Hexane	110-54-3	6.88E-04	3.01E-03	3.01E-03	4.76E-04	2.09E-03	2.09E-03	1.01E-03	4.41E-03	4.41E-03	1.02E-03	4.47E-03	4.47E-03	2.65E-03	1.16E-02	1.16E-02	7.06E-04	3.09E-03							
Naphthalene	91-20-3	2.33E-07	1.02E-06	1.02E-06	1.61E-07	7.07E-07	7.07E-07	3.41E-07	1.49E-06	1.49E-06	3.46E-07	1.51E-06	1.51E-06	8.97E-07	3.93E-06	3.93E-06	2.39E-07	1.05E-06							
Toluene	108-88-3	1.30E-06	5.69E-06	5.69E-06	9.00E-07	3.94E-06	3.94E-06	1.90E-06	8.32E-06	8.32E-06	1.93E-06	8.44E-06	8.44E-06	5.00E-06	2.19E-05	2.19E-05	1.33E-06	5.84E-06							
POM	-	3.30E-08	1.45E-07	1.45E-07	2.29E-08	1.00E-07	1.00E-07	4.83E-08	2.11E-07	2.11E-07	4.90E-08	2.14E-07	2.14E-07	1.27E-07	5.57E-07	5.57E-07	3.39E-08	1.48E-07							
Beryllium	7440-41-7	4.59E-09	2.01E-08	2.01E-08	3.18E-09	1.39E-08	1.39E-08	6.71E-09	2.94E-08	2.94E-08	6.80E-09	2.98E-08	2.98E-08	1.76E-08	7.73E-08	7.73E-08	4.71E-09	2.06E-08							
Cadmium	7440-43-9	4.21E-07	1.84E-06	1.84E-06	2.91E-07	1.28E-06	1.28E-06	6.15E-07	2.69E-06	2.69E-06	6.23E-07	2.73E-06	2.73E-06	1.62E-06	7.09E-06	7.09E-06	4.31E-07	1.89E-06							
Chromium	7440-47-3	5.35E-07	2.34E-06	2.34E-06	3.71E-07	1.62E-06	1.62E-06	7.82E-07	3.43E-06	3.43E-06	7.93E-07	3.47E-06	3.47E-06	2.06E-06	5.41E-07	9.02E-06	5.49E-07	2.40E-06							
Cobalt	-	3.21E-08	1.41E-07	1.41E-07	2.22E-08	9.74E-08	9.74E-08	4.69E-08	2.06E-07	2.06E-07	4.76E-08	2.08E-07	2.08E-07	1.24E-07	9.02E-06	5.41E-07	3.29E-08	1.44E-07							
Manganese	7439-96-5	1.45E-07	6.36E-07	6.36E-07	1.01E-07	4.41E-07	4.41E-07	2.12E-07	9.30E-07	9.30E-07	2.15E-07	9.43E-07	9.43E-07	5.59E-07	2.45E-06	2.45E-06	1.49E-07	6.53E-07							
Mercury	7439-97-6	9.94E-08	4.35E-07	4.35E-07	6.88E-08	3.01E-07	3.01E-07	1.45E-07	6.36E-07	6.36E-07	1.47E-07	6.45E-07	6.45E-07	3.82E-07	1.67E-06	1.67E-06	1.02E-07	4.47E-07							
Nickel	7440-02-0	8.03E-07	3.52E-06	3.52E-06	5.56E-07	2.43E-06	2.43E-06	1.17E-06	5.14E-06	5.14E-06	1.19E-06	5.21E-06	5.21E-06	3.09E-06	1.35E-05	1.35E-05	8.24E-07	3.61E-06							
Selenium	7782-49-2	9.18E-09	4.02E-08	4.02E-08	6.35E-09	2.78E-08	2.78E-08	1.34E-08	5.87E-08	5.87E-08	1.36E-08	5.96E-08	5.96E-08	3.53E-08	1.55E-07	1.55E-07	9.41E-09	4.12E-08							
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Highest Facility Single HAP:	-																								

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

Desiccant	Tempo ID No.:	IA - KC Casting	Tempo ID No.:	IA - DS Dehumidification	Tempo ID No.:	IA - GP	Tempo ID No.:	IA - Dry Room #4 Units (2)	Tempo ID No.:	IA - QPP Animal RTU 1	Tempo ID No.:
	Tempo SV ID No:		Tempo SV ID No:		Tempo SV ID No:		Tempo SV ID No:		Tempo SV ID No:		Tempo SV ID No:

Pollutant	CAS # (if applicable)	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)
PM	-	1.31E-02	8.05E-03	3.52E-02	3.52E-02	5.36E-03	2.35E-02	2.35E-02	7.30E-03	3.20E-02	3.20E-02	2.68E-02	1.17E-01	1.17E-01	1.49E-03	6.53E-03	6.53E-03	2.68E-03			
PM ₁₀	-	1.31E-02	8.05E-03	3.52E-02	3.52E-02	5.36E-03	2.35E-02	2.35E-02	7.30E-03	3.20E-02	3.20E-02	2.68E-02	1.17E-01	1.17E-01	1.49E-03	6.53E-03	6.53E-03	2.68E-03			
PM _{2.5}	-	1.31E-02	8.05E-03	3.52E-02	3.52E-02	5.36E-03	2.35E-02	2.35E-02	7.30E-03	3.20E-02	3.20E-02	2.68E-02	1.17E-01	1.17E-01	1.49E-03	6.53E-03	6.53E-03	2.68E-03			
SO ₂	-	1.03E-03	6.35E-04	2.78E-03	2.78E-03	4.24E-04	1.86E-03	1.86E-03	5.76E-04	2.52E-03	2.52E-03	2.11E-03	9.25E-03	9.25E-03	1.18E-04	5.15E-04	5.15E-04	2.12E-04			
NO _x	-	1.72E-01	1.06E-01	4.64E-01	4.64E-01	7.06E-02	3.09E-01	3.09E-01	9.61E-02	4.21E-01	4.21E-01	3.52E-01	1.54E+00	1.54E+00	1.96E-02	8.59E-02	8.59E-02	3.53E-02			
VOC	-	9.45E-03	5.82E-03	2.55E-02	2.55E-02	3.88E-03	1.70E-02	1.70E-02	5.28E-03	2.31E-02	2.31E-02	1.94E-02	8.48E-02	8.48E-02	1.08E-03	4.72E-03	4.72E-03	1.94E-03			
CO	-	1.44E-01	8.89E-02	3.90E-01	3.90E-01	5.93E-02	2.60E-01	2.60E-01	8.07E-02	3.53E-01	3.53E-01	2.96E-01	1.30E+00	1.30E+00	1.65E-02	7.21E-02	7.21E-02	2.96E-02			
Pb	-	8.59E-07	5.29E-07	2.32E-06	2.32E-06	3.53E-07	1.55E-06	1.55E-06	4.80E-07	2.10E-06	2.10E-06	1.76E-06	7.71E-06	7.71E-06	9.80E-08	4.29E-07	4.29E-07	1.76E-07			
CO ₂	-	205	126	553	553	84.2	369	369	115	502	502	420	1839	1839	23.4	102	102	42.1			
CH ₄	-	3.86E-03	2.38E-03	1.04E-02	1.04E-02	1.59E-03	6.95E-03	6.95E-03	2.16E-03	9.46E-03	9.46E-03	7.92E-03	3.47E-02	3.47E-02	4.41E-04	1.93E-03	1.93E-03	7.94E-04			
N ₂ O	-	3.86E-04	2.38E-04	1.04E-03	1.04E-03	1.59E-04	6.95E-04	6.95E-04	2.16E-04	9.46E-04	9.46E-04	7.92E-04	3.47E-03	3.47E-03	4.41E-05	1.93E-04	1.93E-04	7.94E-05			
CO ₂ e	-	205	126	553	553	84.2	369	369	115	502	502	420	1841	1841	23.4	102	102	42.1			
Total HAPs	-	3.24E-03	2.00E-03	8.76E-03	8.76E-03	1.33E-03	5.84E-03	5.84E-03	1.81E-03	7.94E-03	7.94E-03	6.65E-03	2.91E-02	2.91E-02	3.70E-04	1.62E-03	1.62E-03	6.66E-04			
Acetaldehyde	75-07-0																				
Arsenic	7440-38-2	3.44E-07	2.12E-07	9.28E-07	9.28E-07	1.41E-07	6.18E-07	6.18E-07	8.30E-08	8.42E-07	8.42E-07	7.04E-07	3.08E-06	3.08E-06	3.92E-08	1.72E-07	1.72E-07	7.06E-08			
Benzene	71-43-2	3.61E-06	2.22E-06	9.74E-06	9.74E-06	1.48E-06	6.49E-06	6.49E-06	2.02E-06	8.84E-06	8.84E-06	7.40E-06	3.24E-05	3.24E-05	4.12E-07	1.80E-06	1.80E-06	7.41E-07			
Dichlorobenzene	25321-22-6	2.06E-06	1.27E-06	5.57E-06	5.57E-06	8.47E-07	3.71E-06	3.71E-06	1.15E-06	5.05E-06	5.05E-06	4.23E-06	1.85E-05	1.85E-05	2.35E-07	1.03E-06	1.03E-06	4.24E-07			
Formaldehyde	50-00-0	1.29E-04	7.94E-05	3.48E-04	3.48E-04	5.29E-05	2.32E-04	2.32E-04	7.21E-05	3.16E-04	3.16E-04	2.64E-04	1.16E-03	1.16E-03	1.47E-05	6.44E-05	6.44E-05	2.65E-05			
Hexane	110-54-3	3.09E-03	1.91E-03	8.35E-03	8.35E-03	1.27E-03	5.57E-03	5.57E-03	1.73E-03	7.57E-03	7.57E-03	6.34E-03	2.78E-02	2.78E-02	3.53E-04	1.55E-03	1.55E-03	6.35E-04			
Naphthalene	91-20-3	1.05E-06	6.46E-07	2.83E-06	2.83E-06	4.31E-07	1.89E-06	1.89E-06	5.86E-07	2.57E-06	2.57E-06	2.15E-06	9.41E-06	9.41E-06	1.20E-07	5.24E-07	5.24E-07	2.15E-07			
Toluene	108-88-3	5.84E-06	3.60E-06	1.58E-05	1.58E-05	2.40E-06	1.05E-05	1.05E-05	3.27E-06	1.43E-05	1.43E-05	1.20E-05	5.24E-05	5.24E-05	6.67E-07	2.92E-06	2.92E-06	1.20E-06			
POI	1.48E-07		9.15E-08	4.01E-07	4.01E-07	6.10E-08	2.67E-07	2.67E-07	8.30E-08	3.64E-07	3.64E-07	3.04E-07	1.33E-06	1.33E-06	1.69E-08	7.42E-08	7.42E-08	3.05E-08			
Beryllium	7440-41-7	2.06E-08	1.27E-08	5.57E-08	5.57E-08	8.47E-09	3.71E-08	3.71E-08	1.15E-08	5.05E-08	5.05E-08	4.23E-08	1.85E-07	1.85E-07	2.35E-09	1.03E-08	1.03E-08	4.24E-09			
Cadmium	7440-43-9	1.89E-06	1.16E-06	5.10E-06	5.10E-06	7.76E-07	3.40E-06	3.40E-06	1.06E-06	4.63E-06	4.63E-06	3.87E-06	1.70E-05	1.70E-05	2.16E-07	9.45E-07	9.45E-07	3.88E-07			
Chromium	7440-47-3	2.40E-06	8.89E-08	6.49E-06	6.49E-06	9.88E-07	4.33E-06	4.33E-06	1.35E-06	5.89E-06	5.89E-06	4.93E-06	2.16E-05	2.16E-05	2.75E-07	1.20E-06	1.20E-06	4.94E-07			
Cobalt		1.44E-07	1.48E-06	3.90E-07	3.90E-07	5.93E-08	2.60E-07	2.60E-07	8.07E-08	3.53E-07	3.53E-07	2.96E-07	1.30E-06	1.30E-06	1.65E-08	7.21E-08	7.21E-08	2.96E-08			
Manganese	7439-96-5	6.53E-07	4.02E-07	1.76E-06	1.76E-06	2.68E-07	1.17E-06	1.17E-06	3.65E-07	1.60E-06	1.60E-06	1.34E-06	5.86E-06	5.86E-06	7.45E-08	3.26E-07	3.26E-07	1.34E-07			
Mercury	7439-97-6	4.47E-07	2.75E-07	1.21E-06	1.21E-06	1.84E-07	8.04E-07	8.04E-07	2.50E-07	1.09E-06	1.09E-06	9.16E-07	4.01E-06	4.01E-06	5.10E-08	2.23E-07	2.23E-07	9.18E-08			
Nickel	7440-02-0	3.61E-06	2.22E-06	9.74E-06	9.74E-06	1.48E-06	6.49E-06	6.49E-06	2.02E-06	8.84E-06	8.84E-06	7.40E-06	3.24E-05	3.24E-05	4.12E-07	1.80E-06	1.80E-06	7.41E-07			
Selenium	7782-49-2	4.12E-08	2.54E-08	1.11E-07	1.11E-07	1.69E-08	7.42E-08	7.42E-08	2.31E-08	1.01E-07	1.01E-07	8.45E-08	3.70E-07	3.70E-07	4.71E-09	2.06E-08	2.06E-08	8.47E-09			
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Highest Facility Single HAP:	-																				

Facility Name: Hormel Foods
Core/Quality Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

IA - QPP Animal RTU 2	Tempo ID No.:	IA - DS 102 RTE	Tempo ID No.:	IA - KC 124	Tempo ID No.:	IA - Machinery Rm MAU 1	Tempo ID No.:	IA - Machinery Rm MAU 7	Tempo ID No.:	IA - Machinery Rm MAU 8
	Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:		Tempo SV ID No.:	

	CAS # (if applicable)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	
Pollutant																																
PM	-	1.17E-02	1.17E-02		6.21E-03	2.72E-02	2.72E-02		2.98E-03	1.31E-02	1.31E-02		3.73E-03	1.63E-02	1.63E-02		3.46E-03	1.51E-02	1.51E-02		7.93E-03	3.47E-02	3.47E-02									
PM ₁₀	-	1.17E-02	1.17E-02		6.21E-03	2.72E-02	2.72E-02		2.98E-03	1.31E-02	1.31E-02		3.73E-03	1.63E-02	1.63E-02		3.46E-03	1.51E-02	1.51E-02		7.93E-03	3.47E-02	3.47E-02									
PM _{2.5}	-	1.17E-02	1.17E-02		6.21E-03	2.72E-02	2.72E-02		2.98E-03	1.31E-02	1.31E-02		3.73E-03	1.63E-02	1.63E-02		3.46E-03	1.51E-02	1.51E-02		7.93E-03	3.47E-02	3.47E-02									
SO ₂	-	9.28E-04	9.28E-04		4.91E-04	2.15E-03	2.15E-03		2.35E-04	1.03E-03	1.03E-03		2.94E-04	1.29E-03	1.29E-03		2.73E-04	1.20E-03	1.20E-03		6.26E-04	2.74E-03	2.74E-03									
NO _x	-	1.55E-01	1.55E-01		8.18E-02	3.58E-01	3.58E-01		3.92E-02	1.72E-01	1.72E-01		4.90E-02	2.15E-01	2.15E-01		4.55E-02	1.99E-01	1.99E-01		1.04E-01	4.57E-01	4.57E-01									
VOC	-	8.50E-03	8.50E-03		4.50E-03	1.97E-02	1.97E-02		2.16E-03	9.45E-03	9.45E-03		2.70E-03	1.18E-02	1.18E-02		2.50E-03	1.10E-02	1.10E-02		5.74E-03	2.51E-02	2.51E-02									
CO	-	1.30E-01	1.30E-01		6.87E-02	3.01E-01	3.01E-01		3.29E-02	1.44E-01	1.44E-01		4.12E-02	1.80E-01	1.80E-01		3.82E-02	1.67E-01	1.67E-01		8.76E-02	3.84E-01	3.84E-01									
Pb	-	7.73E-07	7.73E-07		4.09E-07	1.79E-06	1.79E-06		1.96E-07	8.59E-07	8.59E-07		2.45E-07	1.07E-06	1.07E-06		2.27E-07	9.96E-07	9.96E-07		5.22E-07	2.28E-06	2.28E-06									
CO ₂	-	184	184		97.5	427	427		46.8	205	205		58.4	256	256		54.2	238	238		124	545	545									
CH ₄	-	3.48E-03	3.48E-03		1.84E-03	8.05E-03	8.05E-03		8.82E-04	3.86E-03	3.86E-03		1.10E-03	4.83E-03	4.83E-03		1.02E-03	4.48E-03	4.48E-03		2.35E-03	1.03E-02	1.03E-02									
N ₂ O	-	3.48E-04	3.48E-04		1.84E-04	8.05E-04	8.05E-04		8.82E-05	3.86E-04	3.86E-04		1.10E-04	4.83E-04	4.83E-04		1.02E-04	4.48E-04	4.48E-04		2.35E-04	1.03E-03	1.03E-03									
CO ₂ e	-	184	184		97.5	427	427		46.8	205	205		58.4	256	256		54.2	238	238		124	545	545									
Total HAPs	-	2.92E-03	2.92E-03	-	1.54E-03	6.76E-03	6.76E-03	-	7.40E-04	3.24E-03	3.24E-03	-	9.25E-04	4.05E-03	4.05E-03	-	8.59E-04	3.76E-03	3.76E-03	-	1.97E-03	8.63E-03	8.63E-03	-								
Acetaldehyde	75-07-0																															
Arsenic	7440-38-2	3.09E-07	3.09E-07		1.64E-07	7.16E-07	7.16E-07		7.84E-08	3.44E-07	3.44E-07		9.80E-08	4.29E-07	4.29E-07		9.10E-08	3.98E-07	3.98E-07		2.09E-07	9.14E-07	9.14E-07									
Benzene	71-43-2	3.25E-06	3.25E-06	-	1.72E-06	7.52E-06	7.52E-06	-	8.24E-07	3.61E-06	3.61E-06	-	1.03E-06	4.51E-06	4.51E-06	-	9.55E-07	4.18E-06	4.18E-06	-	2.19E-06	9.59E-06	9.59E-06	-								
Dichlorobenzene	25321-22-6	1.86E-06	1.86E-06	-	9.81E-07	4.30E-06	4.30E-06	-	4.71E-07	2.06E-06	2.06E-06	-	5.88E-07	2.58E-06	2.58E-06	-	5.46E-07	2.39E-06	2.39E-06	-	1.25E-06	5.48E-06	5.48E-06	-								
Formaldehyde	50-00-0	1.16E-04	1.16E-04	-	6.13E-05	2.69E-04	2.69E-04	-	2.94E-05	1.29E-04	1.29E-04	-	3.68E-05	1.61E-04	1.61E-04	-	3.41E-05	1.49E-04	1.49E-04	-	7.82E-05	3.43E-04	3.43E-04	-								
Hexane	110-54-3	2.78E-03	2.78E-03	-	1.47E-03	6.45E-03	6.45E-03	-	7.06E-04	3.09E-03	3.09E-03	-	8.82E-04	3.86E-03	3.86E-03	-	8.19E-04	3.59E-03	3.59E-03	-	1.88E-03	8.22E-03	8.22E-03	-								
Naphthalene	91-20-3	9.43E-07	9.43E-07	-	4.99E-07	2.18E-06	2.18E-06	-	2.39E-07	1.05E-06	1.05E-06	-	2.99E-07	1.31E-06	1.31E-06	-	2.77E-07	1.22E-06	1.22E-06	-	6.36E-07	2.79E-06	2.79E-06	-								
Toluene	108-88-3	5.26E-06	5.26E-06	-	2.78E-06	1.22E-05	1.22E-05	-	1.33E-06	5.84E-06	5.84E-06	-	1.67E-06	7.30E-06	7.30E-06	-	1.55E-06	6.77E-06	6.77E-06	-	3.55E-06	1.55E-05	1.55E-05	-								
POM	-	1.34E-07	1.34E-07	-	7.06E-08	3.09E-07	3.09E-07	-	3.39E-08	1.48E-07	1.48E-07	-	4.24E-08	1.86E-07	1.86E-07	-	3.93E-08	1.72E-07	1.72E-07	-	9.01E-08	3.95E-07	3.95E-07	-								
Beryllium	7440-41-7	1.86E-08	1.86E-08	-	9.81E-09	4.30E-08	4.30E-08	-	4.71E-09	2.06E-08	2.06E-08	-	5.88E-09	2.58E-08	2.58E-08	-	5.46E-09	2.39E-08	2.39E-08	-	1.25E-08	5.48E-08	5.48E-08	-								
Cadmium	7440-43-9	1.70E-06	1.70E-06	-	8.99E-07	3.94E-06	3.94E-06	-	4.31E-07	1.89E-06	1.89E-06	-	5.39E-07	2.36E-06	2.36E-06	-	5.00E-07	2.19E-06	2.19E-06	-	1.15E-06	5.03E-06	5.03E-06	-								
Chromium	7440-47-3	2.16E-06	2.16E-06	-	1.14E-06	5.01E-06	5.01E-06	-	5.49E-07	2.40E-06	2.40E-06	-	6.86E-07	3.01E-06	3.01E-06	-	6.37E-07	2.79E-06	2.79E-06	-	1.46E-06	6.40E-06	6.40E-06	-								
Cobalt	-	1.30E-07	1.30E-07	-	6.87E-08	3.01E-07	3.01E-07	-	3.29E-08	1.44E-07	1.44E-07	-	4.12E-08	1.80E-07	1.80E-07	-	3.82E-08	1.67E-07	1.67E-07	-	8.76E-08	3.84E-07	3.84E-07	-								
Manganese	7439-96-5	5.87E-07	5.87E-07	-	3.11E-07	1.36E-06	1.36E-06	-	1.49E-07	6.53E-07	6.53E-07	-	1.86E-07	8.16E-07	8.16E-07	-	1.73E-07	7.57E-07	7.57E-07	-	3.96E-07	1.74E-06	1.74E-06	-								
Mercury	7439-97-6	4.02E-07	4.02E-07	-	2.13E-07	9.31E-07	9.31E-07	-	1.02E-07	4.47E-07	4.47E-07	-	1.27E-07	5.58E-07	5.58E-07	-	1.18E-07	5.18E-07	5.18E-07	-	2.71E-07	1.19E-06	1.19E-06	-								
Nickel	7440-02-0	3.25E-06	3.25E-06	-	1.72E-06	7.52E-06	7.52E-06	-	8.24E-07	3.61E-06	3.61E-06	-	1.03E-06	4.51E-06	4.51E-06	-	9.55E-07	4.18E-06	4.18E-06	-	2.19E-06	9.59E-06	9.59E-06	-								
Selenium	7782-49-2	3.71E-08	3.71E-08	-	1.96E-08	8.60E-08	8.60E-08	-	9.41E-09	4.12E-08	4.12E-08	-	1.18E-08	5.15E-08	5.15E-08	-	1.09E-08	4.78E-08	4.78E-08	-	2.50E-08	1.10E-07	1.10E-07	-								
Phenol	108-95-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-xylene	1330-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Highest Facility Single HAP:	-																															

Facility Name: Hormel Foods
Core/Qualitv Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

		Tempo ID No.: IA - Machinery Rm MAU 9			Tempo ID No.: IA - Tankless HW #1 and 2			Tempo ID No.: IA - Dry Desiccant Unit (6)			Tempo ID No.: IA - QPP Medical Unit			Tempo ID No.: IA - QPP Break Room #1 and 2			Tempo ID No.: Cooling Towers IA		
		Tempo SV ID No:			Tempo SV ID No:			Tempo SV ID No:			Tempo SV ID No:			Tempo SV ID No:			Tempo SV ID No:		
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy
PM	-	6.49E-03	2.84E-02	2.84E-02	2.98E-03	1.31E-02	1.31E-02	5.81E-02	2.55E-01	2.55E-01	1.12E-03	4.90E-03	4.90E-03	3.58E-03	1.57E-02	1.57E-02	0.17	0.76	0.76
PM ₁₀	-	6.49E-03	2.84E-02	2.84E-02	2.98E-03	1.31E-02	1.31E-02	5.81E-02	2.55E-01	2.55E-01	1.12E-03	4.90E-03	4.90E-03	3.58E-03	1.57E-02	1.57E-02	0.16	0.72	0.72
PM _{2.5}	-	6.49E-03	2.84E-02	2.84E-02	2.98E-03	1.31E-02	1.31E-02	5.81E-02	2.55E-01	2.55E-01	1.12E-03	4.90E-03	4.90E-03	3.58E-03	1.57E-02	1.57E-02	6.93E-03	3.03E-02	3.03E-02
SO ₂	-	5.12E-04	2.24E-03	2.24E-03	2.35E-04	1.03E-03	1.03E-03	4.59E-03	2.01E-02	2.01E-02	8.82E-05	3.86E-04	3.86E-04	2.82E-04	1.24E-03	1.24E-03			
NO _x	-	8.54E-02	3.74E-01	3.74E-01	3.92E-02	1.72E-01	1.72E-01	7.65E-01	3.35E+00	3.35E+00	1.47E-02	6.44E-02	6.44E-02	4.71E-02	2.06E-01	2.06E-01			
VOC	-	4.70E-03	2.06E-02	2.06E-02	2.16E-03	9.45E-03	9.45E-03	4.21E-02	1.84E-01	1.84E-01	8.09E-04	3.54E-03	3.54E-03	2.59E-03	1.13E-02	1.13E-02			
CO	-	7.17E-02	3.14E-01	3.14E-01	3.29E-02	1.44E-01	1.44E-01	6.42E-01	2.81E+00	2.81E+00	1.24E-02	5.41E-02	5.41E-02	3.95E-02	1.73E-01	1.73E-01			
Pb	-	4.27E-07	1.87E-06	1.87E-06	1.96E-07	8.59E-07	8.59E-07	3.82E-06	1.67E-05	1.67E-05	7.35E-08	3.22E-07	3.22E-07	2.35E-07	1.03E-06	1.03E-06			
CO ₂	-	102	446	446	46.8	205	205	912	3993	3993	17.5	76.8	76.8	56.1	246	246			
CH ₄	-	1.92E-03	8.41E-03	8.41E-03	8.82E-04	3.86E-03	3.86E-03	1.72E-02	7.53E-02	7.53E-02	3.31E-04	1.45E-03	1.45E-03	1.06E-03	4.63E-03	4.63E-03			
N ₂ O	-	1.92E-04	8.41E-04	8.41E-04	8.82E-05	3.86E-04	3.86E-04	1.72E-03	7.53E-03	7.53E-03	3.31E-05	1.45E-04	1.45E-04	1.06E-04	4.63E-04	4.63E-04			
CO ₂ e	-	102	446	446	46.8	205	205	912	3997	3997	17.6	76.9	76.9	56.1	246	246			
Total HAPs	-	1.61E-03	7.06E-03	7.06E-03	7.40E-04	3.24E-03	3.24E-03	1.44E-02	6.32E-02	6.32E-02	2.78E-04	1.22E-03	1.22E-03	8.88E-04	3.89E-03	3.89E-03	-	-	-
Acetaldehyde	75-07-0																		
Arsenic	7440-38-2	1.71E-07	7.48E-07	7.48E-07	7.84E-08	3.44E-07	3.44E-07	1.53E-06	6.70E-06	6.70E-06	2.94E-08	1.29E-07	1.29E-07	9.41E-08	4.12E-07	4.12E-07			
Benzene	71-43-2	1.79E-06	7.85E-06	7.85E-06	8.24E-07	3.61E-06	3.61E-06	1.61E-05	7.03E-05	7.03E-05	3.09E-07	1.35E-06	1.35E-06	9.88E-07	4.33E-06	4.33E-06			
Dichlorobenzene	25321-22-6	1.02E-06	4.49E-06	4.49E-06	4.71E-07	2.06E-06	2.06E-06	9.18E-06	4.02E-05	4.02E-05	1.76E-07	7.73E-07	7.73E-07	5.65E-07	2.47E-06	2.47E-06			
Formaldehyde	50-00-0	6.40E-05	2.81E-04	2.81E-04	2.94E-05	1.29E-04	1.29E-04	5.74E-04	2.51E-03	2.51E-03	1.10E-05	4.83E-05	4.83E-05	3.53E-05	1.55E-04	1.55E-04			
Hexane	110-54-3	1.54E-03	6.73E-03	6.73E-03	7.06E-04	3.09E-03	3.09E-03	1.38E-02	6.03E-02	6.03E-02	2.65E-04	1.16E-03	1.16E-03	8.47E-04	3.71E-03	3.71E-03			
Naphthalene	91-20-3	5.21E-07	2.28E-06	2.28E-06	2.39E-07	1.05E-06	1.05E-06	4.66E-06	2.04E-05	2.04E-05	8.97E-08	3.93E-07	3.93E-07	2.87E-07	1.26E-06	1.26E-06			
Toluene	108-88-3	2.90E-06	1.27E-05	1.27E-05	1.33E-06	5.84E-06	5.84E-06	2.60E-05	1.14E-04	1.14E-04	5.00E-07	2.19E-06	2.19E-06	1.60E-06	7.01E-06	7.01E-06			
POM	-	7.38E-08	3.23E-07	3.23E-07	3.39E-08	1.48E-07	1.48E-07	6.61E-07	2.89E-06	2.89E-06	1.27E-08	5.57E-08	5.57E-08	4.07E-08	1.78E-07	1.78E-07			
Beryllium	7440-41-7	1.02E-08	4.49E-08	4.49E-08	4.71E-09	2.06E-08	2.06E-08	9.18E-08	4.02E-07	4.02E-07	1.76E-09	7.73E-09	7.73E-09	5.65E-09	2.47E-08	2.47E-08			
Cadmium	7440-43-9	9.39E-07	4.11E-06	4.11E-06	4.31E-07	1.89E-06	1.89E-06	8.41E-06	3.68E-05	3.68E-05	1.62E-07	7.09E-07	7.09E-07	5.18E-07	2.27E-06	2.27E-06			
Chromium	7440-47-3	1.20E-06	5.24E-06	5.24E-06	5.49E-07	2.40E-06	2.40E-06	1.07E-05	4.69E-05	4.69E-05	2.06E-07	9.02E-07	9.02E-07	6.59E-07	2.89E-06	2.89E-06			
Cobalt	-	7.17E-08	3.14E-07	3.14E-07	3.29E-08	1.44E-07	1.44E-07	6.42E-07	2.81E-06	2.81E-06	1.24E-08	5.41E-08	5.41E-08	3.95E-08	1.73E-07	1.73E-07			
Manganese	7439-96-5	3.24E-07	1.42E-06	1.42E-06	1.49E-07	6.53E-07	6.53E-07	2.91E-06	1.27E-05	1.27E-05	5.59E-08	2.45E-07	2.45E-07	1.79E-07	7.83E-07	7.83E-07			
Mercury	7439-97-6	2.22E-07	9.72E-07	9.72E-07	1.02E-07	4.47E-07	4.47E-07	1.99E-06	8.71E-06	8.71E-06	3.82E-08	1.67E-07	1.67E-07	1.22E-07	5.36E-07	5.36E-07			
Nickel	7440-02-0	1.79E-06	7.85E-06	7.85E-06	8.24E-07	3.61E-06	3.61E-06	1.61E-05	7.03E-05	7.03E-05	3.09E-07	1.35E-06	1.35E-06	9.88E-07	4.33E-06	4.33E-06			
Selenium	7782-49-2	2.05E-08	8.98E-08	8.98E-08	9.41E-09	4.12E-08	4.12E-08	1.84E-07	8.04E-07	8.04E-07	3.53E-09	1.55E-08	1.55E-08	1.13E-08	4.95E-08	4.95E-08			
Phenol	108-95-2																		
o-xylene	1330-20-7																		
Highest Facility Single HAP:																			
	-																		

Facility Name: Hormel Foods
Core/Qualitv Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

		Tempo ID No.:	EQUI 111 Bacon Bits Precooked			Tempo ID No.:	EQUI 113 Blood Dryer			Tempo ID No.:	EQUI 113 Combustion			Tempo ID No.:	EQUI 117 - AFO Heat Braising Unit			Tempo ID No.:	EQUI 117 Heat Braising Combustion			Tempo ID No.:
		Tempo SV ID No:	STRU 10			Tempo SV ID No:	STRU 23			Tempo SV ID No:	STRU23			Tempo SV ID No:	STRU 84			Tempo SV ID No:	STRU 84			Tempo SV ID No:
Pollutant	CAS # (if applicable)	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy	Emission rate (lb/hr)		
PM	-	8.01	35.1	35.1	131	572	1.96	0.041	0.18	0.18	0.15	0.66	0.66	1.46E-08	6.40E-08	6.40E-08				3.14E-03		
PM ₁₀	-	8.01	35.1	35.1	45.9	201	1.96	0.041	0.18	0.18	0.53	2.32	2.32	1.46E-08	6.40E-08	6.40E-08				3.14E-03		
PM _{2.5}	-	8.01	35.1	35.1	45.9	201	1.96	0.041	0.18	0.18	0.53	2.32	2.32	1.46E-08	6.40E-08	6.40E-08				3.14E-03		
SO ₂	-							3.24E-03	1.42E-02	1.42E-02	2.00E-02	8.76E-02	8.76E-02	1.15E-09	5.05E-09	5.05E-09				2.48E-04		
NOx	-							0.54	2.36	2.36	0.00E+00	0.00E+00	0.00E+00	1.92E-07	8.42E-07	8.42E-07				4.14E-02		
VOC	-	0.34	1.50	1.50	0.030	0.13	0.13	1.06E-08	4.63E-08	4.63E-08				2.28E-03								
CO	-				0.45	1.98	1.98	2.54	11.1	11.1	1.61E-07	7.07E-07	7.07E-07	3.48E-02								
Pb	-				2.70E-06	1.18E-05	1.18E-05				9.61E-07	4.21E-06	4.21E-06									
CO ₂	-				643	2816	2816							229	1003	1003				49.33		
CH ₄	-				1.21E-02	5.31E-02	5.31E-02				4.32E-03	1.89E-02	1.89E-02				9.30E-04					
N ₂ O	-				1.21E-03	5.31E-03	5.31E-03				4.32E-04	1.89E-03	1.89E-03				9.30E-05					
CO ₂ e	-				644	2819	2819				229	1004	1004				49.4					
Total HAPs		-			-			1.02E-02	4.46E-02	4.46E-02	-	-	-	-	3.63E-03	1.59E-02	1.59E-02			7.81E-04		
Acetaldehyde	75-07-0							1.08E-06	4.72E-06	4.72E-06				3.84E-07	1.68E-06	1.68E-06				8.27E-08		
Arsenic	7440-38-2				1.13E-05	4.96E-05	4.96E-05	-			4.04E-06	1.77E-05	1.77E-05				8.69E-07					
Benzene	71-43-2				6.47E-06	2.83E-05	2.83E-05	-			2.31E-06	1.01E-05	1.01E-05				4.96E-07					
Dichlorobenzene	25321-22-6				4.04E-04	1.77E-03	1.77E-03	-			1.44E-04	6.31E-04	6.31E-04				3.10E-05					
Formaldehyde	50-00-0				9.71E-03	4.25E-02	4.25E-02	-			3.46E-03	1.51E-02	1.51E-02				7.45E-04					
Hexane	110-54-3				3.29E-06	1.44E-05	1.44E-05	-			1.17E-06	5.13E-06	5.13E-06				2.52E-07					
Naphthalene	91-20-3				1.83E-05	8.03E-05	8.03E-05	-			6.53E-06	2.86E-05	2.86E-05				1.41E-06					
Toluene	108-88-3				4.75E-07	2.08E-06	2.08E-06	-			1.69E-07	7.41E-07	7.41E-07				3.57E-08					
POM	-				6.47E-08	2.83E-07	2.83E-07	-			2.31E-08	1.01E-07	1.01E-07				4.96E-09					
Beryllium	7440-41-7				5.93E-06	2.60E-05	2.60E-05	-			2.11E-06	9.26E-06	9.26E-06				4.55E-07					
Cadmium	7440-43-9				7.55E-06	3.31E-05	3.31E-05	-			2.11E-06	9.26E-06	9.26E-06				5.79E-07					
Chromium	7440-47-3				4.53E-07	1.98E-06	1.98E-06	-			1.61E-07	7.07E-07	7.07E-07				3.48E-08					
Cobalt	-				2.05E-06	8.97E-06	8.97E-06	-			7.30E-07	3.20E-06	3.20E-06				1.57E-07					
Manganese	7439-96-5				1.40E-06	6.14E-06	6.14E-06	-			5.00E-07	2.19E-06	2.19E-06				1.08E-07					
Mercury	7439-97-6				1.13E-05	4.96E-05	4.96E-05	-			4.04E-06	1.77E-05	1.77E-05				8.69E-07					
Nickel	7440-02-0				1.29E-07	5.67E-07	5.67E-07	-			4.61E-08	2.02E-07	2.02E-07				9.93E-09					
Selenium	7782-49-2																					
Phenol	108-95-2																					
o-xylene	1330-20-7																					
Highest Facility Single HAP:	-																					

Facility Name: Hormel Foods
Core/Qualitv Pork
Facility ID: 09900002
Agency Interest No.: 3926
Emissions Summary

		IA - MP136 RMAU		Tempo ID No.:		EQUI 119 - Natural Smoke Generator		Tempo ID No.:		EQUI 118 - Natural Smoke Generator		Tempo ID No.:		EQUI 120 - Natural Smoke Generator			
		NA		Tempo SV ID No:		STRU 11 and 13		Tempo SV ID No:		STRU 39 and 40		Tempo SV ID No:		STRU 48, 50 and 52			
Pollutant	CAS # (if applicable)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)	Uncontrolled tpy	Limited tpy		Emission rate (lb/hr)
PM	-	1.38E-02	1.38E-02		0.80	3.48			0.80	3.48			0.80	3.48			181
PM ₁₀	-	1.38E-02	1.38E-02		0.80	3.48			0.80	3.48			0.80	3.48			128
PM _{2.5}	-	1.38E-02	1.38E-02		0.80	3.48			0.80	3.48			0.80	3.48			126
SO ₂	-	1.09E-03	1.09E-03		0.00	0.00			0.00	0.00			0.00	0.00			0.26
NO _x	-	1.81E-01	1.81E-01		0.042	0.18			0.042	0.18			0.042	0.18			43.3
VOC	-	9.97E-03	9.97E-03		0.66	2.89			0.66	2.89			0.660	2.89			24.3
CO	-	1.52E-01	1.52E-01		1.62	7.10			1.62	7.10			1.89	8.28			58.3
Pb	-																2.01E-04
CO ₂	-	216.05	216.05		31.0	136			31.0	136			31.0	136			48,453
CH ₄	-	4.07E-03	4.07E-03		2.38E-03	1.04E-02			2.38E-03	1.04E-02			2.38E-03	1.04E-02			0.93
N ₂ O	-	4.07E-04	4.07E-04		1.19E-03	5.21E-03			1.19E-03	5.21E-03			1.19E-03	5.21E-03			0.10
CO ₂ e	-	216	216		31.4	138			31.4	138			31.4	138			48,505
Total HAPs	-	3.42E-03	3.42E-03	-	1.28E-01	5.60E-01	NA	-	1.28E-01	5.60E-01	NA	-	1.28E-01	5.60E-01	NA	-	2.01
Acetaldehyde	75-07-0				3.90E-02	1.71E-01	NA		3.90E-02	1.71E-01	NA		3.90E-02	1.71E-01	NA		3.90E-01
Arsenic	7440-38-2	3.62E-07	3.62E-07														8.06E-05
Benzene	71-43-2	3.81E-06	3.81E-06		2.91E-02	1.27E-01	NA		2.91E-02	1.27E-01	NA		2.91E-02	1.27E-01	NA		2.92E-01
Dichlorobenzene	25321-22-6	2.17E-06	2.17E-06														4.85E-04
Formaldehyde	50-00-0	1.36E-04	1.36E-04		1.95E-02	8.54E-02	NA		1.95E-02	8.54E-02	NA		1.95E-02	8.54E-02	NA		1.97E-01
Hexane	110-54-3	3.26E-03	3.26E-03														7.27E-01
Naphthalene	91-20-3	1.11E-06	1.11E-06														2.46E-04
Toluene	108-88-3	6.16E-06	6.16E-06		1.10E-02	4.80E-02	NA		1.10E-02	4.80E-02	NA		1.10E-02	4.80E-02	NA		1.11E-01
POM		1.57E-07	1.57E-07		1.10E-02	4.80E-02	NA		1.10E-02	4.80E-02	NA		1.10E-02	4.80E-02	NA		1.10E-01
Beryllium	7440-41-7	2.17E-08	2.17E-08														4.85E-06
Cadmium	7440-43-9	1.99E-06	1.99E-06		3.30E-07	1.45E-06	NA		3.30E-07	1.45E-06	NA		3.30E-07	1.45E-06	NA		4.47E-04
Chromium	7440-47-3	2.54E-06	2.54E-06		1.50E-08	6.57E-08	NA		1.50E-08	6.57E-08	NA		1.50E-08	6.57E-08	NA		5.60E-04
Cobalt		1.52E-07	1.52E-07														3.94E-05
Manganese	7439-96-5	6.89E-07	6.89E-07		2.55E-06	1.12E-05	NA		2.55E-06	1.12E-05	NA		2.55E-06	1.12E-05	NA		1.79E-04
Mercury	7439-97-6	4.71E-07	4.71E-07														1.05E-04
Nickel	7440-02-0	3.81E-06	3.81E-06		2.10E-07	9.20E-07	NA		2.10E-07	9.20E-07	NA		2.10E-07	9.20E-07	NA		8.50E-04
Selenium	7782-49-2	4.35E-08	4.35E-08														9.69E-06
Phenol	108-95-2				1.54E-02	6.76E-02	NA		1.54E-02	6.76E-02	NA		1.54E-02	6.76E-02	NA		1.54E-01
o-xylene	1330-20-7				3.03E-03	1.33E-02	NA		3.03E-03	1.33E-02	NA		3.03E-03	1.33E-02	NA		3.03E-02
Highest Facility Single HAP:	-				1.28E-01												7.27E-01

Facility Name: Hormel Foods
 Core/Quality Pork
 Facility ID: 09900002
 Agency Interest No.: 3926
 Emissions Summary

Facility Total Emissions				
Pollutant	CAS # (if applicable)	Uncontrolled tpy	Limited tpy	
PM	-	4,729	122	
PM ₁₀	-	8,047	189	
PM _{2.5}	-	7,986	189	
SO ₂	-	1.14	1.14	
NO _x	-	177	177	
VOC	-	232	72.0	
CO	-	235	185	
Pb	-	8.81E-04	8.81E-04	
CO ₂	-	212,225	212,225	
CH ₄	-	4.08	4.08	
N ₂ O	-	0.47	0.47	
CO ₂ e	-	212,457	212,456	
Total HAPs	-	8.81	4.37	
Acetaldehyde	75-07-0	1.71E+00	4.78E-01	
Arsenic	7440-38-2	3.52E-04	3.53E-04	
Benzene	71-43-2	1.28E+00	3.60E-01	
Dichlorobenzene	25321-22-6	2.12E-03	2.12E-03	
Formaldehyde	50-00-0	8.61E-01	3.21E-01	
Hexane	110-54-3	3.17E+00	3.17E+00	
Naphthalene	91-20-3	1.08E-03	1.08E-03	
Toluene	108-88-3	4.86E-01	1.40E-01	
POI	-	4.80E-01	1.34E-01	
Beryllium	7440-41-7	2.12E-05	2.12E-05	
Cadmium	7440-43-9	1.95E-03	1.94E-03	
Chromium	7440-47-3	2.45E-03	2.47E-03	
Cobalt	-	1.75E-04	1.48E-04	
Manganese	7439-96-5	7.82E-04	7.01E-04	
Mercury	7439-97-6	4.58E-04	4.58E-04	
Nickel	7440-02-0	3.71E-03	3.71E-03	
Selenium	7782-49-2	4.23E-05	4.23E-05	
Phenol	108-95-2	6.75E-01	1.89E-01	
o-xylene	1330-20-7	1.33E-01	3.72E-02	
Highest Facility Single HAP:	-	3.17E+00	3.17E+00	

Calculations demonstrating compliance with Minn. R. 7011.0715

Subject Item	Stack SI ID	Treatment	Airflow (ASCFM)	Exit Gas Temp (°F)	Airflow (DSCFM)	Process Weight Rate (lb/hr)	Allowable Emission Rate (lb/hr) {Minn. R. 7011.0730 (Table 1)}	Allowable grain loading (gr/dscf) {Minn. R. 7011.0735 (Table 2)}	Applicable Emission Limit based on airflow (lb/hr)	Less Stringent PM Limit (lb/hr)	Less Stringent PM Limit (gr/dscf)
EQUIs 71, 101	STRU 23	TREAs 23, 31, 33, 46	56000	120	50,979	11926	10.9	0.0525	23.0	23.0	0.0525
EQUIs 17, 18	STRU 2	See calculations at the EQUIs	32000	80	31,289					See calculations at the EQUIs	
EQUI 68	STRU 11		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.100
EQUIs 68, 69*	STRU 12		4000	130	3,580	60	0.408	0.100	3.07	3.07	0.100
EQUI 69*	STRU 13		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.100
EQUI 72	STRU 4	See calculations at the EQUI								34.8	
EQUI 79*	STRU 48		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.100
EQUI 78*	STRU 49		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.100
EQUI 78*	STRU 50		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.100
EQUI 77*	STRU 51		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.100
EQUI 77*	STRU 52		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.100
EQUI 76, 80*	STRU 1		4000	130	3,580	60	0.408	0.100	3.07	3.07	0.408
EQUI 69, 76, 79*	STRU 38		4000	130	3,580	90	0.525	0.100	3.07	3.07	0.525
EQUI 76*	STRU 39		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.266
EQUI 80*	STRU 40		4000	130	3,580	30	0.266	0.100	3.07	3.07	0.266
EQUI 111	STRU 10		8000	85	7,750	8050	8.51	0.0967	6.43	8.51	8.51
EQUI 118	STRU 39	TREA 39, 40	4000	130	3,580	30	0.27	0.100	3.07	3.07	0.27
EQUI 118	STRU 40	TREA 39, 40	4000	130	3,580	30	0.27	0.100	3.07	3.07	0.27
EQUI 119	STRU 11	TREA 42, 44	4000	130	3,580	30	0.27	0.100	3.07	3.07	0.27
EQUI 119	STRU 12	TREA 42, 44	4000	130	3,580	30	0.27	0.100	3.07	3.07	0.27
EQUI 120	STRU 48	TREA 34, 36, 38	4000	130	3,580	30	0.27	0.100	3.07	3.07	0.27
EQUI 120	STRU 50	TREA 34, 36, 38	4000	130	3,580	30	0.27	0.100	3.07	3.07	0.27
EQUI 120	STRU 52	TREA 34, 36, 38	4000	130	3,580	30	0.27	0.100	3.07	3.07	0.27

(*) EQUIs 68, 69, and 76-80 are natural smoke generators that vent to multiple stacks simultaneously. These calculations assume worst-case conditions that a given smoke generator is venting only to a single stack. Certain stacks vent two smoke generators and therefore have their process weight rate and stack emissions doubled.

Stack Emissions PM lb/hr	PTE Cals Demonstrate Compliance?
1.58	YES
See calculations at the EQUIs	YES
0.795	YES
1.59	YES
0.795	YES
0.19	YES
0.795	YES
0.795	YES
0.795	YES
0.795	YES
0.795	YES
1.59	YES
2.39	YES
0.795	YES
0.795	YES
0.795	YES
1.59	YES
0.795	YES
0.795	YES
0.795	YES
0.795	YES
0.795	YES

Calculations demonstrating compliance with Minn. R. 7011.0600

Subject Item	Stack SI ID	Treatment	Airflow (ASCFM)	Exit Gas Temp (°F)	Airflow (DSCFM)	Process Weight Rate (lb/hr)	Allowable Emission Rate (lb/hr) {Minn. R. 7011.0730 (Table 1)}	Allowable grain loading (gr/dscf) {Minn. R. 7011.0735 (Table 2)}	Applicable Emission Limit based on airflow (lb/hr)	Less Stringent PM Limit (lb/hr)	Less Stringent PM Limit (gr/dscf)
EQUI 63	STRU 48	TREA 34	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 64	STRU 49	TREA 35	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 65	STRU 50	TREA 36	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 66	STRU 51	TREA 37	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 67	STRU 52	TREA 38	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 56	STRU 11	TREA 42	4000	130	3,580	0	0.000	0.100	3.1	3.1	0.100
EQUI 57	STRU 12	TREA 43	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 58	STRU 13	TREA 44	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 59	STRU 38	TREA 45	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 60	STRU 39	TREA 40	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 61	STRU 1	TREA 41	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 62	STRU 40	TREA 39	4000	130	3,580	0	0.000	0.100	3.07	3.07	0.100
EQUI 14, 71	STRU 23	TREAs 23, 31, 33, and 46	56000	120	50,979	0	0.000	0.0525	23.0	23.0	0.053
EQUI 113	STRU 23	TREAs 23, 31, 33, and 46	56000	120	50,979	0	0.000	0.053	23.0	23.0	0.000
TREA 23	STRU 23	TREAs 23, 31, 33, and 46	56000	120	50,979	0	0.000	0.053	23.0	23.0	0.000

Stack Emissions PM lb/hr	PTE Cals Demonstrate Compliance?
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.011	YES
0.0671	YES
1.13E-05	YES
5.96E-02	YES

Calculations demonstrating compliance with Minn. R. 7011.0500

Subject Item	Stack SI ID	Treatment	Airflow (ASCFM)	Exit Gas Temp (°F)	Airflow (DSCFM)	Process Weight Rate (lb/hr)	Allowable Emission Rate (lb/hr) {Minn. R. 7011.0730 (Table 1)}	Allowable grain loading (gr/dscf) {Minn. R. 7011.0735 (Table 2)}	Applicable Emission Limit based on airflow (lb/hr)	Less Stringent PM Limit (lb/hr)	Less Stringent PM Limit (gr/dscf)
EQUI 4	STRU 83		720	115	661	0	0.000	0.100	0.57	0.57	0.100
EQUI 5	STRU 83		720	115	661	0	0.000	0.100	0.57	0.57	0.100
EQUI 6	STRU 83		720	115	661	0	0.000	0.100	0.57	0.57	0.100
EQUI 7	STRU 83		720	115	661	0	0.000	0.100	0.57	0.57	0.100
EQUI 8	STRU 83		720	115	661	0	0.000	0.100	0.57	0.57	0.100
EQUI 117	STRU 91		3700	250	2,752	0	0.000	0.100	2.36	2.36	0.100
	STRU 92		3700	250	2,752	0	0.000	0.100	2.36	2.36	0.100

Stack Emissions PM lb/hr	PTE Cals Demonstrate Compliance?
0.37	YES
0.37	YES
0.37	YES
0.19	YES
5.32E-02	YES
1.46E-08	YES
1.46E-08	YES

		Pre control emissions (tpy)			Post control emissions (tpy)			Other PSEU
		PM10	PM2.5	VOC	PM10	PM2.5	VOC	
TREA 23 (receives from TREAs 31, 33, and 46)	RTO							
EQUI 14		0.25	0.27	0.21	0.10	0.10	0.21	
EQUI 71		10.9	10.9	129	4.16	4.13	3.88	
EQUI 101		21.0	20.8	13.9	7.97	7.92	0.42	
EQUI 113		5.15	5.15	0.21	1.96	1.96	0.21	
		37.3	37.1	143	14.2	14.1	4.30	
62% for PM10								
62% for PM2.5								
97% for VOC								
TREA 24	Venturi	PM10	PM2.5		PM10	PM2.5		Other PSEU
EQUI 17		344	344		55.1	55.1		
84% for PM10								
0% for PM2.5								
TREA 25 (receives from TREA 24)	Packed bed	PM10	PM2.5		PM10	PM2.5		Other PSEU
EQUI 17		55.1	55.1		8.81	55.1		The PSEU is the combination of TREAs 24 and 25 So CAM applies to both
EQUI 18		18.4	18.4		2.94	18.4		
		73.4	73.4		11.7	73.4		
84% for PM10								
0% for PM2.5								
TREA 26	Packed bed	PM10	PM2.5		PM10	PM2.5		Other PSEU
EQUI 72		229	229		36.7	36.7		
84% for PM10								
0% for PM2.5								
TREA 31	Venturi	PM10	PM2.5		PM10	PM2.5		Other PSEU
EQUI 71		7025	6974		68.3	67.8		
84% for PM10								
84% for PM2.5								
TREA 33 (receives from TREA 46 or 31)	Packed bed	PM10	PM2.5	VOC	PM10	PM2.5	VOC	Other PSEU
EQUI 14		1.58	1.71	0.21	0.252	0.273	0.21	
EQUI 71		68.3	67.8	129	10.9	10.9	129	
EQUI 101		131	130	13.9	21.0	20.8	13.9	
EQUI 113		32.2	32	0.13	5.15	5.15	0.13	
		233	232	143	37.3	37.1	143	
84% for PM10								
84% for PM2.5								
0% for VOC								
TREA 46	Venturi	PM10	PM2.5	VOC	PM10	PM2.5	VOC	Other PSEU
EQUI 14		9.86	1.71	0.21	1.58	1.71	0.21	
EQUI 113		201	201	0.13	32.2	32.2	0.13	
		211	203	0.34	33.7	33.9	0.34	
84% for PM10								
84% for PM2.5 for EQUI 113 but 0% for EQUI 14								

COMG 3 - Natural Smoke Generators

Harmel Foods Corporation/Quality Pork Processors
COMG 3 - Natural Smoke Generators (contains EQUIS 68, 69, and 76-80)

Throughput Limit:

Batch Process	Continuous Process
	30 lbs sawdust/hr per smoke generator
	10 identical smoke generators in COMG 3
	368 tons sawdust/yr COMG 3 limit
	5000 BTU/lb wood
	1.5 MMBtu/hr

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Pollution Control Efficiency	Limited Controlled Emission Rate (tons/yr) *
PM	53	2.65E-02	AP-42, Section 9.5 Meat Smoke Houses	0%	9.75
PM10	53	2.65E-02	AP-42, Section 9.5 Meat Smoke Houses	0%	9.75
PM2.5	53	2.65E-02	AP-42, Section 9.5 Meat Smoke Houses	0%	9.75
NOX	2.8	7.00E-04	AP-42, Table 1.10-1 @ 50% Moisture*	0%	0.52
VOC	44	2.20E-02	AP-42, Section 9.5 Meat Smoke Houses	0%	8.10
CO	1.39E+02	6.97E-02	Schroter Emissions Data (See below)	0%	25.6
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	0%	0.48
Formaldehyde	1.03E+00	5.13E-04	Schroter Emissions Data (See below)	0%	0.19
Phenol	1.03E+00	5.13E-04	Schroter Emissions Data (See below)	0%	0.19
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2	0%	0.36
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2	0%	0.13
o-xylene	0.202	1.01E-04	AP-42 Table 1.10-2	0%	0.037
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4	0%	4.05E-06
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4	0%	1.84E-07
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4	0%	3.13E-05
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4	0%	2.58E-06
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3	0%	0.13
HAPs (total)			AP-42 Table 1.10-2 and 3	0%	1.04

* Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group. Other emissions are calculated at the EQUI

Schroter Information (emissions out of oven)						
Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Wood chip consumption (lb wood/hr)	Emission Factor (lb/lb wood)
CO	3000	3429	350	2.09	30	6.97E-02
Formaldehyde		20	350	1.54E-02	30	5.13E-04
Phenol		20	350	1.54E-02	30	5.13E-04

mg/m3 = (ppm) * (molecular weight) / (24.5 L @ 25 deg C) (Temp. Compensate)

T standard = 298 K
T Actual = 366 K (200 F)
V Standard = 24.5 L/mg mol

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Maximum Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	207	310	0.00	NA	NA	1359
CH ₄	28	1.59E-02	2.38E-02	0.00	NA	NA	1.04E-01
N ₂ O	265	7.94E-03	1.19E-02	0.00	NA	NA	5.21E-02
Total GHG (CO ₂ e)					NA	NA	1,375

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit TREA 23 Regenerative Thermal Oxidizer
Stack/Vent Designation Number: STRU23
Maximum Rated Capacity: 8 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0078 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
PM	7.60	5.96E-02	2.61E-01	0.00	5.96E-02	2.61E-01
PM ₁₀	7.60	5.96E-02	2.61E-01	0.00	5.96E-02	2.61E-01
PM _{2.5}	7.60	5.96E-02	2.61E-01	0.00	5.96E-02	2.61E-01
NO _x	100	7.84E-01	3.44E+00	0.00E+00	7.84E-01	3.44E+00
SO _x	6.00E-01	4.71E-03	2.06E-02	0.00E+00	4.71E-03	2.06E-02
CO	84	6.59E-01	2.89E+00	0.00E+00	6.59E-01	2.89E+00
VOC	5.50	4.31E-02	1.89E-01	0.00E+00	4.31E-02	1.89E-01
Lead	5.00E-04	3.92E-06	1.72E-05	0.00	3.92E-06	1.72E-05

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.65E-05	7.21E-05	0.0	1.65E-05	7.21E-05
Dichlorobenzene (25321-22-6)	1.20E-03	9.41E-06	4.12E-05	0.0	9.41E-06	4.12E-05
Formaldehyde (50-00-0)	7.50E-02	5.88E-04	2.58E-03	0.0	5.88E-04	2.58E-03
Hexane (110-54-3)	1.80E+00	1.41E-02	6.18E-02	0.0	1.41E-02	6.18E-02
Naphthalene (91-20-3) ^b	6.10E-04	4.78E-06	2.10E-05	0.0	4.78E-06	2.10E-05
Toluene (108-88-3)	3.40E-03	2.67E-05	1.17E-04	0.0	2.67E-05	1.17E-04
Polycyclic Organic Matter (POM) ^c	8.64E-05	6.78E-07	2.97E-06	0.0	6.78E-07	2.97E-06
Arsenic (7440-38-2)	2.00E-04	1.57E-06	6.87E-06	0.0	1.57E-06	6.87E-06
Beryllium (7440-41-7)	1.20E-05	9.41E-08	4.12E-07	0.0	9.41E-08	4.12E-07
Cadmium (7440-43-9)	1.10E-03	8.63E-06	3.78E-05	0.0	8.63E-06	3.78E-05
Chromium (7440-47-3)	1.40E-03	1.10E-05	4.81E-05	0.0	1.10E-05	4.81E-05
Cobalt (7440-48-4)	8.40E-05	6.59E-07	2.89E-06	0.0	6.59E-07	2.89E-06
Manganese (7439-96-5)	3.80E-04	2.98E-06	1.31E-05	0.0	2.98E-06	1.31E-05
Mercury (7439-97-6)	2.60E-04	2.04E-06	8.93E-06	0.0	2.04E-06	8.93E-06
Nickel (7440-02-0)	2.10E-03	1.65E-05	7.21E-05	0.0	1.65E-05	7.21E-05
Selenium (7782-49-2)	2.40E-05	1.88E-07	8.24E-07	0.0	1.88E-07	8.24E-07
Totals		1.48E-02	6.48E-02		1.48E-02	6.48E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	935	0.00	4,096	4,096
CH ₄	28	2.20E-03	1.76E-02	0.00	7.72E-02	7.72E-02
N ₂ O	265	2.20E-04	1.76E-03	0.00	7.72E-03	7.72E-03
Total GHG (CO ₂ e)			936		4,096	4,096

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit: Boiler 1, EQUI 4
 Stack/Vent Designation Number: STRU 47
 Maximum Rated Capacity: 49 MMBtu/hr
 Control Equipment: N/A
 Fuel Type: Natural Gas

Fuel Parameters:

Fuel Type ¹	Heat Value	Max Capacity	Fuel Consumption Rate
		MMBtu/hr	
Natural Gas	1,020 btu/scf	49.0	0.048 MMscf/hr

¹ The use of Fuel Oil #6, Used Oil, and refined animal fat for combustion will no longer be permitted in these boilers.

Sulfur Content: 0.02 % Sulfur (Test Value)
 Ash Content: 0.02 % ash (Test Value)

Calculations Summary: Natural Gas

Pollutant	Emission Factor ¹ (lb/MMscf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	0.37	1.60	0.00	1.60
PM (filterable)	1.90	0.091	0.40	0.00	0.40
PM ₁₀	7.60	0.37	1.60	0.00	1.60
PM _{2.5}	7.60	0.37	1.60	0.00	1.60
NO _x	100	4.80	21.0	0.00	21.0
SO ₂	0.60	2.88E-02	1.26E-01	0.00	0.13
CO	84	4.04	17.7	0.00	17.7
VOC	5.50	0.26	1.16	0.00	1.16
Lead	5.00E-04	2.40E-05	1.05E-04	0.00	1.05E-04

² AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Natural Gas Combustion - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMscf) ³	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.01E-04	4.42E-04	0.0	4.42E-04
Dichlorobenzene (25321-22-6)	1.20E-03	5.76E-05	2.52E-04	0.0	2.52E-04
Formaldehyde (50-00-0)	7.50E-02	3.60E-03	1.58E-02	0.0	1.58E-02
Hexane (110-54-3)	1.80	8.65E-02	3.79E-01	0.00	3.79E-01
Naphthalene (91-20-3) ⁴	6.10E-04	2.93E-05	1.28E-04	0.0	1.28E-04
Toluene (108-88-3)	3.40E-03	1.63E-04	7.15E-04	0.0	7.15E-04
Polycyclic Organic Matter (POM) ⁵	8.64E-05	4.15E-06	1.82E-05	0.0	1.82E-05
Arsenic (7440-38-2)	2.00E-04	9.61E-06	4.21E-05	0.0	4.21E-05
Beryllium (7440-41-7)	1.20E-05	5.76E-07	2.52E-06	0.0	2.52E-06
Cadmium (7440-43-9)	1.10E-03	5.28E-05	2.31E-04	0.0	2.31E-04
Chromium (7440-47-3)	1.40E-03	6.73E-05	2.95E-04	0.0	2.95E-04
Cobalt (7440-48-4)	8.40E-05	4.04E-06	1.77E-05	0.0	1.77E-05
Manganese (7439-96-5)	3.80E-04	1.83E-05	8.00E-05	0.0	8.00E-05
Mercury (7439-97-6)	2.60E-04	1.25E-05	5.47E-05	0.0	5.47E-05
Nickel (7440-02-0)	2.10E-03	1.01E-04	4.42E-04	0.0	4.42E-04
Selenium (7782-49-2)	2.40E-05	1.15E-06	5.05E-06	0.0	5.05E-06
Totals		9.07E-02	3.97E-01		3.97E-01

³ All emissions are calculated based

⁴ Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

⁵ Total POM emission factor is equal to the sum of the individual POM compounds.

Natural Gas Combustion - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ⁶	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	5,728	0.00	25,087	25,087
CH ₄	28	2.20E-03	1.08E-01	0.00	4.73E-01	4.73E-01
N ₂ O	265	2.20E-04	1.08E-02	0.00	4.73E-02	4.73E-02
Total GHG (CO ₂ e)			5,733		25,112	25,112

⁶ Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit: Boiler 2, EQUI 5
 Stack/Vent Designation Number: STRU 47
 Maximum Rated Capacity: 49 MMBtu/hr
 Control Equipment: N/A
 Fuel Type: Natural Gas

Fuel Parameters:

Fuel Type ¹	Heat Value	Max Capacity	Fuel Consumption Rate
		MMBtu/hr	
Natural Gas	1,020 btu/scf	49.0	0.048 MMscf/hr

¹ The use of Fuel Oil #6 and Used Oil for combustion will no longer be permitted in these boilers.

Sulfur Content: 0.02 % Sulfur (Test Value)
 Ash Content: 0.02 % ash (Test Value)

Calculations Summary: Natural Gas

Pollutant	Emission Factor ¹ (lb/MMscf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	0.37	1.60	0.00	1.60
PM (filterable)	1.90	0.091	0.40	0.00	0.40
PM ₁₀	7.60	0.37	1.60	0.00	1.60
PM _{2.5}	7.60	0.37	1.60	0.00	1.60
NO _x	100	4.80	21.0	0.00	21.04
SO ₂	0.60	0.029	1.26E-01	0.00	0.13
CO	84	4.04	17.7	0.00	17.7
VOC	5.50	0.26	1.16	0.00	1.16
Lead	5.00E-04	2.40E-05	1.05E-04	0.00	1.05E-04

² AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Natural Gas Combustion - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMscf) ³	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.01E-04	4.42E-04	0.0	4.42E-04
Dichlorobenzene (25321-22-6)	1.20E-03	5.76E-05	2.52E-04	0.0	2.52E-04
Formaldehyde (50-00-0)	7.50E-02	3.60E-03	1.58E-02	0.0	1.58E-02
Hexane (110-54-3)	1.80	8.65E-02	0.38	0.00	3.79E-01
Naphthalene (91-20-3) ⁴	6.10E-04	2.93E-05	1.28E-04	0.0	1.28E-04
Toluene (108-88-3)	3.40E-03	1.63E-04	7.15E-04	0.0	7.15E-04
Polycyclic Organic Matter (POM) ⁵	8.64E-05	4.15E-06	1.82E-05	0.0	1.82E-05
Arsenic (7440-38-2)	2.00E-04	9.61E-06	4.21E-05	0.0	4.21E-05
Beryllium (7440-41-7)	1.20E-05	5.76E-07	2.52E-06	0.0	2.52E-06
Cadmium (7440-43-9)	1.10E-03	5.28E-05	2.31E-04	0.0	2.31E-04
Chromium (7440-47-3)	1.40E-03	6.73E-05	2.95E-04	0.0	2.95E-04
Cobalt (7440-48-4)	8.40E-05	4.04E-06	1.77E-05	0.0	1.77E-05
Manganese (7439-96-5)	3.80E-04	1.83E-05	8.00E-05	0.0	8.00E-05
Mercury (7439-97-6)	2.60E-04	1.25E-05	5.47E-05	0.0	5.47E-05
Nickel (7440-02-0)	2.10E-03	1.01E-04	4.42E-04	0.0	4.42E-04
Selenium (7782-49-2)	2.40E-05	1.15E-06	5.05E-06	0.0	5.05E-06
Totals		9.07E-02	3.97E-01		3.97E-01

³ All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

⁴ Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

⁵ Total POM emission factor is equal to the sum of the individual POM compounds.

Natural Gas Combustion - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ⁶	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	5,728	0.00	25,087	25,087
CH ₄	28	2.20E-03	1.08E-01	0.00	4.73E-01	4.73E-01
N ₂ O	265	2.20E-04	1.08E-02	0.00	4.73E-02	4.73E-02
Total GHG (CO ₂ e)			5,735		25,117	25,117

⁶ Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Refined Products Upgrade

Emission Unit: Boiler 3, EQUI 6
 Stack/Vent Designation Number: STRU 47
 Maximum Rated Capacity: 49 MMBtu/hr
 Control Equipment: N/A
 Fuel Type: Natural Gas

Fuel Parameters:

Fuel Type ¹	Heat Value	Max Capacity	Fuel Consumption Rate
		MMBtu/hr	
Natural Gas	1,020 btu/scf	49.0	0.048 MMscf/hr

¹ The use of Fuel Oil #6 and Used Oil for combustion will no longer be permitted in these boilers.

Sulfur Content: 0.02 % Sulfur (Test Value)
 Ash Content: 0.02 % ash (Test Value)

Calculations Summary: Natural Gas

Pollutant	Emission Factor ¹ (lb/MMscf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	0.37	1.60	0.00	1.60
PM (filterable)	1.90	0.091	0.40	0.00	0.400
PM ₁₀	7.60	0.37	1.60	0.00	1.60
PM _{2.5}	7.60	0.37	1.60	0.00	1.60
NO _x	100	4.80	21.04	0.00	21.0
SO ₂	0.60	0.029	0.13	0.00	0.126
CO	84	4.04	17.7	0.00	17.7
VOC	5.50	0.26	1.16	0.00	1.16
Lead	5.00E-04	2.40E-05	1.05E-04	0.00	1.05E-04

² AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Natural Gas Combustion - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMscf) ³	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.01E-04	4.42E-04	0.0	4.42E-04
Dichlorobenzene (25321-22-6)	1.20E-03	5.76E-05	2.52E-04	0.0	2.52E-04
Formaldehyde (50-00-0)	7.50E-02	3.60E-03	1.58E-02	0.0	1.58E-02
Hexane (110-54-3)	1.80	8.65E-02	0.38	0.00	3.79E-01
Naphthalene (91-20-3) ⁴	6.10E-04	2.93E-05	1.28E-04	0.0	1.28E-04
Toluene (108-88-3)	3.40E-03	1.63E-04	7.15E-04	0.0	7.15E-04
Polycyclic Organic Matter (POM) ⁵	8.64E-05	4.15E-06	1.82E-05	0.0	1.82E-05
Arsenic (7440-38-2)	2.00E-04	9.61E-06	4.21E-05	0.0	4.21E-05
Beryllium (7440-41-7)	1.20E-05	5.76E-07	2.52E-06	0.0	2.52E-06
Cadmium (7440-43-9)	1.10E-03	5.28E-05	2.31E-04	0.0	2.31E-04
Chromium (7440-47-3)	1.40E-03	6.73E-05	2.95E-04	0.0	2.95E-04
Cobalt (7440-48-4)	8.40E-05	4.04E-06	1.77E-05	0.0	1.77E-05
Manganese (7439-96-5)	3.80E-04	1.83E-05	8.00E-05	0.0	8.00E-05
Mercury (7439-97-6)	2.60E-04	1.25E-05	5.47E-05	0.0	5.47E-05
Nickel (7440-02-0)	2.10E-03	1.01E-04	4.42E-04	0.0	4.42E-04
Selenium (7782-49-2)	2.40E-05	1.15E-06	5.05E-06	0.0	5.05E-06
Totals		9.07E-02	3.97E-01		3.97E-01

³ All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

⁴ Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

⁵ Total POM emission factor is equal to the sum of the individual POM compounds.

Natural Gas Combustion - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ⁶	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	5,728	0.00	25,087	25,087
CH ₄	28	2.20E-03	1.08E-01	0.00E+00	4.73E-01	4.73E-01
N ₂ O	265	2.20E-04	1.08E-02	0.00E+00	4.73E-02	4.73E-02
Total GHG (CO ₂ e)			5,733		25,112	25,112

⁶ Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Refined Products Upgrade

Emission Unit Boiler 4, EQUI 7
 Stack/Vent Designation Number: STRU 47
 Maximum Rated Capacity: 25 MMBtu/hr
 Control Equipment: N/A
 Fuel Type Natural Gas

Fuel Parameters:

Fuel Type ¹	Heat Value	Max Capacity MMBtu/hr	Fuel Consumption Rate
Natural Gas	1,020 btu/scf	25.1	0.025 MMscf/hr

¹ The use of Fuel Oil #6 and Used Oil for combustion will no longer be permitted in these boilers.

Sulfur Content: 0.02 % Sulfur (Test Value)
 Ash Content 0.02 % ash (Test Value)

Calculations Summary: Natural Gas

Pollutant	Emission Factor ¹ (lb/MMscf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	0.187	0.82	0.00	0.82
PM (filterable)	1.90	0.047	0.20	0.00	0.20
PM ₁₀	7.60	0.187	0.82	0.00	0.82
PM _{2.5}	7.60	0.187	0.82	0.00	0.82
NO _x	100	2.46	10.8	0.00	10.8
SO ₂	0.60	1.48E-02	6.47E-02	0.00	6.47E-02
CO	84	2.07	9.05	0.00	9.05
VOC	5.50	0.135	0.59	0.00	0.59
Lead	5.00E-04	1.23E-05	5.39E-05	0.00	5.39E-05

² AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Natural Gas Combustion - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMscf) ³	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	5.17E-05	2.26E-04	0.0	5.17E-05	2.26E-04
Dichlorobenzene (25321-22-6)	1.20E-03	2.95E-05	1.29E-04	0.0	2.95E-05	1.29E-04
Formaldehyde (50-00-0)	7.50E-02	1.85E-03	8.08E-03	0.0	1.85E-03	8.08E-03
Hexane (110-54-3)	1.80E+00	4.43E-02	1.94E-01	0.00	4.43E-02	1.94E-01
Naphthalene (91-20-3) ⁴	6.10E-04	1.50E-05	6.57E-05	0.0	1.50E-05	6.57E-05
Toluene (108-88-3)	3.40E-03	8.37E-05	3.66E-04	0.0	8.37E-05	3.66E-04
Polycyclic Organic Matter (POM) ⁵	8.64E-05	2.13E-06	9.31E-06	0.0	2.13E-06	9.31E-06
Arsenic (7440-38-2)	2.00E-04	4.92E-06	2.16E-05	0.0	4.92E-06	2.16E-05
Beryllium (7440-41-7)	1.20E-05	2.95E-07	1.29E-06	0.0	2.95E-07	1.29E-06
Cadmium (7440-43-9)	1.10E-03	2.71E-05	1.19E-04	0.0	2.71E-05	1.19E-04
Chromium (7440-47-3)	1.40E-03	3.45E-05	1.51E-04	0.0	3.45E-05	1.51E-04
Cobalt (7440-48-4)	8.40E-05	2.07E-06	9.05E-06	0.0	2.07E-06	9.05E-06
Manganese (7439-96-5)	3.80E-04	9.35E-06	4.10E-05	0.0	9.35E-06	4.10E-05
Mercury (7439-97-6)	2.60E-04	6.40E-06	2.80E-05	0.0	6.40E-06	2.80E-05
Nickel (7440-02-0)	2.10E-03	5.17E-05	2.26E-04	0.0	5.17E-05	2.26E-04
Selenium (7782-49-2)	2.40E-05	5.91E-07	2.59E-06	0.0	5.91E-07	2.59E-06
Totals		4.64E-02	2.03E-01		4.64E-02	2.03E-01

³ All emissions are calculated

⁴ Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

⁵ Total POM emission factor is equal to the sum of the individual POM compounds.

Natural Gas Combustion - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ⁶	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	2,934	0.00	12,851	12,851
CH ₄	28	2.20E-03	5.53E-02	0.00	2.42E-01	2.42E-01
N ₂ O	265	2.20E-04	5.53E-03	0.00	2.42E-02	2.42E-02
Total GHG (CO ₂ e)			2,937		12,864	12,864

⁶ Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification No.:
 Stack/Vent Designation No.:
 Maximum Rated Boiler Capacity:
 Control Equipment:
 Fuel Parameters

Boiler 5, EQUI 8
 STRU 47
 7.14
 NA

MMBTU/hr

Fuel Type	% Sulfur	% Ash	Heat Value	Units	Maximum Fuel Consumption Rate	Units
Natural Gas	0.0001	negligible	1,020	Btu/scf	0.007	MMscf/hr

Pollutant	Emission Factor ^a (lbs/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Controlled Emissions (tons/yr)
PM	7.6	5.32E-02	2.33E-01	0%	2.33E-01
PM ₁₀	7.6	5.32E-02	2.33E-01	0%	2.33E-01
PM _{2.5}	7.6	5.32E-02	2.33E-01	0%	2.33E-01
SO _x	0.6	4.20E-03	1.84E-02	0%	1.84E-02
NO _x	100	7.00E-01	3.07E+00	0%	3.07E+00
VOC	5.5	3.85E-02	1.69E-01	0%	1.69E-01
CO	84	5.88E-01	2.58E+00	0%	2.58E+00
Lead	5.0E-04	3.50E-06	1.53E-05	0%	1.53E-05

^a Emission factor in lb/MMcf, Emission factor based on AP-42 Section 1.4 "Natural Gas Combustion" (7/98).

Natural Gas Combustion - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMscf) ³	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.47E-05	6.44E-05	0.0	1.47E-05	6.44E-05
Dichlorobenzene (25321-22-6)	1.20E-03	8.40E-06	3.68E-05	0.0	8.40E-06	3.68E-05
Formaldehyde (50-00-0)	7.50E-02	5.25E-04	2.30E-03	0.0	5.25E-04	2.30E-03
Hexane (110-54-3)	1.80E+00	1.26E-02	5.52E-02	0.0	1.26E-02	5.52E-02
Naphthalene (91-20-3) ⁴	6.10E-04	4.27E-06	1.87E-05	0.0	4.27E-06	1.87E-05
Toluene (108-88-3)	3.40E-03	2.38E-05	1.04E-04	0.0	2.38E-05	1.04E-04
Polycyclic Organic Matter (POM) ⁵	8.64E-05	6.05E-07	2.65E-06	0.0	6.05E-07	2.65E-06
Arsenic (7440-38-2)	2.00E-04	1.40E-06	6.13E-06	0.0	1.40E-06	6.13E-06
Beryllium (7440-41-7)	1.20E-05	8.40E-08	3.68E-07	0.0	8.40E-08	3.68E-07
Cadmium (7440-43-9)	1.10E-03	7.70E-06	3.37E-05	0.0	7.70E-06	3.37E-05
Chromium (7440-47-3)	1.40E-03	9.80E-06	4.29E-05	0.0	9.80E-06	4.29E-05
Cobalt (7440-48-4)	8.40E-05	5.88E-07	2.58E-06	0.0	5.88E-07	2.58E-06
Manganese (7439-96-5)	3.80E-04	2.66E-06	1.17E-05	0.0	2.66E-06	1.17E-05
Mercury (7439-97-6)	2.60E-04	1.82E-06	7.97E-06	0.0	1.82E-06	7.97E-06
Nickel (7440-02-0)	2.10E-03	1.47E-05	6.44E-05	0.0	1.47E-05	6.44E-05
Selenium (7782-49-2)	2.40E-05	1.68E-07	7.36E-07	0.0	1.68E-07	7.36E-07
Totals		1.32E-02	5.79E-02		1.32E-02	5.79E-02

³ All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

⁴ Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

⁵ Total POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
CO ₂	1	117	835	0.00	3,655
CH ₄	28	2.20E-03	1.57E-02	0.00	6.89E-02
N ₂ O	265	2.20E-04	1.57E-03	0.00	6.89E-03
Total GHG (CO ₂ e)			835		3,659

Emission Unit Boilers 6 and 7 EQUI 3 and EQUI 9
 Stack/Vent Designation Number: STRU 63 and STRU 64
 Maximum Rated Capacity: 29.4 MMBtu/hr each
 Control Equipment: N/A
 Fuel Type Natural Gas

Fuel Parameters:

Fuel Type ¹	Heat Value	Max Capacity MMBtu/hr	Fuel Consumption Rate
Natural Gas	1,020 btu/scf	29.4	0.029 MMscf/hr

¹ The use of Fuel Oil #6 and Used Oil for combustion will no longer be permitted in these boilers.

Sulfur Content: 0.02 % Sulfur (Test Value)
 Ash Content 0.02 % ash (Test Value)

Calculations Summary: Natural Gas

Pollutant	Emission Factor ¹ (lb/MMscf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	0.22	0.96	0.00	0.96
PM (filterable)	1.90	0.055	0.24	0.00	0.24
PM ₁₀	7.60	0.22	0.96	0.00	0.96
PM _{2.5}	7.60	0.22	0.96	0.00	0.96
NO _x	100	2.88	12.6	0.00	12.6
SO ₂	0.60	0.017	7.57E-02	0.00	7.57E-02
CO	84	2.42	10.6	0.00	10.6
VOC	5.50	0.16	0.69	0.00	0.69
Lead	5.00E-04	1.44E-05	6.31E-05	0.00	6.31E-05

² AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Natural Gas Combustion - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMscf) ³	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	6.05E-05	2.65E-04	0.0	2.65E-04
Dichlorobenzene (25321-22-6)	1.20E-03	3.46E-05	1.51E-04	0.0	1.51E-04
Formaldehyde (50-00-0)	7.50E-02	2.16E-03	9.47E-03	0.0	9.47E-03
Hexane (110-54-3)	1.80E+00	5.19E-02	2.27E-01	0.0	2.27E-01
Naphthalene (91-20-3) ⁴	6.10E-04	1.76E-05	7.70E-05	0.0	7.70E-05
Toluene (108-88-3)	3.40E-03	9.80E-05	4.29E-04	0.0	4.29E-04
Polycyclic Organic Matter (POM) ⁵	8.64E-05	2.49E-06	1.09E-05	0.0	1.09E-05
Arsenic (7440-38-2)	2.00E-04	5.76E-06	2.52E-05	0.0	2.52E-05
Beryllium (7440-41-7)	1.20E-05	3.46E-07	1.51E-06	0.0	1.51E-06
Cadmium (7440-43-9)	1.10E-03	3.17E-05	1.39E-04	0.0	1.39E-04
Chromium (7440-47-3)	1.40E-03	4.04E-05	1.77E-04	0.0	1.77E-04
Cobalt (7440-48-4)	8.40E-05	2.42E-06	1.06E-05	0.0	1.06E-05
Manganese (7439-96-5)	3.80E-04	1.10E-05	4.80E-05	0.0	4.80E-05
Mercury (7439-97-6)	2.60E-04	7.49E-06	3.28E-05	0.0	3.28E-05
Nickel (7440-02-0)	2.10E-03	6.05E-05	2.65E-04	0.0	2.65E-04
Selenium (7782-49-2)	2.40E-05	6.92E-07	3.03E-06	0.0	3.03E-06
Totals		5.44E-02	2.38E-01		2.38E-01

³All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

⁴Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

⁵Total POM emission factor is equal to the sum of the individual POM compounds.

Natural Gas Combustion - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ⁶	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	3,437	0.00	15,052	15,052
CH ₄	28	2.20E-03	6.48E-02	0.00	2.84E-01	2.84E-01
N ₂ O	265	2.20E-04	6.48E-03	0.00	2.84E-02	2.84E-02
Total GHG (CO ₂ e)			3,440		15,067	15,067

⁶ Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

	Emission Unit		Bone Dryer - EQUI 14				
	Stack/Vent Designation Number:		STRU 25				
	Maximum Rated Capacity:	9	million BTU/hr				
	Control Equipment:	na					
	Fuel Paramaters						
	Fuel Type		Natural Gas ONLY	No secondary fuel			
	% sulfur		na				
	% ash		na				
	Heat Value:		1020 Btu/cf				
	Fuel Consumption Rate:		8824 cf/hr				
	Source of Emission Factors:	AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr					
	Calculations Summary:						
	Pollutant	Emission Factor	Emission Rate	Maximum Uncontrolled Emissions	Pollution Control Efficiency	Controlled Emission Rate	Controlled Emission Rate
		(lb/cf)	(lbs/hr)	(tpy)	(%)	(lbs/hr)	(tons/yr)
							Limited Emissions (tons/yr)
	PM	7.60E-06	0.067	0.294	0.00	0.067	0.294
	PM10	7.60E-06	0.067	0.294	0.00	0.067	0.294
	PM2.5	7.60E-06	0.067	0.294	0.00	0.067	0.294
	SOX	6.00E-07	0.0053	0.023	0.00	0.005	0.023
	NOX	1.00E-04	0.882	3.86	0.00	0.882	3.86
	VOC	5.50E-06	0.049	0.213	0.00	0.049	0.213
	CO	8.40E-05	0.741	3.25	0.00	0.741	3.25
	Lead	5.00E-10	4.41E-06	1.93E-05	0.00	4.41E-06	1.93E-05
	Natural Gas HAPs						
	Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)		
	Benzene (71-43-2)	2.10E-03	1.85E-05	8.12E-05	8.12E-05		
	Dichlorobenzene (25321-22-6)	1.20E-03	1.06E-05	4.64E-05	4.64E-05		
	Formaldehyde (50-00-0)	7.50E-02	6.62E-04	2.90E-03	2.90E-03		
	Hexane (110-54-3)	1.80E+00	1.59E-02	6.96E-02	6.96E-02		
	Naphthalene (91-20-3)	6.10E-04	5.38E-06	2.36E-05	2.36E-05		
	Toluene (108-88-3)	3.40E-03	3.00E-05	1.31E-04	1.31E-04		
	Polycyclic Organic Matter (POM)	8.64E-05	7.62E-07	3.34E-06	3.34E-06		
	Arsenic (7440-38-2)	2.00E-04	1.76E-06	7.73E-06	7.73E-06		
	Beryllium (7440-41-7)	1.20E-05	1.06E-07	4.64E-07	4.64E-07		
	Cadmium (7440-43-9)	1.10E-03	9.71E-06	4.25E-05	4.25E-05		
	Chromium (7440-47-3)	1.40E-03	1.24E-05	5.41E-05	5.41E-05		
	Cobalt (7440-48-4)	8.40E-05	7.41E-07	3.25E-06	3.25E-06		
	Manganese (7439-96-5)	3.80E-04	3.35E-06	1.47E-05	1.47E-05		
	Mercury (7439-97-6)	2.60E-04	2.29E-06	1.00E-05	1.00E-05		
	Nickel (7440-02-0)	2.10E-03	1.85E-05	8.12E-05	8.12E-05		
	Selenium (7782-49-2)	2.40E-05	2.12E-07	9.28E-07	9.28E-07		
	Totals	1.89	1.67E-02	7.29E-02	7.29E-02		
	Calculations Summary - Greenhouse Gases:						
	Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
	CO ₂	1	117	1,052	0.00	4,608	4,608
	CH ₄	28	2.20E-03	1.98E-02	0.00	8.69E-02	8.69E-02
	N ₂ O	265	2.20E-04	1.98E-03	0.00	8.69E-03	8.69E-03
	Total GHG (CO ₂ e)			1,053		4,612	4,612

Emission Unit Identification Number: EQUI 14- Bone Dryer
 Stack/Vent Designation Number: STRU 23
 Pollution Control Equipment Identification Number(s): TREA 23 (RTO), TREA 33 (packed bed scrubber), and TREA 46 (Venturi Scrubber)

Maximum Capacity: 3 dry ton/hr 12,000 lbs/hr @ 60% moisture

Source of Emission Factors used in table below: AP-42 Chapter 9.9.1 - Use Grain Drying - Rack Dryer as surrogate
 Since grain will be much dryer as a raw material, adjust weight to 10% moisture to compare to the emissions factor.

Calculations Summary:

Pollutant	Uncontrolled Emission Factor (lb/ton)	Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency* (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
PM	3.00	9.00	39.4	99.7%	0.031	0.13	0.13
PM ₁₀	0.75	2.25	9.86	99.0%	0.022	0.10	0.10
PM _{2.5}	0.13	0.39	1.71	62%	0.148	0.65	0.65
SO _x	na	na	na	na	na	na	na
NO _x	na	na	na	na	na	na	na
VOC	na	na	na	97%	na	na	na
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na

PM control efficiency for venturi scrubber is 94%, packed gas adsorption column is 85%, and thermal oxidizer is 62%

PM₁₀ control efficiency for venturi scrubber is 84%, packed gas adsorption column is 84%, and thermal oxidizer is 62%

Hormel conservatively assumed that the venturi scrubber would not control PM_{2.5} emissions but TREA 23 would control at 62% and TREA 33 would control at 84%.

There is no listed control efficiency for VOCs for venturi scrubbers or packed gas adsorption columns. Thermal oxidizers have a control efficiency listed at 97%.

Refined Products Upgrade

Emission Unit Identification Number:

EQUI 17 - Crax Room Air

Stack/Vent Designation Number

STRU 02

Pollution Control Equipment Identification Number(s):

TREA 24 and TREA 25

Maximum Capacity:

24,000 acfm

Source of Emission Factors used in table below:

State Process Equipment Rule

Calculations Summary:

Pollutant	Emission Factor (lb/msf)	Emission Rate (lb/hr)	Emissions (ton/yr)	Pollution Control Efficiency** (%)	Max Controlled Emissions (lb/hr)**	Limited Controlled Emissions (ton/yr)
PM	na	223	979	99.1%	2.01	8.81
PM ₁₀	na	78.6	344	97.4%	2.01	8.81
PM _{2.5}	na	78.6	344	97.4%	2.01	8.81
SO _x	na	na	na	na	na	na
NO _x	na	na	na	na	na	na
VOC	na	2.01	8.81	0%	2.01	8.81
CO	na	na	na	na	na	na
Lead	na	na	na	na	na	na

Notes:

* **Airflow:** 24,000 acfm
80 F
0.0 % moisture
23,467 scfm
23,467 dscfm
0.010 gr/dscf
2.01 lbs/hr

** Control efficiencies based on Minn. R. 7011.0070. EQUI 17 is controlled by TREA 24 (venturi scrubber) and TREA 25 (packed gas adsorption column) in series.

PM control efficiency for venturi scrubber is 94% and the packed gas adsorption column is 85%.

PM₁₀ control efficiency for venturi scrubber is 84% and the packed gas adsorption column is 84%.

Assume that PM_{2.5} control efficiency is the same as for PM₁₀

There is no listed control efficiency for VOCs for venturi scrubbers.

Calculations for Minn. R. 7011.0715

Airflow: 24,000 acfm
80 F
0.0 % moisture
23,467 scfm
23,467 dscfm
Calculate Allowable Emissions:
By Airflow 0.068 gr/dscf
Table: **13.6 lbs/hr**

IPER compliance

Stack test results (2/9/2024) are 0.159 lb/hr

This result is in compliance with IPER

Refined Products Upgrade

Emission Unit Identification Number:

EQUI 18 - Truck Loadout Room Air

Stack/Vent Designation Number

STRU 02

Pollution Control Equipment Identification Number(s):

TREA 25

Maximum Capacity:

8,000 acfm

Source of Emission Factors used in table below:

State Process Equipment Rule

Calculations Summary:

Pollutant	Emission Factor (lb/msf)	Emission Rate (lb/hr)	Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency** (%)	Max Controlled Emissions (lb/hr)*	Limited Controlled Emissions (ton/yr)
PM	na	4.47	19.6	85%	0.67	2.94
PM ₁₀	na	4.19	18.4	84%	0.67	2.94
PM _{2.5}	na	4.19	18.4	84%	0.67	2.94
SO _x	na	na	na	na	na	na
NO _x	na	na	na	na	na	na
VOC	na	0.67	2.94	0%	0.67	2.94
CO	na	na	na	na	na	na
Lead	na	na	na	na	na	na

Notes:

* **Airflow:** 8,000 acfm
80 F
0.0 % moisture
7,822 scfm
7,822 dscfm
0.010 gr/dscf
0.67 lbs/hr

** Control efficiencies based on Minn. R. 7011.0070. EQUI 18 is controlled by TREA 25 (packed gas adsorption column).

PM control efficiency for packed gas adsorption column is 85%

PM₁₀ control efficiency for packed gas adsorption column is 84%

Assume that PM_{2.5} control efficiency is 84%, the same as for PM₁₀

There is no listed control efficiency for VOCs for venturi scrubbers.

Calculations for Minn. R. 7011.0715

Airflow: 8,000 acfm
100 F
0.0 % moisture
7,543 scfm
7,543 dscfm
Calculate Allowable Emissions:
By Airflow 0.098 gr/dscf
Table: **6.31 lbs/hr**

IPER compliance

Stack test results (2/9/2024) are 0.159 lb/hr

This result is in compliance with IPER

Emission Unit EQU1 56-67, Smoked Meat Ovens #6-#12, Smoke Prep Sausage Oven #1-#5
Stack/Vent Designation Number: STRUs 1, 11-13, 38-40, 48-52
Maximum Rated Capacity: 1.5 million BTU/hr Each
Control Equipment: TREAs 34-45 (Exhaust washers)
Fuel Parameters
Fuel Type Natural Gas ONLY No secondary fuel
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0015 MMscf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMscf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	1.12E-02	4.90E-02	0.00	4.90E-02
PM ₁₀	7.60	1.12E-02	4.90E-02	0.00	4.90E-02
PM _{2.5}	7.60	1.12E-02	4.90E-02	0.00	4.90E-02
SO _x	0.60	8.82E-04	3.86E-03	0.00	3.86E-03
NO _x	100	1.47E-01	6.44E-01	0.00	6.44E-01
VOC	5.50	8.09E-03	3.54E-02	0.00	3.54E-02
CO	84	1.24E-01	5.41E-01	0.00	5.41E-01
Lead	5.00E-04	7.35E-07	3.22E-06	0.00	3.22E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	3.09E-06	1.35E-05	0.0	1.35E-05
Dichlorobenzene (25321-22-6)	1.20E-03	1.76E-06	7.73E-06	0.0	7.73E-06
Formaldehyde (50-00-0)	7.50E-02	1.10E-04	4.83E-04	0.0	4.83E-04
Hexane (110-54-3)	1.80E+00	2.65E-03	1.16E-02	0.0	1.16E-02
Naphthalene (91-20-3) ^b	6.10E-04	8.97E-07	3.93E-06	0.0	3.93E-06
Toluene (108-88-3)	3.40E-03	5.00E-06	2.19E-05	0.0	2.19E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.27E-07	5.57E-07	0.0	5.57E-07
Arsenic (7440-38-2)	2.00E-04	2.94E-07	1.29E-06	0.0	1.29E-06
Beryllium (7440-41-7)	1.20E-05	1.76E-08	7.73E-08	0.0	7.73E-08
Cadmium (7440-43-9)	1.10E-03	1.62E-06	7.09E-06	0.0	7.09E-06
Chromium (7440-47-3)	1.40E-03	2.06E-06	9.02E-06	0.0	9.02E-06
Cobalt (7440-48-4)	8.40E-05	1.24E-07	5.41E-07	0.0	5.41E-07
Manganese (7439-96-5)	3.80E-04	5.59E-07	2.45E-06	0.0	2.45E-06
Mercury (7439-97-6)	2.60E-04	3.82E-07	1.67E-06	0.0	1.67E-06
Nickel (7440-02-0)	2.10E-03	3.09E-06	1.35E-05	0.0	1.35E-05
Selenium (7782-49-2)	2.40E-05	3.53E-08	1.55E-07	0.0	1.55E-07
Totals		2.78E-03	1.22E-02		1.22E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	175	0.00	768	768
CH ₄	28	2.20E-03	3.31E-03	0.00	1.45E-02	1.45E-02
N ₂ O	265	2.20E-04	3.31E-04	0.00	1.45E-03	1.45E-03
Total GHG (CO ₂ e)			176		769	769

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 68 - Natural Smoke Generator
 Stack/Vent Designation Number: STRU 11 and STRU 12
 Pollution Control Equipment Identification Number: TREA 42 and TREA 43 (Exhaust Washers)

Maximum Capacity: 30 lbs sawdust/hr
 131.4 tons sawdust/yr
 Throughput Limit: 368 tons sawdust/yr Limit for all 10 generators
 Limited emissions are based on 1/10th of the annual wood throughput limit.
 5000 BTU/lb wood
 0.15 MMBtu/hr

Source of Emission Factors used in table below: See Below

Calculations Summary

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Limited Emission Rate (tons/yr) **
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	NA
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	NA
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	NA
NOX	2.8	7.00E-04	AP-42, Table 1.10-1 @ 50% Moisture*	2.10E-02	9.20E-02	0%	NA
VOC	44	2.20E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.660	2.89	0%	NA
CO	1.08E+02	5.40E-02	Hormel stack test, 2021 ***	1.62	7.10	0%	NA
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	NA
Formaldehyde	1.03	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	NA
Phenol	1.03	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	NA
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	2.91E-02	1.27E-01	0%	NA
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	NA
o-xylene	0.202	1.01E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	3.03E-03	1.33E-02	0%	NA
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	3.30E-07	1.45E-06	0%	NA
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4 (Residential Wood Stoves)	1.50E-08	6.57E-08	0%	NA
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.55E-06	1.12E-05	0%	NA
MEK	#REF!	#REF!	AP-42 Table 1.10-2 (Residential Wood Stoves)	#REF!	#REF!	0%	NA
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.10E-07	9.20E-07	0%	NA
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	NA
HAPs (total)			AP-42 Table 1.10-2 and 3 and Schroter Data	#REF!	#REF!	0%	NA

Emission Factor Data Notes:

* NOx Value from AP-42 Table 1.10-1

(2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned

** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group

*** Stack test at COMG 18, smoke from EQUI 68 passes through the COMG 18 ovens before passing out the stack

The stack tested value is 0.054 lb CO/lb of wood. See TSD Attachment 4)

Schroter Information (emissions out of oven)

Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Wood chip consumption (lb wood/hr)	Emission Factor (lb/lb wood)
Formaldehyde		20	350	1.54E-02	30	5.13E-04
Phenol		20	350	1.54E-02	30	5.13E-04

mg/m3 = (ppm) * (molecular weight) / (24.5 L @ 25 deg C) (Temp. Compensate)

T standard = 298 K MW of CO is 28 g/mol

T Actual = 366 K (200 F)

V Standard = 24.5 L/mg mol

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	207	31.0	0.00	136	NA
CH ₄	28	1.59E-02	2.38E-03	0.00	1.04E-02	NA
N ₂ O	265	7.94E-03	1.19E-03	0.00	5.21E-03	NA
Total GHG (CO ₂ e)			31.4		138	NA

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.



Emission Unit Identification Number: EQUI 69 - Natural Smoke Generator
Stack/Vent Designation Number: STRU12-13, STRU 38
Pollution Control Equipment Identification Number: TREA 43-45

Maximum Capacity: 30 lbs sawdust/hr
131.4 tons sawdust/yr
Throughput Limit: 368 tons sawdust/yr Limit for all 10 generators
Limited emissions are based on 1/10th of the annual wood throughput limit.
5000 BTU/lb wood
0.15 MMBtu/hr

Source of Emission Factors used in table below: See Below

Calculations Summary

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Limited Controlled Emission Rate (tons/yr) **
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	NA
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	NA
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	NA
NOX	2.8	7.00E-04	AP-42, Table 1.10-1 @ 50% Moisture*	2.10E-02	9.20E-02	0%	NA
VOC	44	2.20E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.660	2.89	0%	NA
CO	1.08E+02	5.40E-02	Hormel stack test, 2021 ***	1.62	7.10	0%	NA
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	NA
Formaldehyde	1.03E+00	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	NA
Phenol	1.03E+00	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	NA
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	2.91E-02	1.27E-01	0%	NA
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	NA
o-Xylene	0.202	1.01E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	3.03E-03	1.33E-02	0%	NA
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	3.30E-07	1.45E-06	0%	NA
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4 (Residential Wood Stoves)	1.50E-08	6.57E-08	0%	NA
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.55E-06	1.12E-05	0%	NA
MEK	#REF!	#REF!	AP-42 Table 1.10-2 (Residential Wood Stoves)	#REF!	#REF!	0%	NA
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.10E-07	9.20E-07	0%	NA
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	NA
HAPs (total)			AP-42 Table 1.10-2 and 3	#REF!	#REF!	0%	NA

Emission Factor Data Notes:

* NOx Value from AP-42 Table 1.10-1

(2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned

** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group

*** Stack test at COMG 18, smoke from EQUI 68 passes through the COMG 18 ovens before passing out the stack

The stack tested value is 0.054 lb CO/lb of wood. See TSD Attachment 4)

Schroter Information (emissions out of oven)

Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Wood chip consumption (lb wood/hr)	Emission Factor (lb/lb wood)
Formaldehyde		20	350	1.54E-02	30	5.13E-04
Phenol		20	350	1.54E-02	30	5.13E-04

mg/m3 = (ppm) * (molecular weight) / (24.5 L @ 25 deg C) (Temp. Compensate)

T standard = 298 K MW of CO is 28 g/mol

T Actual = 366.33 K (200 F)

V Standard = 24.5 L/mg mol

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	207	31.0	0.00	136	NA
CH ₄	28	1.59E-02	2.38E-03	0.00	1.04E-02	NA
N ₂ O	265	7.94E-03	1.19E-03	0.00	5.21E-03	NA
Total GHG (CO ₂ e)			31.4		138	NA

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.



Refined Products Upgrade

Emission Unit Identification Number: EQUI 71 - Refined Products Machinery
 Stack/Vent Designation Number: STRU 23
 Pollution Control Equipment Identification Number(s): TREA 23 (RTO), TREA 31 (venturi scrubber), TREA 33 (packed bed scrubber)

Maximum Capacity: 12,000 acfm
 Source of Emission Factors used in table below: State Process Equipment Rule

Pollutant	Emission Factor (lb/msf)	Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency ² (%)	Maximum Controlled Emissions (lb/hr) ¹	Maximum Controlled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
PM	na	632	2769	99.7%	2.16	9.47	9.47
PM ₁₀	na	1604	7025	99.0%	15.6	68.3	68.3
PM _{2.5}	na	1592	6974	99.0%	15.5	67.8	67.8
SO _x	na	na	na	na	na	na	na
NO _x	na	na	na	na	na	na	na
VOC	na	29.6	129	97%	0.89	3.88	3.88
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na
CO	na	na	na	na	na	na	
Lead	na	na	na	na	na	na	

Raw Material Throughput Comparison			
Process	Dry Product (lb/hr)	Raw Material (lb/hr) ¹	Fraction of Total
Blood Dryer	3,300	16,500	0.330
Rendering Operations	-	30,000	0.600
Hydrolyzer	-	3,500	0.070
Total	3,300	50,000	1.00

Notes:

1 - Maximum Controlled Emissions are based on STRU 23 stack limits: 3.00 lb/hr for PM; 18.00 lb/hr for PM₁₀; 18.00 lb/hr for PM_{2.5}; and 0.99 lb/hr for VOCs. EQUI 71 along with EQUI 14, EQUI 101, and EQUI 113 vent to STRU 23. EQUIs 14 and 113 have published emission factors. Because published emission factors for EQUI 71 and 101 do not exist, they were developed by subtracting EQUI 14 and EQUI 113 emissions from the stack limits and attributing the remaining emissions to EQUIs 71 and 101 based on raw material throughput.

2 - Control efficiencies are based on Minn. R. 7011.0070. STRU 23 is controlled by TREA 31 (venturi scrubber), TREA 33 (packed bed scrubber) and TREA 23 (RTO) in series

PM control efficiency for venturi scrubber is 94%, packed gas adsorption column is 85%, and thermal oxidizer is 62%

PM₁₀ and PM_{2.5} control efficiency for venturi scrubber is 84%, packed gas adsorption column is 84%, and thermal oxidizer is 62%

There is no listed control efficiency for VOCs for venturi scrubbers or packed gas adsorption columns. Thermal oxidizers have a control efficiency listed at 97%. The limit is based on the current emission limit for the unit.

This result is in compliance with IPER

Emission Unit EQUI 73 - Refined Products MAU 1
Stack/Vent Designation Number: STRU 05
Maximum Rated Capacity: 4.9 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0048 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	3.65E-02	1.60E-01	0.00	1.60E-01
PM ₁₀	7.60	3.65E-02	1.60E-01	0.00	1.60E-01
PM _{2.5}	7.60	3.65E-02	1.60E-01	0.00	1.60E-01
SO _x	0.60	2.88E-03	1.26E-02	0.00	1.26E-02
NO _x	100	4.80E-01	2.10E+00	0.00	2.10E+00
VOC	5.50	2.64E-02	1.16E-01	0.00	1.16E-01
CO	84	4.03E-01	1.77E+00	0.00	1.77E+00
Lead	5.00E-04	2.40E-06	1.05E-05	0.00	1.05E-05

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.01E-05	4.42E-05	0.0	4.42E-05
Dichlorobenzene (25321-22-6)	1.20E-03	5.76E-06	2.52E-05	0.0	2.52E-05
Formaldehyde (50-00-0)	7.50E-02	3.60E-04	1.58E-03	0.0	1.58E-03
Hexane (110-54-3)	1.80E+00	8.64E-03	3.78E-02	0.0	3.78E-02
Naphthalene (91-20-3) ^b	6.10E-04	2.93E-06	1.28E-05	0.0	1.28E-05
Toluene (108-88-3)	3.40E-03	1.63E-05	7.15E-05	0.0	7.15E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	4.15E-07	1.82E-06	0.0	1.82E-06
Arsenic (7440-38-2)	2.00E-04	9.60E-07	4.20E-06	0.0	4.20E-06
Beryllium (7440-41-7)	1.20E-05	5.76E-08	2.52E-07	0.0	2.52E-07
Cadmium (7440-43-9)	1.10E-03	5.28E-06	2.31E-05	0.0	2.31E-05
Chromium (7440-47-3)	1.40E-03	6.72E-06	2.94E-05	0.0	2.94E-05
Cobalt (7440-48-4)	8.40E-05	4.03E-07	1.77E-06	0.0	1.77E-06
Manganese (7439-96-5)	3.80E-04	1.82E-06	7.99E-06	0.0	7.99E-06
Mercury (7439-97-6)	2.60E-04	1.25E-06	5.47E-06	0.0	5.47E-06
Nickel (7440-02-0)	2.10E-03	1.01E-05	4.42E-05	0.0	4.42E-05
Selenium (7782-49-2)	2.40E-05	1.15E-07	5.05E-07	0.0	5.05E-07
Totals		9.06E-03	3.97E-02		3.97E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	572	0.00	2,507	2,507
CH ₄	28	2.20E-03	1.08E-02	0.00	4.73E-02	4.73E-02
N ₂ O	265	2.20E-04	1.08E-03	0.00	4.73E-03	4.73E-03
Total GHG (CO ₂ e)			572		2,507	2,507

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 74 - Refined Products MAU 2
Stack/Vent Designation Number: STRU 06
Maximum Rated Capacity: 4.9 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0048 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	3.65E-02	1.60E-01	0.00	1.60E-01
PM ₁₀	7.60	3.65E-02	1.60E-01	0.00	1.60E-01
PM _{2.5}	7.60	3.65E-02	1.60E-01	0.00	1.60E-01
SO _x	0.60	2.88E-03	1.26E-02	0.00	1.26E-02
NO _x	100	4.80E-01	2.10E+00	0.00	2.10E+00
VOC	5.50	2.64E-02	1.16E-01	0.00	1.16E-01
CO	84	4.03E-01	1.77E+00	0.00	1.77E+00
Lead	5.00E-04	2.40E-06	1.05E-05	0.00	1.05E-05

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.01E-05	4.42E-05	0.0	4.42E-05
Dichlorobenzene (25321-22-6)	1.20E-03	5.76E-06	2.52E-05	0.0	2.52E-05
Formaldehyde (50-00-0)	7.50E-02	3.60E-04	1.58E-03	0.0	1.58E-03
Hexane (110-54-3)	1.80E+00	8.64E-03	3.78E-02	0.0	3.78E-02
Naphthalene (91-20-3) ^b	6.10E-04	2.93E-06	1.28E-05	0.0	1.28E-05
Toluene (108-88-3)	3.40E-03	1.63E-05	7.15E-05	0.0	7.15E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	4.15E-07	1.82E-06	0.0	1.82E-06
Arsenic (7440-38-2)	2.00E-04	9.60E-07	4.20E-06	0.0	4.20E-06
Beryllium (7440-41-7)	1.20E-05	5.76E-08	2.52E-07	0.0	2.52E-07
Cadmium (7440-43-9)	1.10E-03	5.28E-06	2.31E-05	0.0	2.31E-05
Chromium (7440-47-3)	1.40E-03	6.72E-06	2.94E-05	0.0	2.94E-05
Cobalt (7440-48-4)	8.40E-05	4.03E-07	1.77E-06	0.0	1.77E-06
Manganese (7439-96-5)	3.80E-04	1.82E-06	7.99E-06	0.0	7.99E-06
Mercury (7439-97-6)	2.60E-04	1.25E-06	5.47E-06	0.0	5.47E-06
Nickel (7440-02-0)	2.10E-03	1.01E-05	4.42E-05	0.0	4.42E-05
Selenium (7782-49-2)	2.40E-05	1.15E-07	5.05E-07	0.0	5.05E-07
Totals		9.06E-03	3.97E-02		3.97E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	572	0.00	2,507	2,507
CH ₄	28	2.20E-03	1.08E-02	0.00	4.73E-02	4.73E-02
N ₂ O	265	2.20E-04	1.08E-03	0.00	4.73E-03	4.73E-03
Total GHG (CO ₂ e)			573		2,509	2,509

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 75 - Refined Products MAU 3
Stack/Vent Designation Number: STRU 07
Maximum Rated Capacity: 2.45 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0024 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	1.82E-02	7.99E-02	0.00%	7.99E-02
PM ₁₀	7.60	1.82E-02	7.99E-02	0.00%	7.99E-02
PM _{2.5}	7.60	1.82E-02	7.99E-02	0.00%	7.99E-02
SO _x	0.60	1.44E-03	6.31E-03	0.00%	6.31E-03
NO _x	100	2.40E-01	1.05E+00	0.00%	1.05E+00
VOC	5.50	1.32E-02	5.78E-02	0.00%	5.78E-02
CO	84	2.02E-01	8.83E-01	0.00%	8.83E-01
Lead	5.00E-04	1.20E-06	5.26E-06	0.00%	5.26E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	5.04E-06	2.21E-05	0.00%	2.21E-05
Dichlorobenzene (25321-22-6)	1.20E-03	2.88E-06	1.26E-05	0.00%	1.26E-05
Formaldehyde (50-00-0)	7.50E-02	1.80E-04	7.88E-04	0.00%	7.88E-04
Hexane (110-54-3)	1.80E+00	4.32E-03	1.89E-02	0.00%	1.89E-02
Naphthalene (91-20-3) ^b	6.10E-04	1.46E-06	6.41E-06	0.00%	6.41E-06
Toluene (108-88-3)	3.40E-03	8.16E-06	3.57E-05	0.00%	3.57E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.07E-07	9.08E-07	0.00%	9.08E-07
Arsenic (7440-38-2)	2.00E-04	4.80E-07	2.10E-06	0.00%	2.10E-06
Beryllium (7440-41-7)	1.20E-05	2.88E-08	1.26E-07	0.00%	1.26E-07
Cadmium (7440-43-9)	1.10E-03	2.64E-06	1.16E-05	0.00%	1.16E-05
Chromium (7440-47-3)	1.40E-03	3.36E-06	1.47E-05	0.00%	1.47E-05
Cobalt (7440-48-4)	8.40E-05	2.02E-07	8.83E-07	0.00%	8.83E-07
Manganese (7439-96-5)	3.80E-04	9.12E-07	3.99E-06	0.00%	3.99E-06
Mercury (7439-97-6)	2.60E-04	6.24E-07	2.73E-06	0.00%	2.73E-06
Nickel (7440-02-0)	2.10E-03	5.04E-06	2.21E-05	0.00%	2.21E-05
Selenium (7782-49-2)	2.40E-05	5.76E-08	2.52E-07	0.00%	2.52E-07
Totals		4.53E-03	1.98E-02		1.98E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	286	0.00	1,253	1,253
CH ₄	28	2.20E-03	5.40E-03	0.00	2.36E-02	2.36E-02
N ₂ O	265	2.20E-04	5.40E-04	0.00	2.36E-03	2.36E-03
Total GHG (CO ₂ e)			286		1,255	1,255

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 76 - Natural Smoke Generator
 Stack/Vent Designation Number: STRU 01, STRU 38-39
 Pollution Control Equipment Identification Number: TREA 40-41, TREA 45

Maximum Capacity: 30 lbs sawdust/hr
 131.4 tons sawdust/yr
Throughput Limit: 368 tons sawdust/yr Limit for all 10 generators
 Limited emissions are based on 1/10th of the annual wood throughput limit.
 5000 BTU/lb wood
 0.15 MMBtu/hr

Source of Emission Factors used in table below: See Below

Calculations Summary

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Uncontrolled Emission Rate (lbs/hr)	Potential Annual Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Controlled Emission Rate (tons/yr)	Limited Controlled Emission Rate (tons/yr) **
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
NOX	2.8	7.00E-04	AP-42, Table 1.10-1 @ 50% Moisture*	2.10E-02	9.20E-02	0%	9.20E-02	NA
VOC	44	2.20E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.660	2.89	0%	2.89	NA
CO		5.40E-02	Hormel stack test, 2021 ***	1.62	7.10	0%	7.10	NA
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	1.71E-01	NA
Formaldehyde		5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	6.75E-02	NA
Phenol		5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	6.75E-02	NA
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	2.91E-02	1.27E-01	0%	1.27E-01	NA
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	4.80E-02	NA
o-Xylene	0.202	1.01E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	3.03E-03	1.33E-02	0%	1.33E-02	NA
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	3.30E-07	1.45E-06	0%	1.45E-06	NA
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4 (Residential Wood Stoves)	1.50E-08	6.57E-08	0%	6.57E-08	NA
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.55E-06	1.12E-05	0%	1.12E-05	NA
MEK	#REF!	#REF!	AP-42 Table 1.10-2 (Residential Wood Stoves)	#REF!	#REF!	0%	#REF!	NA
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.10E-07	9.20E-07	0%	9.20E-07	NA
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	4.80E-02	NA
HAPs (total)			AP-42 Table 1.10-2, 3, and 4	#REF!	#REF!	0%	#REF!	NA

Emission Factor Data Notes:

* NOx Value from AP-42 Table 1.10-1
 (2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned
 ** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group
 *** Stack test at COMG 18, smoke from EQUI 68 passes through the COMG 18 ovens before passing out the stack
 The stack tested value is 0.054 lb CO/lb of wood. See TSD Attachment 4)

Schroter Information (emissions out of oven)

Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Wood chip consumption (lb wood/hr)	Emission Factor (lb/lb wood)
Formaldehyde		20	350	1.54E-02	30	5.13E-04
Phenol		20	350	1.54E-02	30	5.13E-04

mg/m3 = (ppm) * (molecular weight) / (24.5 L @ 25 deg C) (Temp. Compensate)
 T standard = 298 K
 T Actual = 366.33 K (200 F)
 V Standard = 24.5 L/mg mol

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	207	31.0	0.00	31.0	136	NA
CH ₄	28	1.59E-02	2.38E-03	0.00	2.38E-03	1.04E-02	NA
N ₂ O	265	7.94E-03	1.19E-03	0.00	1.19E-03	5.21E-03	NA
Total GHG (CO ₂ e)					31.4	138	NA

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 77 - Natural Smoke Generator
 Stack/Vent Designation Number: STRU 51-52
 Pollution Control Equipment Identification Number: TREA 37-38

Maximum Capacity: 30 lbs sawdust/hr
 131.4 tons sawdust/yr
Throughput Limit: 368 tons sawdust/yr Limit for all 10 generators
 Limited emissions are based on 1/10th of the annual wood throughput limit.
 5000 BTU/lb wood
 0.15 MMBtu/hr

Source of Emission Factors used in table below: See Below

Calculations Summary

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Uncontrolled Emission Rate (lbs/hr)	Potential Annual Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Controlled Emission Rate (lb/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emission Rate (tons/yr) **
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	0.795	3.48	NA
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	0.795	3.48	NA
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	0.795	3.48	NA
NOX	2.8	7.00E-04	AP-42, Table 1.10-1 @ 50% Moisture*	0.021	0.092	0%	0.021	0.092	NA
VOC	44	2.20E-02	AP-42, Section 9.5 Meat Smoke Houses	0.660	2.89	0%	0.660	2.89	NA
CO	126	6.30E-02	Hormel stack test, 2021 ***	1.89	8.28	0%	1.89	8.28	NA
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	3.90E-02	1.71E-01	NA
Formaldehyde	1.03	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	1.54E-02	6.75E-02	NA
Phenol	1.03	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	1.54E-02	6.75E-02	NA
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	2.91E-02	1.27E-01	0%	2.91E-02	1.27E-01	NA
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	1.10E-02	4.80E-02	NA
o-Xylene	0.202	1.01E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	3.03E-03	1.33E-02	0%	3.03E-03	1.33E-02	NA
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	3.30E-07	1.45E-06	0%	3.30E-07	1.45E-06	NA
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4 (Residential Wood Stoves)	1.50E-08	6.57E-08	0%	1.50E-08	6.57E-08	NA
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.55E-06	1.12E-05	0%	2.55E-06	1.12E-05	NA
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.10E-07	9.20E-07	0%	2.10E-07	9.20E-07	NA
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	1.10E-02	4.80E-02	NA
HAPs (total)			AP-42 Table 1.10-2 and 3	8.48E-02	3.71E-01	0%	8.48E-02	3.71E-01	NA

Emission Factor Data Notes:

* NOX Value from AP-42 Table 1.10-1

(2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned

** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group

*** Stack test at COMG 16, smoke from EQUI 68 passes through the COMG 16 ovens before passing out the stack

The stack tested value is 0.054 lb CO/lb of wood. See TSD Attachment 4)

Schroter Information (emissions out of oven)(TSD Attachment 5)

Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Wood chip consumption (lb wood/hr)	Emission Factor (lb/lb wood)
Formaldehyde		20	350	1.54E-02	30	5.13E-04
Phenol		20	350	1.54E-02	30	5.13E-04

mg/m3 = (ppm) * (molecular weight) / (24.5 L @ 25 deg C) (Temp. Compensate)

T standard = 298 K

T Actual = 366.33 K (200 F)

V Standard = 24.5 L/mg mol

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	207	31.0	0.00	31.0	136	NA
CH ₄	28	1.59E-02	2.38E-03	0.00	2.38E-03	1.04E-02	NA
N ₂ O	265	7.94E-03	1.19E-03	0.00	1.19E-03	5.21E-03	NA
Total GHG (CO ₂ e)					31.4	138	NA

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 78 - Natural Smoke Generator
 Stack/Vent Designation Number: STRU 49-51
 Pollution Control Equipment Identification Number: TREA 35-37

Maximum Capacity: 30 lbs sawdust/hr
 131.4 tons sawdust/yr
Throughput Limit: 368 tons sawdust/yr Limit for all 10 generators
 Limited emissions are based on 1/10th of the annual wood throughput limit.
 5000 BTU/lb wood
 0.15 MMBtu/hr

Source of Emission Factors used in table below: See Below

Calculations Summary

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Uncontrolled Emission Rate (lbs/hr)	Potential Annual Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Controlled Emission Rate (tons/yr)	Limited Controlled Emission Rate (tons/yr) **
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
NOX	2.8	7.00E-04	AP-42, Table 1.10-1 @ 50% Moisture*	0.021	0.092	0%	0.092	NA
VOC	44	2.20E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.660	2.89	0%	2.89	NA
CO	126	6.30E-02	Hormel stack test, 2021 ***	1.89	8.28	0%	8.28	NA
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	1.71E-01	NA
Formaldehyde	1.03	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	6.75E-02	NA
Phenol	1.03	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	6.75E-02	NA
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	2.91E-02	1.27E-01	0%	1.27E-01	NA
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	4.80E-02	NA
o-xylene	0.202	1.01E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	3.03E-03	1.33E-02	0%	1.33E-02	NA
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	3.30E-07	1.45E-06	0%	1.45E-06	NA
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4 (Residential Wood Stoves)	1.50E-08	6.57E-08	0%	6.57E-08	NA
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.55E-06	1.12E-05	0%	1.12E-05	NA
MEK	#REF!	#REF!	AP-42 Table 1.10-2 (Residential Wood Stoves)	#REF!	#REF!	0%	#REF!	NA
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.10E-07	9.20E-07	0%	9.20E-07	NA
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	4.80E-02	NA
HAPs (total)			AP-42 Table 1.10-2 and 3	#REF!	#REF!	0%	#REF!	NA

Emission Factor Data Notes:

* NOx Value from AP-42 Table 1.10-1

(2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned

** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group

*** Stack test at COMG 16, smoke from EQUI 68 passes through the COMG 16 ovens before passing out the stack
 The stack tested value is 0.054 lb CO/lb of wood. See TSD Attachment 4)

Schroter Information (emissions out of oven)(TSD Attachment 5)

Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Wood chip consumption (lb wood/hr)	Emission Factor (lb/lb wood)
Formaldehyde		20	350	1.54E-02	30	5.13E-04
Phenol		20	350	1.54E-02	30	5.13E-04

mg/m3 = (ppm) * (molecular weight) / (24.5 L @ 25 deg C) (Temp. Compensate)

T standard = 298 K

T Actual = 366.33 K (200 F)

V Standard = 24.5 L/mg mol

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	207	31	0.00	31.0	136	NA
CH ₄	28	1.59E-02	2.38E-03	0.00	2.38E-03	1.04E-02	NA
N ₂ O	265	7.94E-03	1.19E-03	0.00	1.19E-03	5.21E-03	NA
Total GHG (CO ₂ e)					31.4	138	NA

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 79 - Natural Smoke Generator
 Stack/Vent Designation Number: STRU 48-49
 Pollution Control Equipment Identification Number: TREA 34-35

Maximum Capacity: 30 lbs sawdust/hr
 131 tons sawdust/yr
 Throughput Limit: 368 tons sawdust/yr Limit for all 10 generators
 Limited emissions are based on 1/10th of the annual wood throughput limit.
 5000 BTU/lb wood
 0.15 MMBtu/hr

Source of Emission Factors used in table below: See Below

Calculations Summary

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Uncontrolled Emission Rate (lbs/hr)	Potential Annual Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Controlled Emission Rate (tons/yr)	Limited Controlled Emission Rate (tons/yr) **
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
NOX	2.8	7.00E-04	AP-42, Table 1.10-1 @ 50% Moisture*	2.10E-02	9.20E-02	0%	9.20E-02	NA
VOC	44	2.20E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.660	2.89	0%	2.89	NA
CO	126	6.30E-02	Hormel stack test, 2021 ***	1.89	8.28	0%	8.28	NA
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	1.71E-01	NA
Formaldehyde	1.03	5.13E-04	AP-42, Section 9.5.2 Meat Smoke Houses	1.54E-02	6.75E-02	0%	6.75E-02	NA
Phenol	1.03	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	6.75E-02	NA
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	2.91E-02	1.27E-01	0%	1.27E-01	NA
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	4.80E-02	NA
o-Xylene	0.202	1.01E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	3.03E-03	1.33E-02	0%	1.33E-02	NA
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	3.30E-07	1.45E-06	0%	1.45E-06	NA
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4 (Residential Wood Stoves)	1.50E-08	6.57E-08	0%	6.57E-08	NA
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.55E-06	1.12E-05	0%	1.12E-05	NA
MEK	#REF!	#REF!	AP-42 Table 1.10-2 (Residential Wood Stoves)	#REF!	#REF!	0%	#REF!	NA
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.10E-07	9.20E-07	0%	9.20E-07	NA
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	4.80E-02	NA
HAPs (total)			AP-42 Table 1.10-2, 3, and 4	#REF!	#REF!	0%	#REF!	NA

Emission Factor Data Notes:

* NOx Value from AP-42 Table 1.10-1
 (2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned
 ** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group
 *** Stack test at COMG 16, smoke from EQUI 68 passes through the COMG 16 ovens before passing out the stack
 The stack tested value is 0.054 lb CO/lb of wood. See TSD Attachment 4)

Schroter Information (emissions out of oven)(TSD Attachment 5)

Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Wood chip consumption (lb wood/hr)	Emission Factor (lb/lb wood)
Formaldehyde		20	350	1.54E-02	30	5.13E-04
Phenol		20	350	1.54E-02	30	5.13E-04

mg/m3 = (ppm) * (molecular weight) / (24.5 L @ 25 deg C) (Temp. Compensate)
 T standard = 298 K
 T Actual = 366.33 K (200 F)
 V Standard = 24.5 L/mg mol

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	207	31	0.00	31.0	136	NA
CH ₄	28	1.59E-02	2.38E-03	0.00	2.38E-03	1.04E-02	NA
N ₂ O	265	7.94E-03	1.19E-03	0.00	1.19E-03	5.21E-03	NA
Total GHG (CO ₂ e)					31.4	138	NA

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 80 - Natural Smoke Generator
 Stack/Vent Designation Number: STRU 01, STRU 40
 Pollution Control Equipment Identification Number: TREA 39, TREA 41

Maximum Capacity: 30 lbs sawdust/hr
 131 tons sawdust/yr
 Throughput Limit: 368 tons sawdust/yr Limit for all 10 generators
 Limited emissions are based on 1/10th of the annual wood throughput limit.
 5000 BTU/lb wood
 0.15 MMBtu/hr

Source of Emission Factors used in table below: See Below

Calculations Summary

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Uncontrolled Emission Rate (lbs/hr)	Potential Annual Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Controlled Emission Rate (tons/yr)	Limited Controlled Emission Rate (tons/yr) **
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
NOX	2.8	7.00E-04	AP-42, Table 1.10-1 @ 50% Moisture*	2.10E-02	9.20E-02	0%	9.20E-02	NA
VOC	44	2.20E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.660	2.89	0%	2.89	NA
CO		5.40E-02	Hormel stack test, 2021 ***	1.62	7.10	0%	7.10	NA
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	1.71E-01	NA
Formaldehyde	1.30	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	6.75E-02	NA
Phenol	1.02	5.13E-04	Schroter Emissions Data (See below)	1.54E-02	6.75E-02	0%	6.75E-02	NA
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	2.91E-02	1.27E-01	0%	1.27E-01	NA
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	4.80E-02	NA
o-Xylene	0.202	1.01E-04	AP-42 Table 1.10-2 (Residential Wood Stoves)	3.03E-03	1.33E-02	0%	1.33E-02	NA
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	3.30E-07	1.45E-06	0%	1.45E-06	NA
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4 (Residential Wood Stoves)	1.50E-08	6.57E-08	0%	6.57E-08	NA
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.55E-06	1.12E-05	0%	1.12E-05	NA
MEK	#REF!	#REF!	AP-42 Table 1.10-2 (Residential Wood Stoves)	#REF!	#REF!	0%	#REF!	NA
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4 (Residential Wood Stoves)	2.10E-07	9.20E-07	0%	9.20E-07	NA
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3 (Residential Wood Stoves)	1.10E-02	4.80E-02	0%	4.80E-02	NA
HAPs (total)			AP-42 Table 1.10-2, 3, and 4	#REF!	#REF!	0%	#REF!	NA

Emission Factor Data Notes:

* NOx Value from AP-42 Table 1.10-1

(2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned

** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group

*** Stack test at COMG 18, smoke from EQUI 68 passes through the COMG 18 ovens before passing out the stack

The stack tested value is 0.054 lb CO/lb of wood. See TSD Attachment 4)

Schroter Information (emissions out of oven)(TSD Attachment 5)

Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Wood chip consumption (lb wood/hr)	Emission Factor (lb/lb wood)
Formaldehyde		20	350	1.54E-02	30	5.13E-04
Phenol		20	350	1.54E-02	30	5.13E-04

mg/m3 = (ppm) * (molecular weight) / (24.5 L @ 25 deg C) (Temp. Compensate)

T standard = 298 K

T Actual = 366.33 K (200 F)

V Standard = 24.5 L/mg mol

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	207	31.0	0.00	31.0	136	NA
CH ₄	28	1.59E-02	2.38E-03	0.00	2.38E-03	1.04E-02	NA
N ₂ O	265	7.94E-03	1.19E-03	0.00	1.19E-03	5.21E-03	NA
Total GHG (CO ₂ e)					31.4	138	NA

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit(s) ID No.:		EQUI 81					
Emission Unit(s) Name:		Standby Generator					
Stack/Vent Designation No.:		STRU 16					
Control Equipment:		None					
Engine Type:		☒ Reciprocating		☐ Turbine		☐ Other	
Engine is Used For:		☐ Non-Emergency Use		☒ Emergency Use Only			
Rated Electrical Output		100 kw					
Rated Mechanical Output		158 HP@		4-Stroke 1800 RPM			
		0.3412 MMBtu/hr					
						1 kw = 0.00	
Fuel:		Natural Gas		@ 2000 gr Sulfur/MMcf			
		1020 Btu/ft3		(Test Value)			
Fuel Consumption Rate:		1260 cf/hr					
Calculations Summary:							
Hours of Operation		500 hrs/year					
Pollutant	Emission Factor	Emission Rate	Uncontrolled	Pollution Control	Limited		
	(lbs/MMBtu)	(lbs/hr)	Emissions	Efficiency	Emissions		
			(tons/yr)	(%)	(tons/yr)		
PM	0.0194	2.49E-02	6.24E-03	0%	6.24E-03		
PM10	0.0194	2.49E-02	6.24E-03	0%	6.24E-03		
PM2.5	0.0194	2.49E-02	6.24E-03	0%	6.24E-03		
SOX	0.00059	7.56E-04	1.89E-04	0%	1.89E-04		
NOX	2.27	2.92E+00	7.29E-01	0%	7.29E-01		
VOC	0.0296	3.80E-02	9.51E-03	0%	9.51E-03		
CO	3.72	4.78	1.20	0%	1.20		
Lead	Negligible	na	na	na	na		
¹ Emission factors are from AP-42, Section 3.2, "Natural Gas-fired Reciprocating Engines", Table 3.2-3 (7/00).							
The emission factors are for a 4-stroke rich-burn engine because the generator has an air-to-fuel ratio of 16.9:1 (16:1 is typical for a rich-burn engine according to AP-42, Section 3.2. PM and PM10 emission factors are both equal to condensable PM10 plus filterable PM.							
Operating Limitations, if applicable:							
References: EPA Guidance memo 9/6/95 (500 hours per year).							
Natural Gas HAPs							
Pollutant	Emission Factor (lb/10 ⁶ scf) ²	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Limited Emissions (tons/yr)			
Benzene (71-43-2)	2.10E-03	2.65E-06	6.62E-07	6.62E-07			
Dichlorobenzene (25321-22-6)	1.20E-03	1.51E-06	3.78E-07	3.78E-07			
Formaldehyde (50-00-0)	7.50E-02	9.45E-05	2.36E-05	2.36E-05			
Hexane (110-54-3)	1.80E+00	2.27E-03	5.67E-04	5.67E-04			
Naphthalene (91-20-3) ³	6.10E-04	7.69E-07	1.92E-07	1.92E-07			
Toluene (108-88-3)	3.40E-03	4.28E-06	1.07E-06	1.07E-06			
Polycyclic Organic Matter (POM) ⁴	8.64E-05	1.09E-07	2.72E-08	2.72E-08			
Arsenic (7440-38-2)	2.00E-04	2.52E-07	6.30E-08	6.30E-08			
Beryllium (7440-41-7)	1.20E-05	1.51E-08	3.78E-09	3.78E-09			
Cadmium (7440-43-9)	1.10E-03	1.39E-06	3.47E-07	3.47E-07			
Chromium (7440-47-3)	1.40E-03	1.76E-06	4.41E-07	4.41E-07			
Cobalt (7440-48-4)	8.40E-05	1.06E-07	2.65E-08	2.65E-08			
Manganese (7439-96-5)	3.80E-04	4.79E-07	1.20E-07	1.20E-07			
Mercury (7439-97-6)	2.60E-04	3.28E-07	8.19E-08	8.19E-08			
Nickel (7440-02-0)	2.10E-03	2.65E-06	6.62E-07	6.62E-07			
Selenium (7782-49-2)	2.40E-05	3.02E-08	7.56E-09	7.56E-09			
Totals	1.89	2.38E-03	5.95E-04	5.95E-04			
² All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).							
³ Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.							
⁴ Total POM emission factor is equal to the sum of the individual POM compounds.							
Calculations Summary - Greenhouse Gases:							
Pollutant	GWP	Emission Factor	Emissions	Pollution Control Efficiency	Uncontrolled Emission Rate	Limited Controlled Emissions	
		(lbs/MMBtu) ^d	(lb/hr)	(%)	(tons/yr)	(tons/yr)	
CO ₂	1	117	150	0.00	658	658	
CH ₄	28	2.20E-03	2.83E-03	0.00	1.24E-02	1.24E-02	
N ₂ O	265	2.20E-04	2.83E-04	0.00	1.24E-03	1.24E-03	
Total GHG (CO ₂ e)			150		659	659	

Emission Unit EQUI 90 - KC13 Unit
Stack/Vent Designation Number: STRU 68
Maximum Rated Capacity: 2.5 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** No secondary fuel
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0024 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	1.86E-02	8.14E-02	0.00	8.14E-02
PM ₁₀	7.60	1.86E-02	8.14E-02	0.00	8.14E-02
PM _{2.5}	7.60	1.86E-02	8.14E-02	0.00	8.14E-02
SO _x	0.60	1.47E-03	6.43E-03	0.00	6.43E-03
NO _x	100	2.45E-01	1.07E+00	0.00	1.07E+00
VOC	5.50	1.35E-02	5.89E-02	0.00	5.89E-02
CO	84	2.05E-01	9.00E-01	0.00	9.00E-01
Lead	5.00E-04	1.22E-06	5.36E-06	0.00	5.36E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	5.14E-06	2.25E-05	0.0	2.25E-05
Dichlorobenzene (25321-22-6)	1.20E-03	2.94E-06	1.29E-05	0.0	1.29E-05
Formaldehyde (50-00-0)	7.50E-02	1.83E-04	8.04E-04	0.0	8.04E-04
Hexane (110-54-3)	1.80E+00	4.40E-03	1.93E-02	0.0	1.93E-02
Naphthalene (91-20-3) ^b	6.10E-04	1.49E-06	6.54E-06	0.0	6.54E-06
Toluene (108-88-3)	3.40E-03	8.32E-06	3.64E-05	0.0	3.64E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.11E-07	9.26E-07	0.0	9.26E-07
Arsenic (7440-38-2)	2.00E-04	4.89E-07	2.14E-06	0.0	2.14E-06
Beryllium (7440-41-7)	1.20E-05	2.94E-08	1.29E-07	0.0	1.29E-07
Cadmium (7440-43-9)	1.10E-03	2.69E-06	1.18E-05	0.0	1.18E-05
Chromium (7440-47-3)	1.40E-03	3.42E-06	1.50E-05	0.0	1.50E-05
Cobalt (7440-48-4)	8.40E-05	2.05E-07	9.00E-07	0.0	9.00E-07
Manganese (7439-96-5)	3.80E-04	9.30E-07	4.07E-06	0.0	4.07E-06
Mercury (7439-97-6)	2.60E-04	6.36E-07	2.79E-06	0.0	2.79E-06
Nickel (7440-02-0)	2.10E-03	5.14E-06	2.25E-05	0.0	2.25E-05
Selenium (7782-49-2)	2.40E-05	5.87E-08	2.57E-07	0.0	2.57E-07
Totals		4.62E-03	2.02E-02		2.02E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	292	0.00	1,277	1,277
CH ₄	28	2.20E-03	5.50E-03	0.00	2.41E-02	2.41E-02
N ₂ O	265	2.20E-04	5.50E-04	0.00	2.41E-03	2.41E-03
Total GHG (CO ₂ e)			292		1,279	1,279

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 91 - MP4
 Stack/Vent Designation Number: STRU 69
 Maximum Rated Capacity: 2.37 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00232 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	1.77E-02	7.73E-02	0.00	7.73E-02
PM ₁₀	7.60	1.77E-02	7.73E-02	0.00	7.73E-02
PM _{2.5}	7.60	1.77E-02	7.73E-02	0.00	7.73E-02
SO _x	0.60	1.39E-03	6.11E-03	0.00	6.11E-03
NO _x	100	2.32E-01	1.02E+00	0.00	1.02E+00
VOC	5.50	1.28E-02	5.60E-02	0.00	5.60E-02
CO	84	1.95E-01	8.55E-01	0.00	8.55E-01
Lead	5.00E-04	1.16E-06	5.09E-06	0.00	5.09E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	4.88E-06	2.14E-05	0.0	2.14E-05
Dichlorobenzene (25321-22-6)	1.20E-03	2.79E-06	1.22E-05	0.0	1.22E-05
Formaldehyde (50-00-0)	7.50E-02	1.74E-04	7.63E-04	0.0	7.63E-04
Hexane (110-54-3)	1.80E+00	4.18E-03	1.83E-02	0.0	1.83E-02
Naphthalene (91-20-3) ^b	6.10E-04	1.42E-06	6.21E-06	0.0	6.21E-06
Toluene (108-88-3)	3.40E-03	7.90E-06	3.46E-05	0.0	3.46E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.01E-07	8.79E-07	0.0	8.79E-07
Arsenic (7440-38-2)	2.00E-04	4.65E-07	2.04E-06	0.0	2.04E-06
Beryllium (7440-41-7)	1.20E-05	2.79E-08	1.22E-07	0.0	1.22E-07
Cadmium (7440-43-9)	1.10E-03	2.56E-06	1.12E-05	0.0	1.12E-05
Chromium (7440-47-3)	1.40E-03	3.25E-06	1.42E-05	0.0	1.42E-05
Cobalt (7440-48-4)	8.40E-05	1.95E-07	8.55E-07	0.0	8.55E-07
Manganese (7439-96-5)	3.80E-04	8.83E-07	3.87E-06	0.0	3.87E-06
Mercury (7439-97-6)	2.60E-04	6.04E-07	2.65E-06	0.0	2.65E-06
Nickel (7440-02-0)	2.10E-03	4.88E-06	2.14E-05	0.0	2.14E-05
Selenium (7782-49-2)	2.40E-05	5.58E-08	2.44E-07	0.0	2.44E-07
Totals		4.39E-03	1.92E-02		1.92E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	277	0.00	1,213	1,213
CH ₄	28	2.20E-03	5.22E-03	0.00	2.29E-02	2.29E-02
N ₂ O	265	2.20E-04	5.22E-04	0.00	2.29E-03	2.29E-03
Total GHG (CO ₂ e)			277		1,215	1,215

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 92 - Dehair MAU-KC146-2
Stack/Vent Designation Number: STRU 70
Maximum Rated Capacity: 4.0 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** No secondary fuel
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.004 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	2.98E-02	1.31E-01	0.00	1.31E-01
PM ₁₀	7.60	2.98E-02	1.31E-01	0.00	1.31E-01
PM _{2.5}	7.60	2.98E-02	1.31E-01	0.00	1.31E-01
SO _x	0.60	2.35E-03	1.03E-02	0.00	1.03E-02
NO _x	100	3.92E-01	1.72E+00	0.00	1.72E+00
VOC	5.50	2.16E-02	9.45E-02	0.00	9.45E-02
CO	84	3.29E-01	1.44E+00	0.00	1.44E+00
Lead	5.00E-04	1.96E-06	8.59E-06	0.00	8.59E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	8.24E-06	3.61E-05	0.0	3.61E-05
Dichlorobenzene (25321-22-6)	1.20E-03	4.71E-06	2.06E-05	0.0	2.06E-05
Formaldehyde (50-00-0)	7.50E-02	2.94E-04	1.29E-03	0.0	1.29E-03
Hexane (110-54-3)	1.80E+00	7.06E-03	3.09E-02	0.0	3.09E-02
Naphthalene (91-20-3) ^b	6.10E-04	2.39E-06	1.05E-05	0.0	1.05E-05
Toluene (108-88-3)	3.40E-03	1.33E-05	5.84E-05	0.0	5.84E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.39E-07	1.48E-06	0.0	1.48E-06
Arsenic (7440-38-2)	2.00E-04	7.84E-07	3.44E-06	0.0	3.44E-06
Beryllium (7440-41-7)	1.20E-05	4.71E-08	2.06E-07	0.0	2.06E-07
Cadmium (7440-43-9)	1.10E-03	4.31E-06	1.89E-05	0.0	1.89E-05
Chromium (7440-47-3)	1.40E-03	5.49E-06	2.40E-05	0.0	2.40E-05
Cobalt (7440-48-4)	8.40E-05	3.29E-07	1.44E-06	0.0	1.44E-06
Manganese (7439-96-5)	3.80E-04	1.49E-06	6.53E-06	0.0	6.53E-06
Mercury (7439-97-6)	2.60E-04	1.02E-06	4.47E-06	0.0	4.47E-06
Nickel (7440-02-0)	2.10E-03	8.24E-06	3.61E-05	0.0	3.61E-05
Selenium (7782-49-2)	2.40E-05	9.41E-08	4.12E-07	0.0	4.12E-07
Totals		7.40E-03	3.24E-02		3.24E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	468	0.00	2,048	2,048
CH ₄	28	2.20E-03	8.82E-03	0.00	3.86E-02	3.86E-02
N ₂ O	265	2.20E-04	8.82E-04	0.00	3.86E-03	3.86E-03
Total GHG (CO ₂ e)			468		2,050	2,050

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 93 - MAU #4
Stack/Vent Designation Number: STRU 71
Maximum Rated Capacity: 3.39 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00332 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	2.53E-02	1.11E-01	0.00	1.11E-01
PM ₁₀	7.60	2.53E-02	1.11E-01	0.00	1.11E-01
PM _{2.5}	7.60	2.53E-02	1.11E-01	0.00	1.11E-01
SO _x	0.60	1.99E-03	8.73E-03	0.00	8.73E-03
NO _x	100	3.32E-01	1.46E+00	0.00	1.46E+00
VOC	5.50	1.83E-02	8.01E-02	0.00	8.01E-02
CO	84	2.79E-01	1.22E+00	0.00	1.22E+00
Lead	5.00E-04	1.66E-06	7.28E-06	0.00	7.28E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	6.98E-06	3.06E-05	0.0	3.06E-05
Dichlorobenzene (25321-22-6)	1.20E-03	3.99E-06	1.75E-05	0.0	1.75E-05
Formaldehyde (50-00-0)	7.50E-02	2.49E-04	1.09E-03	0.0	1.09E-03
Hexane (110-54-3)	1.80E+00	5.98E-03	2.62E-02	0.0	2.62E-02
Naphthalene (91-20-3) ^b	6.10E-04	2.03E-06	8.88E-06	0.0	8.88E-06
Toluene (108-88-3)	3.40E-03	1.13E-05	4.95E-05	0.0	4.95E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.87E-07	1.26E-06	0.0	1.26E-06
Arsenic (7440-38-2)	2.00E-04	6.65E-07	2.91E-06	0.0	2.91E-06
Beryllium (7440-41-7)	1.20E-05	3.99E-08	1.75E-07	0.0	1.75E-07
Cadmium (7440-43-9)	1.10E-03	3.66E-06	1.60E-05	0.0	1.60E-05
Chromium (7440-47-3)	1.40E-03	4.65E-06	2.04E-05	0.0	2.04E-05
Cobalt (7440-48-4)	8.40E-05	2.79E-07	1.22E-06	0.0	1.22E-06
Manganese (7439-96-5)	3.80E-04	1.26E-06	5.53E-06	0.0	5.53E-06
Mercury (7439-97-6)	2.60E-04	8.64E-07	3.78E-06	0.0	3.78E-06
Nickel (7440-02-0)	2.10E-03	6.98E-06	3.06E-05	0.0	3.06E-05
Selenium (7782-49-2)	2.40E-05	7.98E-08	3.49E-07	0.0	3.49E-07
Totals		6.27E-03	2.75E-02		2.75E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	396	0.00	1,736	1,736
CH ₄	28	2.20E-03	7.47E-03	0.00	3.27E-02	3.27E-02
N ₂ O	265	2.20E-04	7.47E-04	0.00	3.27E-03	3.27E-03
Total GHG (CO ₂ e)			397		1,737	1,737

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 94 Rendering Makeup air heater #2
Stack/Vent Designation Number: STRU 20
Maximum Rated Capacity: 2.17 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00213 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	1.62E-02	7.08E-02	0.00	7.08E-02
PM ₁₀	7.60	1.62E-02	7.08E-02	0.00	7.08E-02
PM _{2.5}	7.60	1.62E-02	7.08E-02	0.00	7.08E-02
SO _x	0.60	1.28E-03	5.59E-03	0.00	5.59E-03
NO _x	100	2.13E-01	9.32E-01	0.00	9.32E-01
VOC	5.50	1.17E-02	5.13E-02	0.00	5.13E-02
CO	84	1.79E-01	7.83E-01	0.00	7.83E-01
Lead	5.00E-04	1.06E-06	4.66E-06	0.00	4.66E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	4.47E-06	1.96E-05	0.00	1.96E-05
Dichlorobenzene (25321-22-6)	1.20E-03	2.55E-06	1.12E-05	0.00	1.12E-05
Formaldehyde (50-00-0)	7.50E-02	1.60E-04	6.99E-04	0.00	6.99E-04
Hexane (110-54-3)	1.80E+00	3.83E-03	1.68E-02	0.00	1.68E-02
Naphthalene (91-20-3) ^b	6.10E-04	1.30E-06	5.68E-06	0.00	5.68E-06
Toluene (108-88-3)	3.40E-03	7.23E-06	3.17E-05	0.00	3.17E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.84E-07	8.05E-07	0.00	8.05E-07
Arsenic (7440-38-2)	2.00E-04	4.25E-07	1.86E-06	0.00	1.86E-06
Beryllium (7440-41-7)	1.20E-05	2.55E-08	1.12E-07	0.00	1.12E-07
Cadmium (7440-43-9)	1.10E-03	2.34E-06	1.03E-05	0.00	1.03E-05
Chromium (7440-47-3)	1.40E-03	2.98E-06	1.30E-05	0.00	1.30E-05
Cobalt (7440-48-4)	8.40E-05	1.79E-07	7.83E-07	0.00	7.83E-07
Manganese (7439-96-5)	3.80E-04	8.08E-07	3.54E-06	0.00	3.54E-06
Mercury (7439-97-6)	2.60E-04	5.53E-07	2.42E-06	0.00	2.42E-06
Nickel (7440-02-0)	2.10E-03	4.47E-06	1.96E-05	0.00	1.96E-05
Selenium (7782-49-2)	2.40E-05	5.11E-08	2.24E-07	0.00	2.24E-07
Totals		4.02E-03	1.76E-02		1.76E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	254	0.00	1,111	1,111
CH ₄	28	2.20E-03	4.78E-03	0.00	2.10E-02	2.10E-02
N ₂ O	265	2.20E-04	4.78E-04	0.00	2.10E-03	2.10E-03
Total GHG (CO ₂ e)			254		1,112	1,112

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 95 - Old Boiler Room MAU
 Stack/Vent Designation Number: STRU 72
 Maximum Rated Boiler Capacity: 5.62 million BTU/hr
 Primary Fuel Type: Natural Gas
 Fuel Parameters, if applicable: % Sulfur: NA % Ash: NA
 Heat Value: 1020 BTU/cf
 Fuel Consumption Rate: 0.00551 (MMcf/hr)
 Calculation Summary:

Pollutant	Uncontrolled Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	4.18E-02	1.83E-01	0%	1.83E-01
PM10	7.60	4.18E-02	1.83E-01	0%	1.83E-01
PM2.5	7.60	4.18E-02	1.83E-01	0%	1.83E-01
SOx	0.6	3.30E-03	1.45E-02	0%	1.45E-02
NOx	100	5.51E-01	2.41E+00	0%	2.41E+00
VOC	5.5	3.03E-02	1.33E-01	0%	1.33E-01
CO	84	4.62E-01	2.03E+00	0%	2.03E+00
Lead	5.00E-04	2.75E-06	1.21E-05	0%	1.21E-05

Emission rates are based on AP-42 Section 1.4, Natural Gas Combustion (7/98).

Backup Fuel Type: _____
 Fuel Parameters (if available): % Sulfur: _____ % Ash: _____
 Heat Value: _____ Btu/cf
 Fuel Consumption Rate: _____ (cf/hr)

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)
PM	na	na	na	na	na	na
PM10	na	na	na	na	na	na
PM2.5	na	na	na	na	na	na
SOx	na	na	na	na	na	na
NOx	na	na	na	na	na	na
VOC	na	na	na	na	na	na
CO	na	na	na	na	na	na
Lead	na	na	na	na	na	na

Natural Gas HAPs

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.16E-05	5.06E-05	5.06E-05
Dichlorobenzene (25321-22-6)	1.20E-03	6.61E-06	2.89E-05	2.89E-05
Formaldehyde (50-00-0)	7.50E-02	4.13E-04	1.81E-03	1.81E-03
Hexane (110-54-3)	1.80E+00	9.91E-03	4.34E-02	4.34E-02
Naphthalene (91-20-3) ^b	6.10E-04	3.36E-06	1.47E-05	1.47E-05
Toluene (108-88-3)	3.40E-03	1.87E-05	8.20E-05	8.20E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	4.76E-07	2.08E-06	2.08E-06
Arsenic (7440-38-2)	2.00E-04	1.10E-06	4.82E-06	4.82E-06
Beryllium (7440-41-7)	1.20E-05	6.61E-08	2.89E-07	2.89E-07
Cadmium (7440-43-9)	1.10E-03	6.06E-06	2.65E-05	2.65E-05
Chromium (7440-47-3)	1.40E-03	7.71E-06	3.38E-05	3.38E-05
Cobalt (7440-48-4)	8.40E-05	4.62E-07	2.03E-06	2.03E-06
Manganese (7439-96-5)	3.80E-04	2.09E-06	9.16E-06	9.16E-06
Mercury (7439-97-6)	2.60E-04	1.43E-06	6.27E-06	6.27E-06
Nickel (7440-02-0)	2.10E-03	1.16E-05	5.06E-05	5.06E-05
Selenium (7782-49-2)	2.40E-05	1.32E-07	5.79E-07	5.79E-07
Totals	1.89E+00	1.04E-02	4.55E-02	4.55E-02

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	117	656	0.00	2,875	2,875
CH ₄	28	2.20E-03	1.24E-02	0.00	5.42E-02	5.42E-02
N ₂ O	265	2.20E-04	1.24E-03	0.00	5.42E-03	5.42E-03
Total GHG (CO₂e)			657		2878	2,878

Emission Unit Identification Number:

EQUI 96 - Hog Singer #1

Stack/Vent Designation Number:

STRU 56

Maximum Rated Boiler Capacity:

8 million BTU/hr

Primary Fuel Type:

Natural Gas

Fuel Parameters, if applicable:

% Sulfur: NA

% Ash: NA

Heat Value:

1020 BTU/cf

Fuel Consumption Rate:

0.00784 (MMcf/hr)

Calculation Summary:

Pollutant	Uncontrolled Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	5.96E-02	2.61E-01	0%	2.61E-01
PM10	7.60	5.96E-02	2.61E-01	0%	2.61E-01
PM2.5	7.60	5.96E-02	2.61E-01	0%	2.61E-01
SOx	0.6	4.71E-03	2.06E-02	0%	2.06E-02
NOx	100	7.84E-01	3.44E+00	0%	3.44E+00
VOC	5.5	4.31E-02	1.89E-01	0%	1.89E-01
CO	84	6.59E-01	2.89E+00	0%	2.89E+00
Lead	5.00E-04	3.92E-06	1.72E-05	0%	1.72E-05

Emission rates are based on AP-42 Section 1.4, Natural Gas Combustion (7/98)

Natural Gas HAPs

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.65E-05	7.21E-05	7.21E-05
Dichlorobenzene (25321-22-6)	1.20E-03	9.41E-06	4.12E-05	4.12E-05
Formaldehyde (50-00-0)	7.50E-02	5.88E-04	2.58E-03	2.58E-03
Hexane (110-54-3)	1.80E+00	1.41E-02	6.18E-02	6.18E-02
Naphthalene (91-20-3) ^b	6.10E-04	4.78E-06	2.10E-05	2.10E-05
Toluene (108-88-3)	3.40E-03	2.67E-05	1.17E-04	1.17E-04
Polycyclic Organic Matter (POM) ^c	8.64E-05	6.78E-07	2.97E-06	2.97E-06
Arsenic (7440-38-2)	2.00E-04	1.57E-06	6.87E-06	6.87E-06
Beryllium (7440-41-7)	1.20E-05	9.41E-08	4.12E-07	4.12E-07
Cadmium (7440-43-9)	1.10E-03	8.63E-06	3.78E-05	3.78E-05
Chromium (7440-47-3)	1.40E-03	1.10E-05	4.81E-05	4.81E-05
Cobalt (7440-48-4)	8.40E-05	6.59E-07	2.89E-06	2.89E-06
Manganese (7439-96-5)	3.80E-04	2.98E-06	1.31E-05	1.31E-05
Mercury (7439-97-6)	2.60E-04	2.04E-06	8.93E-06	8.93E-06
Nickel (7440-02-0)	2.10E-03	1.65E-05	7.21E-05	7.21E-05
Selenium (7782-49-2)	2.40E-05	1.88E-07	8.24E-07	8.24E-07
Totals	1.89	1.48E-02	6.48E-02	6.48E-02

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	935	0.00	4,096	4,096
CH ₄	28	2.20E-03	1.76E-02	0.00	7.72E-02	7.72E-02
N ₂ O	265	2.20E-04	1.76E-03	0.00	7.72E-03	7.72E-03
Total GHG (CO ₂ e)			936		4100	4,100

Emission Unit EQUI 98 - NG Space Heater - Pretreatment #1
Stack/Vent Designation Number: STRU 73
Maximum Rated Capacity: 2 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0020 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	1.49E-02	6.53E-02	0.00	6.53E-02
PM ₁₀	7.60	1.49E-02	6.53E-02	0.00	6.53E-02
PM _{2.5}	7.60	1.49E-02	6.53E-02	0.00	6.53E-02
SO _x	0.60	1.18E-03	5.15E-03	0.00	5.15E-03
NO _x	100	1.96E-01	8.59E-01	0.00	8.59E-01
VOC	5.50	1.08E-02	4.72E-02	0.00	4.72E-02
CO	84	1.65E-01	7.21E-01	0.00	7.21E-01
Lead	5.00E-04	9.80E-07	4.29E-06	0.00	4.29E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	4.12E-06	1.80E-05	0.0	1.80E-05
Dichlorobenzene (25321-22-6)	1.20E-03	2.35E-06	1.03E-05	0.0	1.03E-05
Formaldehyde (50-00-0)	7.50E-02	1.47E-04	6.44E-04	0.0	6.44E-04
Hexane (110-54-3)	1.80E+00	3.53E-03	1.55E-02	0.0	1.55E-02
Naphthalene (91-20-3) ^b	6.10E-04	1.20E-06	5.24E-06	0.0	5.24E-06
Toluene (108-88-3)	3.40E-03	6.67E-06	2.92E-05	0.0	2.92E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.69E-07	7.42E-07	0.0	7.42E-07
Arsenic (7440-38-2)	2.00E-04	3.92E-07	1.72E-06	0.0	1.72E-06
Beryllium (7440-41-7)	1.20E-05	2.35E-08	1.03E-07	0.0	1.03E-07
Cadmium (7440-43-9)	1.10E-03	2.16E-06	9.45E-06	0.0	9.45E-06
Chromium (7440-47-3)	1.40E-03	2.75E-06	1.20E-05	0.0	1.20E-05
Cobalt (7440-48-4)	8.40E-05	1.65E-07	7.21E-07	0.0	7.21E-07
Manganese (7439-96-5)	3.80E-04	7.45E-07	3.26E-06	0.0	3.26E-06
Mercury (7439-97-6)	2.60E-04	5.10E-07	2.23E-06	0.0	2.23E-06
Nickel (7440-02-0)	2.10E-03	4.12E-06	1.80E-05	0.0	1.80E-05
Selenium (7782-49-2)	2.40E-05	4.71E-08	2.06E-07	0.0	2.06E-07
Totals		3.70E-03	1.62E-02		1.62E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	234	0.00	1,024	1,024
CH ₄	28	2.20E-03	4.41E-03	0.00	1.93E-02	1.93E-02
N ₂ O	265	2.20E-04	4.41E-04	0.00	1.93E-03	1.93E-03
Total GHG (CO ₂ e)			234		1,025	1,025

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 99 KC-9 Makeup air heater
 Stack/Vent Designation Number: STRU 17
 Maximum Rated Capacity: 4.88 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00479 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	3.64E-02	1.59E-01	0.00	1.59E-01
PM ₁₀	7.60	3.64E-02	1.59E-01	0.00	1.59E-01
PM _{2.5}	7.60	3.64E-02	1.59E-01	0.00	1.59E-01
SO _x	0.60	2.87E-03	1.26E-02	0.00	1.26E-02
NO _x	100	4.79E-01	2.10E+00	0.00	2.10E+00
VOC	5.50	2.63E-02	1.15E-01	0.00	1.15E-01
CO	84	4.02E-01	1.76E+00	0.00	1.76E+00
Lead	5.00E-04	2.39E-06	1.05E-05	0.00	1.05E-05

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.01E-05	4.40E-05	0.0	4.40E-05
Dichlorobenzene (25321-22-6)	1.20E-03	5.74E-06	2.52E-05	0.0	2.52E-05
Formaldehyde (50-00-0)	7.50E-02	3.59E-04	1.57E-03	0.0	1.57E-03
Hexane (110-54-3)	1.80E+00	8.62E-03	3.77E-02	0.0	3.77E-02
Naphthalene (91-20-3) ^b	6.10E-04	2.92E-06	1.28E-05	0.0	1.28E-05
Toluene (108-88-3)	3.40E-03	1.63E-05	7.13E-05	0.0	7.13E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	4.14E-07	1.81E-06	0.0	1.81E-06
Arsenic (7440-38-2)	2.00E-04	9.57E-07	4.19E-06	0.0	4.19E-06
Beryllium (7440-41-7)	1.20E-05	5.74E-08	2.52E-07	0.0	2.52E-07
Cadmium (7440-43-9)	1.10E-03	5.27E-06	2.31E-05	0.0	2.31E-05
Chromium (7440-47-3)	1.40E-03	6.70E-06	2.94E-05	0.0	2.94E-05
Cobalt (7440-48-4)	8.40E-05	4.02E-07	1.76E-06	0.0	1.76E-06
Manganese (7439-96-5)	3.80E-04	1.82E-06	7.97E-06	0.0	7.97E-06
Mercury (7439-97-6)	2.60E-04	1.24E-06	5.45E-06	0.0	5.45E-06
Nickel (7440-02-0)	2.10E-03	1.01E-05	4.40E-05	0.0	4.40E-05
Selenium (7782-49-2)	2.40E-05	1.15E-07	5.03E-07	0.0	5.03E-07
Totals		9.04E-03	3.96E-02		3.96E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	571	0.00	2,500	2,500
CH ₄	28	2.20E-03	1.08E-02	0.00	4.72E-02	4.72E-02
N ₂ O	265	2.20E-04	1.08E-03	0.00	4.72E-03	4.72E-03
Total GHG (CO ₂ e)			571		2,503	2,503

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 100 - Rendering MAU
Stack/Vent Designation Number: STRU 19
Maximum Rated Capacity: 3.03 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** No secondary fuel
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00297 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
PM	7.60	2.26E-02	9.89E-02	0.00	2.26E-02	9.89E-02
PM ₁₀	7.60	2.26E-02	9.89E-02	0.00	2.26E-02	9.89E-02
PM _{2.5}	7.60	2.26E-02	9.89E-02	0.00	2.26E-02	9.89E-02
SO _x	0.60	1.78E-03	7.80E-03	0.00	1.78E-03	7.80E-03
NO _x	100	2.97E-01	1.30E+00	0.00	2.97E-01	1.30E+00
VOC	5.50	1.63E-02	7.15E-02	0.00	1.63E-02	7.15E-02
CO	84	2.49E-01	1.09E+00	0.00	2.49E-01	1.09E+00
Lead	5.00E-04	1.48E-06	6.50E-06	0.00	1.48E-06	6.50E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	6.24E-06	2.73E-05	0.0	6.24E-06	2.73E-05
Dichlorobenzene (25321-22-6)	1.20E-03	3.56E-06	1.56E-05	0.0	3.56E-06	1.56E-05
Formaldehyde (50-00-0)	7.50E-02	2.23E-04	9.76E-04	0.0	2.23E-04	9.76E-04
Hexane (110-54-3)	1.80E+00	5.35E-03	2.34E-02	0.0	5.35E-03	2.34E-02
Naphthalene (91-20-3) ^b	6.10E-04	1.81E-06	7.93E-06	0.0	1.81E-06	7.93E-06
Toluene (108-88-3)	3.40E-03	1.01E-05	4.42E-05	0.0	1.01E-05	4.42E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.57E-07	1.12E-06	0.0	2.57E-07	1.12E-06
Arsenic (7440-38-2)	2.00E-04	5.94E-07	2.60E-06	0.0	5.94E-07	2.60E-06
Beryllium (7440-41-7)	1.20E-05	3.56E-08	1.56E-07	0.0	3.56E-08	1.56E-07
Cadmium (7440-43-9)	1.10E-03	3.27E-06	1.43E-05	0.0	3.27E-06	1.43E-05
Chromium (7440-47-3)	1.40E-03	4.16E-06	1.82E-05	0.0	4.16E-06	1.82E-05
Cobalt (7440-48-4)	8.40E-05	2.49E-07	1.09E-06	0.0	2.49E-07	1.09E-06
Manganese (7439-96-5)	3.80E-04	1.13E-06	4.94E-06	0.0	1.13E-06	4.94E-06
Mercury (7439-97-6)	2.60E-04	7.72E-07	3.38E-06	0.0	7.72E-07	3.38E-06
Nickel (7440-02-0)	2.10E-03	6.24E-06	2.73E-05	0.0	6.24E-06	2.73E-05
Selenium (7782-49-2)	2.40E-05	7.13E-08	3.12E-07	0.0	7.13E-08	3.12E-07
Totals		5.60E-03	2.45E-02		5.60E-03	2.45E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	354	0.00	1,551	1,551
CH ₄	28	2.20E-03	6.68E-03	0.00	2.92E-02	2.92E-02
N ₂ O	265	2.20E-04	6.68E-04	0.00	2.92E-03	2.92E-03
Total GHG (CO ₂ e)			354		1,552	1,552

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 101- Hog Hair Hydrolyzer
 Stack/Vent Designation Number: STRU 23
 Pollution Control Equipment Identification Number(s): TREA 33 (Packed Bed Adsorption Column), TREA 23 (RTO)

Maximum Capacity: 2 ton/hr dried hair product

Calculations Summary:

Pollutant	Emission Factor (lb/msf)	Emission Rate (lb/hr)	Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency ² (%)	Controlled Emissions (lb/hr) ¹	Controlled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
PM	na	4.43	19.4	94%	0.25	1.11	1.11
PM ₁₀	na	29.9	131	94%	1.82	7.97	7.97
PM _{2.5}	na	29.7	130	94%	1.81	7.92	7.92
SO _x	na	na	na	na	na	na	na
NO _x	na	na	na	na	na	na	na
VOC	na	3.18	13.9	97%	0.10	0.42	0.42
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na

1 - Maximum Controlled Emissions are based on STRU 23 stack limits: 3.00 lb/hr for PM; 18.00 lb/hr for PM₁₀; 18.00 lb/hr for PM_{2.5}; and 0.99 lb/hr for VOCs.

EQUI 71 along with EQUI 14, EQUI 101 and EQUI 113 vent to STRU 23. EQUIs 14 and 113 have published emission factors. Because published emission factors for EQUI 71 and 101 do not exist, they were developed by subtracting EQUI 14 and EQUI 113 emissions from the stack limits and attributing the remaining emissions to EQUIs 71 and 101 based on raw material throughput.

2 - Control efficiencies are based on Minn. R. 7011.0070.

PM control efficiency for packed gas adsorption column is 85%, and thermal oxidizer is 62%

PM₁₀ and PM_{2.5} control efficiency for packed gas adsorption column is 84%, and thermal oxidizer is 62%

There is no listed control efficiency for VOCs for packed

Raw Material Throughput Comparison			
Process	Dry Product (lb/hr)	Raw Material (lb/hr) ¹	Fraction of Total
Blood Dryer	3,300	16,500	0.330
Rendering Operations	-	30,000	0.600
Hydrolyzer	-	3,500	0.070
Total	3,300	50,000	1.000

1. Estimate raw blood throughput based on 0.20 fraction normal solids

2. Ratio of the density of hog hair to dried bone and meat products - 35 lb/ft³ / 40 lb/ft³ = 0.875

Density of hog hair = 35 lb/ft³, 0.561 g/cm³

Density of dried bone and meat products = 40 lb/ft³, 0.64 g/cm³

Source: <http://www.hapman.com/resources/bulk-material-density-guide>

1- Assumed PM_{2.5} emission factor to be equal to PM₁₀ emission factor.

2- Control efficiencies based on Minn. R. 7011.0070

PM control efficiency for packed gas adsorption column is 85% and RTO is 62%.

PM₁₀ and PM_{2.5} control efficiency for packed gas adsorption column is 84% and RTO is 62%.

There is no listed control efficiency for VOCs for packed gas adsorption columns. The control for an RTO is 97%.

PM Control Efficiency for uncontrolled emission rate development. (Control efficiencies based on Minn. R. 7011.0070)

Packed gas adsorption column 85%

RTO 62%

Total 94.3%

PM₁₀/PM_{2.5} Control Efficiency for uncontrolled emission rate development. (Control efficiencies based on Minn. R. 7011.0070)

Packed gas adsorption column 84%

RTO 62%

Total 93.9%

Emission Unit EQUI 102 NG Space Heater - Hog Cut
Stack/Vent Designation Number: STRU 74
Maximum Rated Capacity: 4.00 million BTU/hr
Control Equipment: na
Fuel Paramaters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0039 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	2.98E-02	1.31E-01	0.00	1.31E-01
PM ₁₀	7.60	2.98E-02	1.31E-01	0.00	1.31E-01
PM _{2.5}	7.60	2.98E-02	1.31E-01	0.00	1.31E-01
SO _x	0.60	2.35E-03	1.03E-02	0.00	1.03E-02
NO _x	100	3.92E-01	1.72E+00	0.00	1.72E+00
VOC	5.50	2.16E-02	9.45E-02	0.00	9.45E-02
CO	84	3.29E-01	1.44E+00	0.00	1.44E+00
Lead	5.00E-04	1.96E-06	8.59E-06	0.00	8.59E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	8.24E-06	3.61E-05	0.0	3.61E-05
Dichlorobenzene (25321-22-6)	1.20E-03	4.71E-06	2.06E-05	0.0	2.06E-05
Formaldehyde (50-00-0)	7.50E-02	2.94E-04	1.29E-03	0.0	1.29E-03
Hexane (110-54-3)	1.80E+00	7.06E-03	3.09E-02	0.0	3.09E-02
Naphthalene (91-20-3) ^b	6.10E-04	2.39E-06	1.05E-05	0.0	1.05E-05
Toluene (108-88-3)	3.40E-03	1.33E-05	5.84E-05	0.0	5.84E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.39E-07	1.48E-06	0.0	1.48E-06
Arsenic (7440-38-2)	2.00E-04	7.84E-07	3.44E-06	0.0	3.44E-06
Beryllium (7440-41-7)	1.20E-05	4.71E-08	2.06E-07	0.0	2.06E-07
Cadmium (7440-43-9)	1.10E-03	4.31E-06	1.89E-05	0.0	1.89E-05
Chromium (7440-47-3)	1.40E-03	5.49E-06	2.40E-05	0.0	2.40E-05
Cobalt (7440-48-4)	8.40E-05	3.29E-07	1.44E-06	0.0	1.44E-06
Manganese (7439-96-5)	3.80E-04	1.49E-06	6.53E-06	0.0	6.53E-06
Mercury (7439-97-6)	2.60E-04	1.02E-06	4.47E-06	0.0	4.47E-06
Nickel (7440-02-0)	2.10E-03	8.24E-06	3.61E-05	0.0	3.61E-05
Selenium (7782-49-2)	2.40E-05	9.41E-08	4.12E-07	0.0	4.12E-07
Totals		7.40E-03	3.24E-02		3.24E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	468	0.00	2,048	2,048
CH ₄	28	2.20E-03	8.82E-03	0.00	3.86E-02	3.86E-02
N ₂ O	265	2.20E-04	8.82E-04	0.00	3.86E-03	3.86E-03
Total GHG (CO ₂ e)			468		2,050	2,050

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit		EQUI 104 - Dry Room #5 Desiccant Unit Conditioner #5-1				
Stack/Vent Designation Number:		STRU 76				
Maximum Rated Capacity:	2.37	million BTU/hr				
Control Equipment:	na					
Fuel Paramaters						
Fuel Type		Natural Gas	ONLY	No secondary fuel		
Heat Value:		1020	Btu/cf			
Fuel Consumption Rate:		0.00232	MMcf/hr			
Source of Emission Factors:	AP-42 Chapter 1.4 - 0.3-100	MMBtu/hr				
Calculations Summary:						
Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)	
PM	7.60	1.77E-02	7.74E-02	0.00	7.74E-02	
PM ₁₀	7.60	1.77E-02	7.74E-02	0.00	7.74E-02	
PM _{2.5}	7.60	1.77E-02	7.74E-02	0.00	7.74E-02	
SO _x	0.60	1.39E-03	6.11E-03	0.00	6.11E-03	
NO _x	100	2.32E-01	1.02E+00	0.00	1.02E+00	
VOC	5.50	1.28E-02	5.60E-02	0.00	5.60E-02	
CO	84	1.95E-01	8.55E-01	0.00	8.55E-01	
Lead	5.00E-04	1.16E-06	5.09E-06	0.00	5.09E-06	
Calculations Summary - HAPs:						
HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)	
Benzene (71-43-2)	2.10E-03	4.88E-06	2.14E-05	0.0	2.14E-05	
Dichlorobenzene (25321-22-6)	1.20E-03	2.79E-06	1.22E-05	0.0	1.22E-05	
Formaldehyde (50-00-0)	7.50E-02	1.74E-04	7.64E-04	0.0	7.64E-04	
Hexane (110-54-3)	1.80E+00	4.18E-03	1.83E-02	0.0	1.83E-02	
Naphthalene (91-20-3) ^b	6.10E-04	1.42E-06	6.21E-06	0.0	6.21E-06	
Toluene (108-88-3)	3.40E-03	7.90E-06	3.46E-05	0.0	3.46E-05	
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.01E-07	8.80E-07	0.0	8.80E-07	
Arsenic (7440-38-2)	2.00E-04	4.65E-07	2.04E-06	0.0	2.04E-06	
Beryllium (7440-41-7)	1.20E-05	2.79E-08	1.22E-07	0.0	1.22E-07	
Cadmium (7440-43-9)	1.10E-03	2.56E-06	1.12E-05	0.0	1.12E-05	
Chromium (7440-47-3)	1.40E-03	3.25E-06	1.43E-05	0.0	1.43E-05	
Cobalt (7440-48-4)	8.40E-05	1.95E-07	8.55E-07	0.0	8.55E-07	
Manganese (7439-96-5)	3.80E-04	8.83E-07	3.87E-06	0.0	3.87E-06	
Mercury (7439-97-6)	2.60E-04	6.04E-07	2.65E-06	0.0	2.65E-06	
Nickel (7440-02-0)	2.10E-03	4.88E-06	2.14E-05	0.0	2.14E-05	
Selenium (7782-49-2)	2.40E-05	5.58E-08	2.44E-07	0.0	2.44E-07	
Totals		4.39E-03	1.92E-02		1.92E-02	
^a All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).						
^b Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.						
^c Total POM emission factor is equal to the sum of the individual POM compounds.						
Calculations Summary - Greenhouse Gases:						
Pollutant	GWP	Emission Factor (lb/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	277	0.00	1,214	1,214
CH ₄	28	2.20E-03	5.23E-03	0.00	2.29E-02	2.29E-02
N ₂ O	265	2.20E-04	5.23E-04	0.00	2.29E-03	2.29E-03
Total GHG (CO ₂ e)			277		1,215	1,215
^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.						

Emission Unit		EQUI 106 - QPP Animal Welfare & Handling - MAU-2					
Stack/Vent Designation Number:		STRU 78					
Maximum Rated Capacity:	2.35	million BTU/hr					
Control Equipment:	na						
Fuel Paramaters							
Fuel Type		Natural Gas	ONLY	No secondary fuel			
Heat Value:		1020	Btu/cf				
Fuel Consumption Rate:		0.00231	MMcf/hr				
Source of Emission Factors:	AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr						
Calculations Summary:							
Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)		
PM	7.60	1.75E-02	7.68E-02	0.00	7.68E-02		
PM ₁₀	7.60	1.75E-02	7.68E-02	0.00	7.68E-02		
PM _{2.5}	7.60	1.75E-02	7.68E-02	0.00	7.68E-02		
SO _x	0.60	1.38E-03	6.06E-03	0.00	6.06E-03		
NO _x	100	2.31E-01	1.01E+00	0.00	1.01E+00		
VOC	5.50	1.27E-02	5.56E-02	0.00	5.56E-02		
CO	84	1.94E-01	8.49E-01	0.00	8.49E-01		
Lead	5.00E-04	1.15E-06	5.05E-06	0.00	5.05E-06		
Calculations Summary - HAPs:							
HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)		
Benzene (71-43-2)	2.10E-03	4.84E-06	2.12E-05	0.0	2.12E-05		
Dichlorobenzene (25321-22-6)	1.20E-03	2.77E-06	1.21E-05	0.0	1.21E-05		
Formaldehyde (50-00-0)	7.50E-02	1.73E-04	7.58E-04	0.0	7.58E-04		
Hexane (110-54-3)	1.80E+00	4.15E-03	1.82E-02	0.0	1.82E-02		
Naphthalene (91-20-3) ^b	6.10E-04	1.41E-06	6.16E-06	0.0	6.16E-06		
Toluene (108-88-3)	3.40E-03	7.84E-06	3.44E-05	0.0	3.44E-05		
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.99E-07	8.73E-07	0.0	8.73E-07		
Arsenic (7440-38-2)	2.00E-04	4.61E-07	2.02E-06	0.0	2.02E-06		
Beryllium (7440-41-7)	1.20E-05	2.77E-08	1.21E-07	0.0	1.21E-07		
Cadmium (7440-43-9)	1.10E-03	2.54E-06	1.11E-05	0.0	1.11E-05		
Chromium (7440-47-3)	1.40E-03	3.23E-06	1.41E-05	0.0	1.41E-05		
Cobalt (7440-48-4)	8.40E-05	1.94E-07	8.49E-07	0.0	8.49E-07		
Manganese (7439-96-5)	3.80E-04	8.77E-07	3.84E-06	0.0	3.84E-06		
Mercury (7439-97-6)	2.60E-04	6.00E-07	2.63E-06	0.0	2.63E-06		
Nickel (7440-02-0)	2.10E-03	4.84E-06	2.12E-05	0.0	2.12E-05		
Selenium (7782-49-2)	2.40E-05	5.54E-08	2.42E-07	0.0	2.42E-07		
Totals		4.35E-03	1.91E-02		1.91E-02		
^a All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).							
^b Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.							
^c Total POM emission factor is equal to the sum of the individual POM compounds.							
Calculations Summary - Greenhouse Gases:							
Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)	
CO ₂	1	117	275	0.00	1,205	1,205	
CH ₄	28	2.20E-03	5.19E-03	0.00	2.27E-02	2.27E-02	
N ₂ O	265	2.20E-04	5.19E-04	0.00	2.27E-03	2.27E-03	
Total GHG (CO ₂ e)			275		1,206	1,206	
^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.							

Emission Unit		EQUI 108 - Machinery RM MAU-3				
Stack/Vent Designation Number:		STRU 80				
Maximum Rated Capacity:	3.06	million BTU/hr				
Control Equipment:	na					
Fuel Paramaters						
Fuel Type		Natural Gas	ONLY	No secondary fuel		
Heat Value:		1020	Btu/cf			
Fuel Consumption Rate:		0.0030	MMcf/hr			
Source of Emission Factors:	AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr					
Calculations Summary:						
Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)	
PM	7.60	2.28E-02	1.00E-01	0.00	1.00E-01	
PM ₁₀	7.60	2.28E-02	1.00E-01	0.00	1.00E-01	
PM _{2.5}	7.60	2.28E-02	1.00E-01	0.00	1.00E-01	
SO _x	0.60	1.80E-03	7.89E-03	0.00	7.89E-03	
NO _x	100	3.00E-01	1.32E+00	0.00	1.32E+00	
VOC	5.50	1.65E-02	7.24E-02	0.00	7.24E-02	
CO	84	2.52E-01	1.11E+00	0.00	1.11E+00	
Lead	5.00E-04	1.50E-06	6.58E-06	0.00	6.58E-06	
Calculations Summary - HAPs:						
HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)	
Benzene (71-43-2)	2.10E-03	6.31E-06	2.76E-05	0.0	2.76E-05	
Dichlorobenzene (25321-22-6)	1.20E-03	3.60E-06	1.58E-05	0.0	1.58E-05	
Formaldehyde (50-00-0)	7.50E-02	2.25E-04	9.87E-04	0.0	9.87E-04	
Hexane (110-54-3)	1.80E+00	5.41E-03	2.37E-02	0.0	2.37E-02	
Naphthalene (91-20-3) ^b	6.10E-04	1.83E-06	8.03E-06	0.0	8.03E-06	
Toluene (108-88-3)	3.40E-03	1.02E-05	4.47E-05	0.0	4.47E-05	
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.60E-07	1.14E-06	0.0	1.14E-06	
Arsenic (7440-38-2)	2.00E-04	6.01E-07	2.63E-06	0.0	2.63E-06	
Beryllium (7440-41-7)	1.20E-05	3.60E-08	1.58E-07	0.0	1.58E-07	
Cadmium (7440-43-9)	1.10E-03	3.30E-06	1.45E-05	0.0	1.45E-05	
Chromium (7440-47-3)	1.40E-03	4.21E-06	1.84E-05	0.0	1.84E-05	
Cobalt (7440-48-4)	8.40E-05	2.52E-07	1.11E-06	0.0	1.11E-06	
Manganese (7439-96-5)	3.80E-04	1.14E-06	5.00E-06	0.0	5.00E-06	
Mercury (7439-97-6)	2.60E-04	7.81E-07	3.42E-06	0.0	3.42E-06	
Nickel (7440-02-0)	2.10E-03	6.31E-06	2.76E-05	0.0	2.76E-05	
Selenium (7782-49-2)	2.40E-05	7.21E-08	3.16E-07	0.0	3.16E-07	
Totals		5.67E-03	2.48E-02		2.48E-02	
^a All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).						
^b Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.						
^c Total POM emission factor is equal to the sum of the individual POM compounds.						
Calculations Summary - Greenhouse Gases:						
Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	358	0.00	1,569	1,569
CH ₄	28	2.20E-03	6.75E-03	0.00	2.96E-02	2.96E-02
N ₂ O	265	2.20E-04	6.75E-04	0.00	2.96E-03	2.96E-03
Total GHG (CO ₂ e)			359		1,570	1,570
^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.						

Emission Unit		EQUI 109 - Machinery RM MAU-5					
Stack/Vent Designation Number:		STRU 81					
Maximum Rated Capacity:	3.06	million BTU/hr					
Control Equipment:	na						
Fuel Paramaters							
Fuel Type		Natural Gas	ONLY	No secondary fuel			
Heat Value:		1020	Btu/cf				
Fuel Consumption Rate:		0.0030	MMcf/hr				
Source of Emission Factors:	AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr						
Calculations Summary:							
Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)		
PM	7.60	2.28E-02	1.00E-01	0.00	1.00E-01		
PM ₁₀	7.60	2.28E-02	1.00E-01	0.00	1.00E-01		
PM _{2.5}	7.60	2.28E-02	1.00E-01	0.00	1.00E-01		
SO _x	0.60	1.80E-03	7.89E-03	0.00	7.89E-03		
NO _x	100	3.00E-01	1.32E+00	0.00	1.32E+00		
VOC	5.50	1.65E-02	7.24E-02	0.00	7.24E-02		
CO	84	2.52E-01	1.11E+00	0.00	1.11E+00		
Lead	5.00E-04	1.50E-06	6.58E-06	0.00	6.58E-06		
Calculations Summary - HAPs:							
HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)		
Benzene (71-43-2)	2.10E-03	6.31E-06	2.76E-05	0.0	2.76E-05		
Dichlorobenzene (25321-22-6)	1.20E-03	3.60E-06	1.58E-05	0.0	1.58E-05		
Formaldehyde (50-00-0)	7.50E-02	2.25E-04	9.87E-04	0.0	9.87E-04		
Hexane (110-54-3)	1.80E+00	5.41E-03	2.37E-02	0.0	2.37E-02		
Naphthalene (91-20-3) ^b	6.10E-04	1.83E-06	8.03E-06	0.0	8.03E-06		
Toluene (108-88-3)	3.40E-03	1.02E-05	4.47E-05	0.0	4.47E-05		
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.60E-07	1.14E-06	0.0	1.14E-06		
Arsenic (7440-38-2)	2.00E-04	6.01E-07	2.63E-06	0.0	2.63E-06		
Beryllium (7440-41-7)	1.20E-05	3.60E-08	1.58E-07	0.0	1.58E-07		
Cadmium (7440-43-9)	1.10E-03	3.30E-06	1.45E-05	0.0	1.45E-05		
Chromium (7440-47-3)	1.40E-03	4.21E-06	1.84E-05	0.0	1.84E-05		
Cobalt (7440-48-4)	8.40E-05	2.52E-07	1.11E-06	0.0	1.11E-06		
Manganese (7439-96-5)	3.80E-04	1.14E-06	5.00E-06	0.0	5.00E-06		
Mercury (7439-97-6)	2.60E-04	7.81E-07	3.42E-06	0.0	3.42E-06		
Nickel (7440-02-0)	2.10E-03	6.31E-06	2.76E-05	0.0	2.76E-05		
Selenium (7782-49-2)	2.40E-05	7.21E-08	3.16E-07	0.0	3.16E-07		
Totals		5.67E-03	2.48E-02		2.48E-02		

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:							
Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)	
CO ₂	1	117	358	0.00	1,569	1,569	
CH ₄	28	2.20E-03	6.75E-03	0.00	2.96E-02	2.96E-02	
N ₂ O	265	2.20E-04	6.75E-04	0.00	2.96E-03	2.96E-03	
Total GHG (CO ₂ e)			359		1,570	1,570	

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit EQUI 110 - Pretreatment Space Heater #3
Stack/Vent Designation Number: STRU 82
Maximum Rated Capacity: 2.38 million BTU/hr
Control Equipment: na
Fuel Paramaters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0023 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	1.77E-02	7.77E-02	0.00	7.77E-02
PM ₁₀	7.60	1.77E-02	7.77E-02	0.00	7.77E-02
PM _{2.5}	7.60	1.77E-02	7.77E-02	0.00	7.77E-02
SO _x	0.60	1.40E-03	6.13E-03	0.00	6.13E-03
NO _x	100	2.33E-01	1.02E+00	0.00	1.02E+00
VOC	5.50	1.28E-02	5.62E-02	0.00	5.62E-02
CO	84	1.96E-01	8.59E-01	0.00	8.59E-01
Lead	5.00E-04	1.17E-06	5.11E-06	0.00	5.11E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	4.90E-06	2.15E-05	0.0	2.15E-05
Dichlorobenzene (25321-22-6)	1.20E-03	2.80E-06	1.23E-05	0.0	1.23E-05
Formaldehyde (50-00-0)	7.50E-02	1.75E-04	7.67E-04	0.0	7.67E-04
Hexane (110-54-3)	1.80E+00	4.20E-03	1.84E-02	0.0	1.84E-02
Naphthalene (91-20-3) ^b	6.10E-04	1.42E-06	6.24E-06	0.0	6.24E-06
Toluene (108-88-3)	3.40E-03	7.94E-06	3.48E-05	0.0	3.48E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.02E-07	8.83E-07	0.0	8.83E-07
Arsenic (7440-38-2)	2.00E-04	4.67E-07	2.04E-06	0.0	2.04E-06
Beryllium (7440-41-7)	1.20E-05	2.80E-08	1.23E-07	0.0	1.23E-07
Cadmium (7440-43-9)	1.10E-03	2.57E-06	1.12E-05	0.0	1.12E-05
Chromium (7440-47-3)	1.40E-03	3.27E-06	1.43E-05	0.0	1.43E-05
Cobalt (7440-48-4)	8.40E-05	1.96E-07	8.59E-07	0.0	8.59E-07
Manganese (7439-96-5)	3.80E-04	8.87E-07	3.89E-06	0.0	3.89E-06
Mercury (7439-97-6)	2.60E-04	6.07E-07	2.66E-06	0.0	2.66E-06
Nickel (7440-02-0)	2.10E-03	4.90E-06	2.15E-05	0.0	2.15E-05
Selenium (7782-49-2)	2.40E-05	5.60E-08	2.45E-07	0.0	2.45E-07
Totals		4.41E-03	1.93E-02		1.93E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	PTE (lb/hr)	Control Efficiency (%)	Uncontrolled Emission Rate (tpy)	Limited Emission Rate (tons/yr)
CO ₂	1	117	278	0.00	1,219	1,219
CH ₄	28	2.20E-03	5.25E-03	0.00	2.30E-02	2.30E-02
N ₂ O	265	2.20E-04	5.25E-04	0.00	2.30E-03	2.30E-03
Total GHG (CO ₂ e)			279		1,220	5,345

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: EQUI 111 - Bacon Bits Precooked Line
 Stack/Vent Designation Number STRU 10
 Pollution Control Equipment Identification Number(s): na
 Process Type:
 Maximum Capacity: Material 8,050 lb/hr
 Source of Emission Factors used in table below: AP-42 Chapter 9.13.3

Pollutant	Uncontrolled Emission Factor (lb/ton)	Emission Rate (lb/hr)	Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Controlled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
PM (*)	1.99	8.01	35.1	0%	8.01	35.1	35.1
PM10 (*)	1.99	8.01	35.1	0%	8.01	35.1	35.1
PM2.5 (*)	1.99	8.01	35.1	0%	8.01	35.1	35.1
SOx	na	na	na	na	na	na	na
NOx	na	na	na	na	na	na	na
VOC (*)	0.085	0.34	1.50	0%	0.34	1.50	1.50
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na

* PM/PM10 Emission Factor from AP-42 Section 9.13.3 Snack Chip Deep Fat Frying, Table 9.13.3-2 for continuous deep fat fryer -- potato chips.

PM10 emission factor is based on both the filterable and condensible PM (1.6 lb/ton + 0.39 lb/ton = 1.99 lb/ton)

** VOC Emission Factor from AP-42 Section 9.13.3 Snack Chip Deep Fat Frying, Table 9.13.3-3 for deep fat fryer -- other snack chips.

*** Hormel operates a mist eliminator controlling this unit but has elected not to take credit for this control in PTE calculations

Emission Unit			Blood Dryer - EQUI 113					
Stack/Vent Designation Number:			STRU23					
Maximum Rated Capacity:		5.5	million BTU/hr					
Control Equipment:		na						
Fuel Parameters								
Fuel Type			Natural Gas	ONLY	No secondary fuel			
% sulfur			na					
% ash			na					
Heat Value:			1020	Btu/cf				
Fuel Consumption Rate:			5392	cf/hr				
Source of Emission Factors:			AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr					
Calculations Summary:								
Pollutant	Emission Factor	Emission Rate	Maximum Uncontrolled Emissions	Pollution Control Efficiency	Controlled Emission Rate	Controlled Emission Rate	Limited Emissions	
	(lb/cf)	(lbs/hr)	(tpy)	(%)	(lbs/hr)	(tons/yr)	(tons/yr)	
PM	7.60E-06	0.041	0.18	0.00	0.041	0.18	0.18	
PM10	7.60E-06	0.041	0.18	0.00	0.041	0.18	0.18	
PM2.5	7.60E-06	0.041	0.18	0.00	0.041	0.18	0.18	
SOX	6.00E-07	0.0032	0.014	0.00	0.0032	0.014	0.014	
NOX	1.00E-04	0.539	2.36	0.00	0.539	2.36	2.36	
VOC	5.50E-06	0.030	0.13	0.00	0.030	0.13	0.13	
CO	8.40E-05	0.453	1.98	0.00	0.453	1.98	1.98	
Lead	5.00E-10	2.70E-06	1.18E-05	0.00	2.70E-06	1.18E-05	1.18E-05	
Backup fuels - NA								
Natural Gas HAPs								
Pollutant	Emission Factor (lb/10 ⁶ scf)	Emissions (lbs/hr)	Uncontrolled Emissions (tons/yr)	Limited Emissions (tons/yr)				
Benzene (71-43-2)	2.10E-03	1.13E-05	4.96E-05	4.96E-05				
Dichlorobenzene (25321-22-6)	1.20E-03	6.47E-06	2.83E-05	2.83E-05				
Formaldehyde (50-00-0)	7.50E-02	4.04E-04	1.77E-03	1.77E-03				
Hexane (110-54-3)	1.80E+00	9.71E-03	4.25E-02	4.25E-02				
Naphthalene (91-20-3) ^b	6.10E-04	3.29E-06	1.44E-05	1.44E-05				
Toluene (108-88-3)	3.40E-03	1.83E-05	8.03E-05	8.03E-05				
Polycyclic Organic Matter (POM) ^c	8.80E-05	4.75E-07	2.08E-06	2.08E-06				
Arsenic (7440-38-2)	2.00E-04	1.08E-06	4.72E-06	4.72E-06				
Beryllium (7440-41-7)	1.20E-05	6.47E-08	2.83E-07	2.83E-07				
Cadmium (7440-43-9)	1.10E-03	5.93E-06	2.60E-05	2.60E-05				
Chromium (7440-47-3)	1.40E-03	7.55E-06	3.31E-05	3.31E-05				
Cobalt (7440-48-4)	8.40E-05	4.53E-07	1.98E-06	1.98E-06				
Manganese (7439-96-5)	3.80E-04	2.05E-06	8.97E-06	8.97E-06				
Mercury (7439-97-6)	2.60E-04	1.40E-06	6.14E-06	6.14E-06				
Nickel (7440-02-0)	2.10E-03	1.13E-05	4.96E-05	4.96E-05				
Selenium (7782-49-2)	2.40E-05	1.29E-07	5.67E-07	5.67E-07				
Totals	1.89	1.02E-02	4.46E-02	4.46E-02				
^a All emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).								
^b Naphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.								
^c Total POM emission factor is equal to the sum of the individual POM compounds.								
Calculations Summary - Greenhouse Gases:								
Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Control Efficiency (%)	Uncontrolled Emissions (tons/yr)	Limited Emissions (tons/yr)		
CO ₂	1	117	643	0.00	2,816	2,816		
CH ₄	28	2.20E-03	1.21E-02	0.00	5.31E-02	5.31E-02		
N ₂ O	265	2.20E-04	1.21E-03	0.00	5.31E-03	5.31E-03		
Total GHG (CO ₂ e)			644		2,819	2,819		

Emission Unit Identification Number: EQUI 113 - Blood Dryer
 Stack/Vent Designation Number: STRU 23
 Pollution Control Equipment Identification Number(s): TREA 23 (RTO), TREA 46 (new venturi scrubber) and TREA 33 (packed bed scrubber)

Maximum Capacity: 0.96 ton/hr dried blood meal product
 Source of Emission Factors used in table below: AP-42 Chapter 9.5.3 - Table 9.5.3-2, Meat Rendering Plants - Controlled Blood Dryers
Emission factors based on dried blood meal product

Throughput Information

<u>Whole Blood</u>	
21,000	hogs/day
9	lb blood/hog
85%	moisture in whole blood
15%	solids in whole blood
189,000	lbs blood/day of total whole blood
160,650	lbs moisture/day from whole blood
28,350	lbs solids/day from whole blood

<u>Dried Blood - Blood Meal</u>	
0.92	solids in blood meal
0.08	moisture in blood meal
28,350	lbs solids/day in blood meal
30,815	lbs /day total dried blood meal based on 16 hours per day
46,223	lbs /day total dried blood meal based on 24 hours per day
1,926	lbs/hr dried blood meal

Calculations Summary:

Pollutant	Uncontrolled Emission Factor ¹ (lb/ton)	Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency ³ (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
PM	136	131	572	99.7%	0.45	1.96	1.96
PM10	47.7	45.9	201	99.0%	0.45	1.96	1.96
PM2.5	47.7	45.9	201	99.0%	0.45	1.96	1.96
SOx	na	na	na	na	na	na	na
NOx	na	na	na	na	na	na	na
VOC ²	na	na	na	na	na	na	na
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na

1 - Emission factors are based on AP-42 (1995), Section 9.5.3, Meat Rendering, Table 9.5.3-2, are based on weight of dried blood meal product, and are for a natural gas direct-fired dryer controlled by a venturi and packed bed scrubber. See additional Note 1 below for control efficiency calculations.

Total PM, PM10 and PM2.5 based on filterable + condensable emission factors (0.76 lb/ton + 0.46 lb/ton = 1.22 ton/ton)

Assumed PM2.5 emission factor to be equal to PM10 emission factor.

Control efficiencies based on Minn. R. 7011.0070

PM control efficiency for venturi scrubber is 94%, packed gas adsorption column is 85%, and thermal oxidizer is 62%

PM₁₀ and PM_{2.5} control efficiency for venturi scrubber is 84%, packed gas adsorption column is 84%, and thermal oxidizer is 62%

2 - The blood dryer in Austin is controlled by a venturi scrubber, packed gas adsorption column and thermal oxidizer.

PM Control Efficiency for Emission Factor Development (Control efficiencies based on Minn. R. 7011.0070)

Venturi Scrubber 94%

Packed gas adsorption column 85%

Total 99.1%

PM10/PM2.5 Control Efficiency for Emission Factor Development (Control efficiencies based on Minn. R. 7011.0070)

Venturi Scrubber 84%

Packed gas adsorption column 84%

Total 97.4%

Emission Unit Identification Number:		EQUI 117 - AFO Heat Braising Unit			
Stack/Vent Designation Number:		STRU 84			
Pollution Control Equipment Identification Number:		NA			
Maximum Capacity:		3300 lbs meat/hr			
Source of Emission Factors used in table below:		See Below			
Calculations Summary - Braising Operations					
Pollutant	Emission Factor (lb/ton)	Emission Rate (lbs/hr) ¹	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Limited Emission Rate (tons/yr)
PM	--	0.15	0.66	0%	0.66
PM10	--	0.53	2.32	0%	2.32
PM2.5	--	0.53	2.32	0%	2.32
SOX	--	0.020	0.088	0%	0.088
NOx	--	0.00E+00	0.00E+00	0%	0.00E+00
VOC	--	NA	NA	0%	NA
CO	--	2.54	11.1	0%	11.1
Emission Factor Reference:					
1 - Emission factors from stack test at Hormel, July 8, 2021.					
Pollutant	Stack A Result (lb/hr)	Stack B Result (lb/hr)	Combined Stacks (lb/hr)		
PM	0.040	0.11	0.150		
PM2.5	0.11	0.42	0.530		
NOx			0.00		
SO2	0.01	0.01	0.020		
CO	0.35	2.19	2.54		

Emission Unit				EQUI 117 - AFO Heat Braising Unit (combustion)			
Stack/Vent Designation Number:				STRU 84			
Maximum Rated Capacity:		1.96		million BTU/hr			
Control Equipment:		na					
Fuel Parameters							
Fuel Type				Natural Gas	ONLY	No secondary fuel	
% sulfur				na			
% ash				na			
Heat Value:				1020	Btu/cf		
Fuel Consumption Rate:				0.0019	MMcf/hr		
Source of Emission Factors:		AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr					
Calculations Summary:							
Pollutant	Emission						
	Factor	PTE	Uncontrolled	Control	Limited		
	(lb/cf)	(lbs/hr)	Emissions	Efficiency	Emissions		
			(tpy)	(%)	(tons/yr)		
PM	7.60E-06	1.46E-08	6.40E-08	0.00	6.40E-08		
PM10	7.60E-06	1.46E-08	6.40E-08	0.00	6.40E-08		
PM2.5	7.60E-06	1.46E-08	6.40E-08	0.00	6.40E-08		
SOX	6.00E-07	1.15E-09	5.05E-09	0.00	5.05E-09		
NOX	1.00E-04	1.92E-07	8.42E-07	0.00	8.42E-07		
VOC	5.50E-06	1.06E-08	4.63E-08	0.00	4.63E-08		
CO	8.40E-05	1.61E-07	7.07E-07	0.00	7.07E-07		
Lead	5.00E-04	9.61E-07	4.21E-06	0.00	4.21E-06		
Backup fuels - NA							
Natural Gas HAPs							
Pollutant		Emission Factor (lb/10 ⁶ scf)	PTE (lbs/hr)	Uncontrolled Emissions (tons/yr)	Limited Emissions (tons/yr)		
Benzene (71-43-2)		2.10E-03	4.04E-06	1.77E-05	1.77E-05		
Dichlorobenzene (25321-22-6)		1.20E-03	2.31E-06	1.01E-05	1.01E-05		
Formaldehyde (50-00-0)		7.50E-02	1.44E-04	6.31E-04	6.31E-04		
Hexane (110-54-3)		1.80E+00	3.46E-03	1.51E-02	1.51E-02		
Naphthalene (91-20-3) ^b		6.10E-04	1.17E-06	5.13E-06	5.13E-06		
Toluene (108-88-3)		3.40E-03	6.53E-06	2.86E-05	2.86E-05		
Polycyclic Organic Matter (POM)		8.80E-05	1.69E-07	7.41E-07	7.41E-07		
Arsenic (7440-38-2)		2.00E-04	3.84E-07	1.68E-06	1.68E-06		
Beryllium (7440-41-7)		1.20E-05	2.31E-08	1.01E-07	1.01E-07		
Cadmium (7440-43-9)		1.10E-03	2.11E-06	9.26E-06	9.26E-06		
Chromium (7440-47-3)		1.10E-03	2.11E-06	9.26E-06	9.26E-06		
Cobalt (7440-48-4)		8.40E-05	1.61E-07	7.07E-07	7.07E-07		
Manganese (7439-96-5)		3.80E-04	7.30E-07	3.20E-06	3.20E-06		
Mercury (7439-97-6)		2.60E-04	5.00E-07	2.19E-06	2.19E-06		
Nickel (7440-02-0)		2.10E-03	4.04E-06	1.77E-05	1.77E-05		
Selenium (7782-49-2)		2.40E-05	4.61E-08	2.02E-07	2.02E-07		
Totals			3.63E-03	1.59E-02	1.59E-02		
Calculations Summary - Greenhouse Gases:							
Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	PTE (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emissions (tpy)	Limited Emission Rate (tons/yr)	
CO ₂	1	117	229	0.00	1,003	1,003	
CH ₄	28	2.20E-03	4.32E-03	0.00	1.89E-02	1.89E-02	
N ₂ O	265	2.20E-04	4.32E-04	0.00	1.89E-03	1.89E-03	
Total GHG (CO ₂ e)			229		1004	1004	

Emission Unit Identification Number:		EQUI 118 - Natural Smoke Generator							
Stack/Vent Designation Number:		STRU 39 and 40							
Pollution Control Equipment Identification Number:		TREA 39 and 40							
Maximum Capacity:				30.0	lbs sawdust/hr				
				131.4	tons sawdust/yr				
Throughput Limit:				368	tons sawdust/yr Limit for all 10 generators				
					Limited emissions are based on 1/10th of the annual wood throughput limit.				
				5000	BTU/lb wood				
				0.15	MMBtu/hr				
Source of Emission Factors used in table below:		See Below							
Calculations Summary									
Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Controlled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr) **	
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA	
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA	
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA	
NOX	2.8	1.40E-03	AP-42, Table 1.10-1 @ 50% Moisture*	4.20E-02	1.84E-01	0%	1.84E-01	NA	
VOC	44	2.20E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.660	2.89	0%	2.89	NA	
CO	108	5.40E-02	Hormel stack test, 2021 ***	1.62	7.10	0%	7.10	NA	
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	1.71E-01	NA	
Formaldehyde	1.30	6.50E-04	AP-42, Section 9.5.2 Meat Smoke Houses	1.95E-02	8.54E-02	0%	8.54E-02	NA	
Phenol	1.03	5.14E-04	Schroter Emissions Data (See below)	1.54E-02	6.76E-02	0%	6.76E-02	NA	
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2	2.91E-02	1.27E-01	0%	1.27E-01	NA	
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2	1.10E-02	4.80E-02	0%	4.80E-02	NA	
Xylene	0.20	1.01E-04	AP-42 Table 1.10-2	3.03E-03	1.33E-02	0%	1.33E-02	NA	
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4	3.30E-07	1.45E-06	0%	1.45E-06	NA	
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4	1.50E-08	6.57E-08	0%	6.57E-08	NA	
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4	2.55E-06	1.12E-05	0%	1.12E-05	NA	
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4	2.10E-07	9.20E-07	0%	9.20E-07	NA	
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3	1.10E-02	4.80E-02	0%	4.80E-02	NA	
HAPs (total)	8.5	4.26E-03	AP-42 Table 1.10-2, 3, and 4	1.28E-01	5.60E-01	0%	5.60E-01	NA	
Emission Factor Data Notes:									
* NOx Value from AP-42 Table 1.10-1									
(2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned									
Acetaldehyde EF from Osceola Foods stack test (see TSD Attachment 4) = 0.0013 lb/lb wood									
Average stack test result was 0.042 lb/hr at a process rate of 30 lb wood/hr, 0.042/30 = 0.0013 lb/lb wood									
** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group									
*** Stack test at COMG 18, smoke from EQUI 68 passes through the COMG 18 ovens before passing out the stack									
The stack tested value is 0.054 lb CO/lb of wood									
Calculations Summary - Greenhouse Gases:									
Pollutant	GWP	Emission Factor	Uncontrolled Emissions	Pollution Control Efficiency	Controlled Emission Rate	Controlled Emission Rate	Limited Emissions		
		(lbs/MMBtu) ^d	(lb/hr)	(%)	(lbs/hr)	(tons/yr)	(tons/yr)		
CO ₂	1	207	31.0	0.00	31.0	136	NA		
CH ₄	28	1.59E-02	2.38E-03	0.00	2.38E-03	1.04E-02	NA		
N ₂ O	265	7.94E-03	1.19E-03	0.00	1.19E-03	5.21E-03	NA		
Total GHG (CO ₂ e)			31.4		31.4	137.5	NA		
^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.									

Emission Unit Identification Number:		EQUI 119 - Natural Smoke Generator							
Stack/Vent Designation Number:		STRU 11 and 13							
Pollution Control Equipment Identification Number:		TREA 42 and 44							
Maximum Capacity:		30 lbs sawdust/hr							
		131.4 tons sawdust/yr							
Throughput Limit:		368 tons sawdust/yr Limit for all 10 generators							
		Limited emissions are based on 1/10th of the annual wood throughput limit.							
		5000 BTU/lb wood							
		0.15 MMBtu/hr							
Source of Emission Factors used in table below:		See Below							
Calculations Summary									
Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Controlled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr) **	
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA	
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA	
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA	
NOX	2.8	1.40E-03	AP-42, Table 1.10-1 @ 50% Moisture*	4.20E-02	1.84E-01	0%	1.84E-01	NA	
VOC	44	2.20E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.660	2.89	0%	2.89	NA	
CO	108	5.40E-02	Hormel stack test, 2021 ***	1.62	7.10	0%	7.10	NA	
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	1.71E-01	NA	
Formaldehyde	1.30	6.50E-04	AP-42, Section 9.5.2 Meat Smoke Houses	1.95E-02	8.54E-02	0%	8.54E-02	NA	
Phenol	1.03	5.14E-04	Schroter Emissions Data (See below)	1.54E-02	6.76E-02	0%	6.76E-02	NA	
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2	2.91E-02	1.27E-01	0%	1.27E-01	NA	
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2	1.10E-02	4.80E-02	0%	4.80E-02	NA	
Xylene	0.20	1.01E-04	AP-42 Table 1.10-2	3.03E-03	1.33E-02	0%	1.33E-02	NA	
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4	3.30E-07	1.45E-06	0%	1.45E-06	NA	
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4	1.50E-08	6.57E-08	0%	6.57E-08	NA	
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4	2.55E-06	1.12E-05	0%	1.12E-05	NA	
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4	2.10E-07	9.20E-07	0%	9.20E-07	NA	
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3	1.10E-02	4.80E-02	0%	4.80E-02	NA	
HAPs (total)	8.5	4.26E-03	AP-42 Table 1.10-2 and 3	1.28E-01	5.60E-01	0%	5.60E-01	NA	
Emission Factor Data Notes:									
* NOx Value from AP-42 Table 1.10-1									
(2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned									
Acetaldehyde EF from Osceola Foods stack test (see TSD Attachment 4) = 0.0013 lb/lb wood									
Average stack test result was 0.042 lb/hr at a process rate of 30 lb wood/hr, 0.042/30 = 0.0013 lb/lb wood									
** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group									
*** Stack test at COMG 18, smoke from EQUI 68 passes through the COMG 18 ovens before passing out the stack									
The stack tested value is 0.054 lb CO/lb of wood									
Calculations Summary - Greenhouse Gases:									
Pollutant	GWP	Emission Factor	Maximum Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)		
CO ₂	1	207	31.0	0.00	31.0	136	NA		
CH ₄	28	1.59E-02	2.38E-03	0.00	2.38E-03	1.04E-02	NA		
N ₂ O	265	7.94E-03	1.19E-03	0.00	1.19E-03	5.21E-03	NA		
Total GHG (CO ₂ e)			31.4		31.4	138	NA		
^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.									
Schroter Information (emissions out of oven) (TSD Attachment 5)									
Pollutant	Concentration (ppm)	Concentration (mg/m3)	Flow Rate (m3/hr)	Emission Rate (lb/hr)	Emission Factor (lb/lb wood)				
Phenol		20	350	0.0154	0.000514				
Wood chip throughput rate during stack test was 30 lb/hr									

Emission Unit Identification Number: EQUI 120 - Natural Smoke Generator
 Stack/Vent Designation Number: STRU 48, 50 and 52
 Pollution Control Equipment Identification Number: TREA 34, 36, 38

Maximum Capacity:

30 lbs sawdust/hr
 131.4 tons sawdust/yr

Throughput Limit:

368 tons sawdust/yr Limit for all 10 generators
 Limited emissions are based on 1/10th of the annual wood throughput limit.
 5000 BTU/lb wood
 0.15 MMBtu/hr

Source of Emission Factors used in table below:

See Below

Calculations Summary

Pollutant	Emission Factor (lb/ton wood)	Emission Factor (lb/lb wood)	Source of Data	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency	Controlled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr) **
PM	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM10	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
PM2.5	53	2.65E-02	AP-42, Section 9.5.2 Meat Smoke Houses	0.795	3.48	0%	3.48	NA
NOX	2.8	1.40E-03	AP-42, Table 1.10-1 @ 50% Moisture*	4.20E-02	1.84E-01	0%	1.84E-01	NA
VOC	44	2.20E-02	AP-42, Section 9.5 Meat Smoke Houses	0.660	2.89	0%	2.89	NA
CO	126	6.30E-02	Horme! stack test, 2021 ***	1.89	8.28	0%	8.28	NA
Acetaldehyde	2.60	1.30E-03	Stack Test Results, Osceola Foods October 2015	3.90E-02	1.71E-01	0%	1.71E-01	NA
Formaldehyde	1.30	6.50E-04	AP-42, Section 9.5.2 Meat Smoke Houses	1.95E-02	8.54E-02	0%	8.54E-02	NA
Phenol	1.03	5.14E-04	Schroter Emissions Data (See below)	1.54E-02	6.76E-02	0%	6.76E-02	NA
Benzene	1.94	9.69E-04	AP-42 Table 1.10-2	2.91E-02	1.27E-01	0%	1.27E-01	NA
Toluene	0.73	3.65E-04	AP-42 Table 1.10-2	1.10E-02	4.80E-02	0%	4.80E-02	NA
Xylene	0.20	1.01E-04	AP-42 Table 1.10-2	3.03E-03	1.33E-02	0%	1.33E-02	NA
Cadmium Compounds	2.20E-05	1.10E-08	AP-42 Table 1.10-4	3.30E-07	1.45E-06	0%	1.45E-06	NA
Chromium Compounds	1.00E-06	5.00E-10	AP-42 Table 1.10-4	1.50E-08	6.57E-08	0%	6.57E-08	NA
Manganese Compounds	1.70E-04	8.50E-08	AP-42 Table 1.10-4	2.55E-06	1.12E-05	0%	1.12E-05	NA
Nickel Compounds	1.40E-05	7.00E-09	AP-42 Table 1.10-4	2.10E-07	9.20E-07	0%	9.20E-07	NA
Polycyclic Organic Material	0.73	3.65E-04	AP-42 Table 1.10-3	1.10E-02	4.80E-02	0%	4.80E-02	NA
HAPs (total)	8.5	4.26E-03	AP-42 Table 1.10-2 and 3	1.28E-01	5.60E-01	0%	5.60E-01	NA

Emission Factor Data Notes:

* NOx Value from AP-42 Table 1.10-1

(2.8 lbs NOx/ton dry wood) / (2000 lbs/ton) * (0.50 lb dry wood/wood as used) = 0.0007 lb NOx/lb wood burned

Acetaldehyde EF from Osceola Foods stack test (see TSD Attachment 4) = 0.0013 lb/lb wood

Average stack test result was 0.042 lb/hr at a process rate of 30 lb wood/hr, 0.042/30 = 0.0013 lb/lb wood

** Limited annual emissions are calculated at COMG 3 because the annual limit on wood is at this group

*** Stack test at COMG 16, smoke from EQUI 68 passes through the COMG 16 ovens before passing out the stack

The stack tested value is 0.063 lb CO/lb of wood

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Maximum Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	207	31.0	0.00	31.0	136	NA
CH ₄	28	1.59E-02	2.38E-03	0.00	2.38E-03	1.04E-02	NA
N ₂ O	265	7.94E-03	1.19E-03	0.00	1.19E-03	5.21E-03	NA
Total GHG (CO ₂ e)			31.4		31.4	138	NA

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Schroter Information (emissions out of oven) (TSD Attachment 5)

Pollutant	Concentration (mg/Nm3)	Flow Rate (Nm3/hr)	Emission Rate (lb/hr)	Emission Factor (lb/lb wood)
Phenol	20	350	0.0154	0.000514

Wood chip throughput rate during stack test was 30 lb/hr

Emission Unit Identification Number:	EQUI 123 - Hog Singer #2
Stack/Vent Designation Number:	STRU 44
Maximum Rated Boiler Capacity:	10 million BTU/hr each
Primary Fuel Type:	Natural Gas
Fuel Parameters, if applicable:	% Sulfur: NA % Ash: NA
Heat Value:	1020 BTU/cf
Fuel Consumption Rate:	0.010 (MMcf/hr)
Calculation Summary:	

Pollutant	Uncontrolled Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	7.45E-02	3.26E-01	0%	3.26E-01
PM10	7.60	7.45E-02	3.26E-01	0%	3.26E-01
PM2.5	7.60	7.45E-02	3.26E-01	0%	3.26E-01
SOx	0.6	5.88E-03	2.58E-02	0%	2.58E-02
NOx	100	9.80E-01	4.29E+00	0%	4.29E+00
VOC	5.5	5.39E-02	2.36E-01	0%	2.36E-01
CO	84	8.24E-01	3.61E+00	0%	3.61E+00
Lead	5.00E-04	4.90E-06	2.15E-05	0%	2.15E-05

Emission rates are based on AP-42 Section 1.4, Natural Gas Combustion (7/98).

Natural Gas HAPs

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	2.06E-05	9.02E-05	9.02E-05
Dichlorobenzene (25321-22-6)	1.20E-03	1.18E-05	5.15E-05	5.15E-05
Formaldehyde (50-00-0)	7.50E-02	7.35E-04	3.22E-03	3.22E-03
Hexane (110-54-3)	1.80E+00	1.76E-02	7.73E-02	7.73E-02
Naphthalene (91-20-3) ^b	6.10E-04	5.98E-06	2.62E-05	2.62E-05
Toluene (108-88-3)	3.40E-03	3.33E-05	1.46E-04	1.46E-04
Polycyclic Organic Matter (POM)	8.64E-05	8.47E-07	3.71E-06	3.71E-06
Arsenic (7440-38-2)	2.00E-04	1.96E-06	8.59E-06	8.59E-06
Beryllium (7440-41-7)	1.20E-05	1.18E-07	5.15E-07	5.15E-07
Cadmium (7440-43-9)	1.10E-03	1.08E-05	4.72E-05	4.72E-05
Chromium (7440-47-3)	1.40E-03	1.37E-05	6.01E-05	6.01E-05
Cobalt (7440-48-4)	8.40E-05	8.24E-07	3.61E-06	3.61E-06
Manganese (7439-96-5)	3.80E-04	3.73E-06	1.63E-05	1.63E-05
Mercury (7439-97-6)	2.60E-04	2.55E-06	1.12E-05	1.12E-05
Nickel (7440-02-0)	2.10E-03	2.06E-05	9.02E-05	9.02E-05
Selenium (7782-49-2)	2.40E-05	2.35E-07	1.03E-06	1.03E-06
Totals	1.89	1.85E-02	8.10E-02	8.10E-02

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	1,169	0.00	5,120	5,120
CH ₄	28	2.20E-03	2.20E-02	0.00	9.66E-02	9.66E-02
N ₂ O	265	2.20E-04	2.20E-03	0.00	9.66E-03	9.66E-03
Total GHG (CO ₂ e)			1170		5125	5,125

Calculations Summary: EQUIs 17, 18

Pollutant	Emission Factor (lb/msf)	Emission Rate (lb/hr)	Emissions (ton/yr)	Max Controlled Emissions (lb/hr)**	Limited Controlled Emissions (ton/yr)
PM	na	228	998	2.68	14.7
PM₁₀	na	82.8	362	2.68	14.7
PM_{2.5}	na	82.76	362.5	2.68	14.7
SO_x	na	na	na	na	na
NO_x	na	na	na	na	na
VOC	na	2.68	11.7	2.68	14.7
CO	na	na	na	na	na
Lead	na	na	na	na	na

EQUIs 14, 71, 101, 113

Pollutant	Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (ton/yr)	Maximum Controlled Emissions (lb/hr) ¹	Maximum Controlled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
PM	776	3400	3.00	13.1	13.1
PM₁₀	1682	7368	18.0	78.8	78.8
PM_{2.5}	1668	7308	18.0	78.8	78.8
SO_x	na	na	na	na	na
NO_x	na	na	na	na	na
VOC	32.8	144	1.06	4.64	4.64
CO	na	na	na	na	na
Lead	na	na	na	na	na
CO	na	na	na	na	
Lead	na	na	na	na	

Hormel Foods Corporation

Cooling Towers (1A) - 21 in total

Each are insignificant activities under Minn. R. 7007.1300, Subp. 3(F)(2)

Cooling Towers (2) (Model: ECO-ATC-1421-1G)

The cooling tower emissions were calculated using AP-42 Section 13.4 methodology.

$$Q_{(total)} = 1,800 \text{ gal/min} \quad \text{total}$$

$$\text{Drift Loss} = 0.001 \%$$

$$\text{TDS} = 1500 \text{ ppm}$$

$$E_{PM} = Q * \text{Drift Loss} * \text{TDS}$$
$$94.5\% \text{ PM}_{10}/100\% \text{ PM}$$
$$4\% \text{ PM}_{2.5}/100\% \text{ PM}$$

$$E_{PM} = 1800 \text{ gal/min} * 0.005/100 * 1500 \text{ lb solids}/10^6 \text{ lb water} * 8.34 \text{ lb water/gal} * 60 \text{ min/hr}$$

$$E_{PM} = 0.0135 \text{ lb solids/hr}$$

$$E_{PM} = 0.059 \text{ tpy}$$

$$E_{PM10} = 0.013 \text{ lb solids/hr}$$

$$E_{PM10} = 0.056 \text{ tpy}$$

$$E_{PM2.5} = 0.00054 \text{ lb solids/hr}$$

$$E_{PM2.5} = 0.0024 \text{ tpy}$$

Cooling Towers (8) (Model: ECO-ATC-3846A)

The cooling tower emissions were calculated using AP-42 Section 13.4 methodology.

$$Q_{(total)} = 11,200 \text{ gal/min} \quad \text{total}$$

$$\text{Drift Loss} = 0.001 \%$$

$$\text{TDS} = 1500 \text{ ppm}$$

$$E_{PM} = Q * \text{Drift Loss} * \text{TDS}$$
$$94.5\% \text{ PM}_{10}/100\% \text{ PM}$$
$$4\% \text{ PM}_{2.5}/100\% \text{ PM}$$

$$E_{PM} = 11,200 \text{ gal/min} * 0.001/100 * 1500 \text{ lb solids}/10^6 \text{ lb water} * 8.34 \text{ lb water/gal} * 60 \text{ min/hr}$$

$$E_{PM} = 0.084 \text{ lb solids/hr}$$

$$E_{PM} = 0.368 \text{ tpy}$$

$$E_{PM10} = 0.079 \text{ lb solids/hr}$$

$$E_{PM10} = 0.348 \text{ tpy}$$

$$E_{PM2.5} = 0.00336 \text{ lb solids/hr}$$

$$E_{PM2.5} = 0.0147 \text{ tpy}$$

Emission calculations are based on Joel Reisman and Gordon Frisbie paper:
 "Calculating Realistic PM10 Emissions from Cooling Towers"
 A&WMA, Abstract No. 216, Session No. AM-1b

Cooling Towers (8) (Model: ECO-ATC-2569-1G)

The cooling tower emissions were calculated using AP-42 Section 13.4 methodology.

$$Q_{(total)} = 7,200 \text{ gal/min total}$$

$$\text{Drift Loss} = 0.001 \%$$

$$\text{TDS} = 1500 \text{ ppm}$$

$$E_{PM} = Q * \text{Drift Loss} * \text{TDS}$$

$$94.5\% \text{ PM}_{10}/100\% \text{ PM}$$

$$4\% \text{ PM}_{2.5}/100\% \text{ PM}$$

$$E_{PM} = 7200 \text{ gal/min} * 0.001/100 * 1500 \text{ lb solids}/10^6 \text{ lb water} * 8.34 \text{ lb water/gal} * 60 \text{ min/hr}$$

$$E_{PM} = 0.0540 \text{ lb solids/hr}$$

$$E_{PM} = 0.237 \text{ tpy}$$

$$E_{PM10} = 0.0511 \text{ lb solids/hr}$$

$$E_{PM10} = 0.224 \text{ tpy}$$

$$E_{PM2.5} = 0.00216 \text{ lb solids/hr}$$

$$E_{PM2.5} = 0.0095 \text{ tpy}$$

Emission calculations are based on Joel Reisman and Gordon Frisbie paper:
 "Calculating Realistic PM10 Emissions from Cooling Towers"
 A&WMA, Abstract No. 216, Session No. AM-1b

Cooling Tower (1) (Model: XLP-XL-710)

The cooling tower emissions were calculated using AP-42 Section 13.4 methodology.

$$Q_{(total)} = 900 \text{ gal/min total}$$

$$\text{Drift Loss} = 0.001 \%$$

$$\text{TDS} = 1500 \text{ ppm}$$

$$E_{PM} = Q * \text{Drift Loss} * \text{TDS}$$

$$94.5\% \text{ PM}_{10}/100\% \text{ PM}$$

$$4\% \text{ PM}_{2.5}/100\% \text{ PM}$$

$$E_{PM} = 900 \text{ gal/min} * 0.001/100 * 1500 \text{ lb solids}/10^6 \text{ lb water} * 8.34 \text{ lb water/gal} * 60 \text{ min/hr}$$

$E_{PM} = 0.0068 \text{ lb solids/hr}$
 $E_{PM} = 0.030 \text{ tpy}$
 $E_{PM10} = 0.0064 \text{ lb solids/hr}$
 $E_{PM10} = 0.028 \text{ tpy}$
 $E_{PM2.5} = 0.00027 \text{ lb solids/hr}$
 $E_{PM2.5} = 0.0012 \text{ tpy}$

Emission calculations are based on Joel Reisman and Gordon Frisbie paper:
 "Calculating Realistic PM10 Emissions from Cooling Towers"
 A&WMA, Abstract No. 216, Session No. AM-1b

Cooling Tower (1) (Model: AT-19-914)

The cooling tower emissions were calculated using AP-42 Section 13.4 methodology.

$Q_{(total)} = 1,239 \text{ gal/min total}$

Drift Loss = 0.001

TDS = 1500

$E_{PM} = Q * \text{Drift Loss} * \text{TDS}$
 $94.5\% \text{ PM}_{10}/100\% \text{ PM}$
 $4\% \text{ PM}_{2.5}/100\% \text{ PM}$

$E_{PM} = 1239 \text{ gal/min} * 0.001/100 * 1500 \text{ lb solids}/10^6 \text{ lb water} * 8.34 \text{ lb water/gal} * 60 \text{ min/hr}$

$E_{PM} = 0.0093$
 $E_{PM} = 0.041$
 $E_{PM10} = 0.0088$
 $E_{PM10} = 0.039$
 $E_{PM2.5} = 0.00037$
 $E_{PM2.5} = 0.0016$

Emission calculations are based on Joel Reisman and Gordon Frisbie paper:
 "Calculating Realistic PM10 Emissions from Cooling Towers"
 A&WMA, Abstract No. 216, Session No. AM-1b

Cooling Tower (1) (Model: AT-19-89)

The cooling tower emissions were calculated using AP-42 Section 13.4 methodology.

$Q_{(total)} = 726$

Drift Loss = 0.001

TDS = 1500

$$E_{PM} = Q * \text{Drift Loss} * \text{TDS}$$

$$94.5\% \text{ PM}_{10}/100\% \text{ PM}$$

$$4\% \text{ PM}_{2.5}/100\% \text{ PM}$$

$$E_{PM} = 726 \text{ gal/min} * 0.001/100 * 1500 \text{ lb solids}/10^6 \text{ lb water} * 8.34 \text{ lb water/gal} * 60 \text{ min/hr}$$

$$E_{PM} = \mathbf{0.0054}$$

$$E_{PM} = \mathbf{0.024}$$

$$E_{PM10} = \mathbf{0.0052}$$

$$E_{PM10} = \mathbf{0.023}$$

$$E_{PM2.5} = \mathbf{0.00022}$$

$$E_{PM2.5} = \mathbf{0.0010}$$

Emission calculations are based on Joel Reisman and Gordon Frisbie paper:
 "Calculating Realistic PM10 Emissions from Cooling Towers"
 A&WMA, Abstract No. 216, Session No. AM-1b

Emission Unit IA - Kill Floor MAU
Stack/Vent Designation Number: IA
Maximum Rated Capacity: 1 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0010 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
PM ₁₀	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
PM _{2.5}	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
SO _x	0.60	5.88E-04	2.58E-03	0.00	2.58E-03
NO _x	100	9.80E-02	4.29E-01	0.00	4.29E-01
VOC	5.50	5.39E-03	2.36E-02	0.00	2.36E-02
CO	84	8.24E-02	3.61E-01	0.00	3.61E-01
Lead	5.00E-04	4.90E-07	2.15E-06	0.00	2.15E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	2.06E-06	9.02E-06	0.0	9.02E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.18E-06	5.15E-06	0.0	5.15E-06
Formaldehyde (50-00-0)	7.50E-02	7.35E-05	3.22E-04	0.0	3.22E-04
Hexane (110-54-3)	1.80E+00	1.76E-03	7.73E-03	0.0	7.73E-03
Naphthalene (91-20-3) ^b	6.10E-04	5.98E-07	2.62E-06	0.0	2.62E-06
Toluene (108-88-3)	3.40E-03	3.33E-06	1.46E-05	0.0	1.46E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	8.47E-08	3.71E-07	0.0	3.71E-07
Arsenic (7440-38-2)	2.00E-04	1.96E-07	8.59E-07	0.0	8.59E-07
Beryllium (7440-41-7)	1.20E-05	1.18E-08	5.15E-08	0.0	5.15E-08
Cadmium (7440-43-9)	1.10E-03	1.08E-06	4.72E-06	0.0	4.72E-06
Chromium (7440-47-3)	1.40E-03	1.37E-06	6.01E-06	0.0	6.01E-06
Cobalt (7440-48-4)	8.40E-05	8.24E-08	3.61E-07	0.0	3.61E-07
Manganese (7439-96-5)	3.80E-04	3.73E-07	1.63E-06	0.0	1.63E-06
Mercury (7439-97-6)	2.60E-04	2.55E-07	1.12E-06	0.0	1.12E-06
Nickel (7440-02-0)	2.10E-03	2.06E-06	9.02E-06	0.0	9.02E-06
Selenium (7782-49-2)	2.40E-05	2.35E-08	1.03E-07	0.0	1.03E-07
Totals		1.85E-03	8.10E-03		8.10E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	117	0.00	512	512
CH ₄	28	2.20E-03	2.20E-03	0.00	9.66E-03	9.66E-03
N ₂ O	265	2.20E-04	2.20E-04	0.00	9.66E-04	9.66E-04
Total GHG (CO ₂ e)			117		512	512

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Office MAU 1
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.26 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00025 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	1.94E-03	8.49E-03	0.00	8.49E-03
PM ₁₀	7.60	1.94E-03	8.49E-03	0.00	8.49E-03
PM _{2.5}	7.60	1.94E-03	8.49E-03	0.00	8.49E-03
SO _x	0.60	1.53E-04	6.70E-04	0.00	6.70E-04
NO _x	100	2.55E-02	1.12E-01	0.00	1.12E-01
VOC	5.50	1.40E-03	6.14E-03	0.00	6.14E-03
CO	84	2.14E-02	9.38E-02	0.00	9.38E-02
Lead	5.00E-04	1.27E-07	5.58E-07	0.00	5.58E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	5.35E-07	2.34E-06	0.0	2.34E-06
Dichlorobenzene (25321-22-6)	1.20E-03	3.06E-07	1.34E-06	0.0	1.34E-06
Formaldehyde (50-00-0)	7.50E-02	1.91E-05	8.37E-05	0.0	8.37E-05
Hexane (110-54-3)	1.80E+00	4.59E-04	2.01E-03	0.0	2.01E-03
Naphthalene (91-20-3) ^b	6.10E-04	1.55E-07	6.81E-07	0.0	6.81E-07
Toluene (108-88-3)	3.40E-03	8.67E-07	3.80E-06	0.0	3.80E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.20E-08	9.65E-08	0.0	9.65E-08
Arsenic (7440-38-2)	2.00E-04	5.10E-08	2.23E-07	0.0	2.23E-07
Beryllium (7440-41-7)	1.20E-05	3.06E-09	1.34E-08	0.0	1.34E-08
Cadmium (7440-43-9)	1.10E-03	2.80E-07	1.23E-06	0.0	1.23E-06
Chromium (7440-47-3)	1.40E-03	3.57E-07	1.56E-06	0.0	1.56E-06
Cobalt (7440-48-4)	8.40E-05	2.14E-08	9.38E-08	0.0	9.38E-08
Manganese (7439-96-5)	3.80E-04	9.69E-08	4.24E-07	0.0	4.24E-07
Mercury (7439-97-6)	2.60E-04	6.63E-08	2.90E-07	0.0	2.90E-07
Nickel (7440-02-0)	2.10E-03	5.35E-07	2.34E-06	0.0	2.34E-06
Selenium (7782-49-2)	2.40E-05	6.12E-09	2.68E-08	0.0	2.68E-08
Totals		4.81E-04	2.11E-03		2.11E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	30.4	0.00	133	133
CH ₄	28	2.20E-03	5.73E-04	0.00	2.51E-03	2.51E-03
N ₂ O	265	2.20E-04	5.73E-05	0.00	2.51E-04	2.51E-04
Total GHG (CO ₂ e)			30.4		133	133

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit		IA - MP136 RMAU					
Stack/Vent Designation Number:		NA					
Maximum Rated Capacity:		0.422 million BTU/hr					
Control Equipment:		na					
Fuel Parameters							
Fuel Type		Natural Gas ONLY		No secondary fuel			
% sulfur		na					
% ash		na					
Heat Value:		1020 Btu/cf					
Fuel Consumption Rate:		4.14E-04 MMcf/hr					
Source of Emission Factors:		AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr					
Calculations Summary:							
Pollutant	Emission Factor	Emission Rate	Maximum Uncontrolled Emissions	Pollution Control Efficiency	Controlled Emission Rate	Controlled Emission Rate	Limited Controlled Emissions
	(lb/MMcf)	(lbs/hr)	(tpy)	(%)	(lbs/hr)	(tons/yr)	(tons/yr)
PM	7.60	3.14E-03	1.38E-02	0.00	3.14E-03	1.38E-02	1.38E-02
PM10	7.60	3.14E-03	1.38E-02	0.00	3.14E-03	1.38E-02	1.38E-02
PM2.5	7.60	3.14E-03	1.38E-02	0.00	3.14E-03	1.38E-02	1.38E-02
SOX	0.60	2.48E-04	1.09E-03	0.00	2.48E-04	1.09E-03	1.09E-03
NOX	100	4.14E-02	1.81E-01	0.00	4.14E-02	1.81E-01	1.81E-01
VOC	5.50	2.28E-03	9.97E-03	0.00	2.28E-03	9.97E-03	9.97E-03
CO	84	3.48E-02	1.52E-01	0.00	3.48E-02	1.52E-01	1.52E-01
Pb	5.00E-04	2.07E-07	9.06E-07	0.00	2.07E-07	9.06E-07	9.06E-07
Backup fuels - NA							
Natural Gas HAPs							
Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Maximum Controlled Emissions (tons/yr)	Limited Controlled Emissions (tons/yr)		
Benzene (71-43-2)	2.10E-03	8.69E-07	3.81E-06	3.81E-06	3.81E-06		
Dichlorobenzene (25321-22-6)	1.20E-03	4.96E-07	2.17E-06	2.17E-06	2.17E-06		
Formaldehyde (50-00-0)	7.50E-02	3.10E-05	1.36E-04	1.36E-04	1.36E-04		
Hexane (110-54-3)	1.80E+00	7.45E-04	3.26E-03	3.26E-03	3.26E-03		
Naphthalene (91-20-3) ^p	6.10E-04	2.52E-07	1.11E-06	1.11E-06	1.11E-06		
Toluene (108-88-3)	3.40E-03	1.41E-06	6.16E-06	6.16E-06	6.16E-06		
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.57E-08	1.57E-07	1.57E-07	1.57E-07		
Arsenic (7440-38-2)	2.00E-04	8.27E-08	3.62E-07	3.62E-07	3.62E-07		
Beryllium (7440-41-7)	1.20E-05	4.96E-09	2.17E-08	2.17E-08	2.17E-08		
Cadmium (7440-43-9)	1.10E-03	4.55E-07	1.99E-06	1.99E-06	1.99E-06		
Chromium (7440-47-3)	1.40E-03	5.79E-07	2.54E-06	2.54E-06	2.54E-06		
Cobalt (7440-48-4)	8.40E-05	3.48E-08	1.52E-07	1.52E-07	1.52E-07		
Manganese (7439-96-5)	3.80E-04	1.57E-07	6.89E-07	6.89E-07	6.89E-07		
Mercury (7439-97-6)	2.60E-04	1.08E-07	4.71E-07	4.71E-07	4.71E-07		
Nickel (7440-02-0)	2.10E-03	8.69E-07	3.81E-06	3.81E-06	3.81E-06		
Selenium (7782-49-2)	2.40E-05	9.93E-09	4.35E-08	4.35E-08	4.35E-08		
Totals		7.81E-04	3.42E-03	3.42E-03	3.42E-03		
Calculations Summary - Greenhouse Gases:							
Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Maximum Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	117	49.3	0.00	49.3	216	na
CH ₄	25	2.20E-03	9.30E-04	0.00	9.30E-04	4.07E-03	na
N ₂ O	298	2.20E-04	9.30E-05	0.00	9.30E-05	4.07E-04	na
Total GHG (CO ₂ e)			49.3		49.4	216	na

Emission Unit IA - Machinery RM MAU-1
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.500 million BTU/hr
Control Equipment: na
Fuel Paramaters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00049 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	3.73E-03	1.63E-02	0.00	1.63E-02
PM ₁₀	7.60	3.73E-03	1.63E-02	0.00	1.63E-02
PM _{2.5}	7.60	3.73E-03	1.63E-02	0.00	1.63E-02
SO _x	0.60	2.94E-04	1.29E-03	0.00	1.29E-03
NO _x	100	4.90E-02	2.15E-01	0.00	2.15E-01
VOC	5.50	2.70E-03	1.18E-02	0.00	1.18E-02
CO	84	4.12E-02	1.80E-01	0.00	1.80E-01
Lead	5.00E-04	2.45E-07	1.07E-06	0.00	1.07E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.03E-06	4.51E-06	0.0	4.51E-06
Dichlorobenzene (25321-22-6)	1.20E-03	5.88E-07	2.58E-06	0.0	2.58E-06
Formaldehyde (50-00-0)	7.50E-02	3.68E-05	1.61E-04	0.0	1.61E-04
Hexane (110-54-3)	1.80E+00	8.82E-04	3.86E-03	0.0	3.86E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.99E-07	1.31E-06	0.0	1.31E-06
Toluene (108-88-3)	3.40E-03	1.67E-06	7.30E-06	0.0	7.30E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	4.24E-08	1.86E-07	0.0	1.86E-07
Arsenic (7440-38-2)	2.00E-04	9.80E-08	4.29E-07	0.0	4.29E-07
Beryllium (7440-41-7)	1.20E-05	5.88E-09	2.58E-08	0.0	2.58E-08
Cadmium (7440-43-9)	1.10E-03	5.39E-07	2.36E-06	0.0	2.36E-06
Chromium (7440-47-3)	1.40E-03	6.86E-07	3.01E-06	0.0	3.01E-06
Cobalt (7440-48-4)	8.40E-05	4.12E-08	1.80E-07	0.0	1.80E-07
Manganese (7439-96-5)	3.80E-04	1.86E-07	8.16E-07	0.0	8.16E-07
Mercury (7439-97-6)	2.60E-04	1.27E-07	5.58E-07	0.0	5.58E-07
Nickel (7440-02-0)	2.10E-03	1.03E-06	4.51E-06	0.0	4.51E-06
Selenium (7782-49-2)	2.40E-05	1.18E-08	5.15E-08	0.0	5.15E-08
Totals		9.25E-04	4.05E-03		4.05E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lbs/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	58.4	0.00	256	256
CH ₄	28	2.20E-03	1.10E-03	0.00	4.83E-03	4.83E-03
N ₂ O	265	2.20E-04	1.10E-04	0.00	4.83E-04	4.83E-04
Total GHG (CO ₂ e)			58.5		256	256

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - DS102-RTE RMAU-1
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.834 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00082 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	6.21E-03	2.72E-02	0.00	2.72E-02
PM ₁₀	7.60	6.21E-03	2.72E-02	0.00	2.72E-02
PM _{2.5}	7.60	6.21E-03	2.72E-02	0.00	2.72E-02
SO _x	0.60	4.91E-04	2.15E-03	0.00	2.15E-03
NO _x	100	8.18E-02	3.58E-01	0.00	3.58E-01
VOC	5.50	4.50E-03	1.97E-02	0.00	1.97E-02
CO	84	6.87E-02	3.01E-01	0.00	3.01E-01
Lead	5.00E-04	4.09E-07	1.79E-06	0.00	1.79E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.72E-06	7.52E-06	0.00	7.52E-06
Dichlorobenzene (25321-22-6)	1.20E-03	9.81E-07	4.30E-06	0.00	4.30E-06
Formaldehyde (50-00-0)	7.50E-02	6.13E-05	2.69E-04	0.00	2.69E-04
Hexane (110-54-3)	1.80E+00	1.47E-03	6.45E-03	0.00	6.45E-03
Naphthalene (91-20-3) ^b	6.10E-04	4.99E-07	2.18E-06	0.00	2.18E-06
Toluene (108-88-3)	3.40E-03	2.78E-06	1.22E-05	0.00	1.22E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	7.06E-08	3.09E-07	0.00	3.09E-07
Arsenic (7440-38-2)	2.00E-04	1.64E-07	7.16E-07	0.00	7.16E-07
Beryllium (7440-41-7)	1.20E-05	9.81E-09	4.30E-08	0.00	4.30E-08
Cadmium (7440-43-9)	1.10E-03	8.99E-07	3.94E-06	0.00	3.94E-06
Chromium (7440-47-3)	1.40E-03	1.14E-06	5.01E-06	0.00	5.01E-06
Cobalt (7440-48-4)	8.40E-05	6.87E-08	3.01E-07	0.00	3.01E-07
Manganese (7439-96-5)	3.80E-04	3.11E-07	1.36E-06	0.00	1.36E-06
Mercury (7439-97-6)	2.60E-04	2.13E-07	9.31E-07	0.00	9.31E-07
Nickel (7440-02-0)	2.10E-03	1.72E-06	7.52E-06	0.00	7.52E-06
Selenium (7782-49-2)	2.40E-05	1.96E-08	8.60E-08	0.00	8.60E-08
Totals		1.54E-03	6.76E-03		6.76E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	97.5	0.00	427	427
CH ₄	28	2.20E-03	1.84E-03	0.00	8.05E-03	8.05E-03
N ₂ O	265	2.20E-04	1.84E-04	0.00	8.05E-04	8.05E-04
Total GHG (CO ₂ e)			97.6		427	427

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Refined Products Upgrade

This unit qualifies as an Insignificant Activity under Minn. R. 7007.1300 Subp. 3(f): <2 tons CO, < 1 ton NO_x, SO₂, PM/PM₁₀, VOC, and <1000 ton CO₂e

Emission Unit		Refined Products MAU 4	
Stack/Vent Designation Number:	IA 001		
Maximum Rated Capacity:	0.606 million BTU/hr		
Control Equipment:	na		
Fuel Parameters:			
Fuel Type	Natural Gas ONLY	No secondary fuel	
Heat Value:	1020 Btu/cf		
Fuel Consumption Rate:	0.00059 MMcf/hr		
AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr			

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
PM	7.60	4.52E-03	1.98E-02	0.00	4.52E-03	1.98E-02
PM ₁₀	7.60	4.52E-03	1.98E-02	0.00	4.52E-03	1.98E-02
PM _{2.5}	7.60	4.52E-03	1.98E-02	0.00	4.52E-03	1.98E-02
SO _x	0.60	3.56E-04	1.56E-03	0.00	3.56E-04	1.56E-03
NO _x	100	5.94E-02	2.60E-01	0.00	5.94E-02	2.60E-01
VOC	5.50	3.27E-03	1.43E-02	0.00	3.27E-03	1.43E-02
CO	84	4.99E-02	2.19E-01	0.00	4.99E-02	2.19E-01
Lead	5.00E-04	2.97E-07	1.30E-06	0.00	2.97E-07	1.30E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	1.25E-06	5.46E-06	0.0	1.25E-06	5.46E-06
Dichlorobenzene (25321-22-6)	1.20E-03	7.13E-07	3.12E-06	0.0	7.13E-07	3.12E-06
Formaldehyde (50-00-0)	7.50E-02	4.46E-05	1.95E-04	0.0	4.46E-05	1.95E-04
Hexane (110-54-3)	1.80E+00	1.07E-03	4.68E-03	0.0	1.07E-03	4.68E-03
Naphthalene (91-20-3) ^b	6.10E-04	3.62E-07	1.59E-06	0.0	3.62E-07	1.59E-06
Toluene (108-88-3)	3.40E-03	2.02E-06	8.85E-06	0.0	2.02E-06	8.85E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	5.13E-08	2.25E-07	0.0	5.13E-08	2.25E-07
Arsenic (7440-38-2)	2.00E-04	1.19E-07	5.20E-07	0.0	1.19E-07	5.20E-07
Beryllium (7440-41-7)	1.20E-05	7.13E-09	3.12E-08	0.0	7.13E-09	3.12E-08
Cadmium (7440-43-9)	1.10E-03	6.54E-07	2.86E-06	0.0	6.54E-07	2.86E-06
Chromium (7440-47-3)	1.40E-03	8.32E-07	3.64E-06	0.0	8.32E-07	3.64E-06
Cobalt (7440-48-4)	8.40E-05	4.99E-08	2.19E-07	0.0	4.99E-08	2.19E-07
Manganese (7439-96-5)	3.80E-04	2.26E-07	9.89E-07	0.0	2.26E-07	9.89E-07
Mercury (7439-97-6)	2.60E-04	1.54E-07	6.77E-07	0.0	1.54E-07	6.77E-07
Nickel (7440-02-0)	2.10E-03	1.25E-06	5.46E-06	0.0	1.25E-06	5.46E-06
Selenium (7782-49-2)	2.40E-05	1.43E-08	6.25E-08	0.0	1.43E-08	6.25E-08
Totals		1.12E-03	4.91E-03		1.12E-03	4.91E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Maximum Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)	Limited Controlled Emissions (tons/yr)
CO ₂	1	117	70.8	0.00	70.8	310	310
CH ₄	28	2.20E-03	1.34E-03	0.00	1.34E-03	5.85E-03	5.85E-03
N ₂ O	265	2.20E-04	1.34E-04	0.00	1.34E-04	5.85E-04	5.85E-04
Total GHG (CO ₂ e)			70.9		70.9	311	311

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit		Refined Products RTU-1	
Stack/Vent Designation Number:	IA 002		
Maximum Rated Capacity:	0.105 million BTU/hr		
Control Equipment:	na		
Fuel Parameters:			
Fuel Type	Natural Gas ONLY		No secondary fuel
% sulfur	na		
% ash	na		
Heat Value:	1020 Btu/cf		
Fuel Consumption Rate:	0.000103 MMcf/hr		
Source of Emission Factors:	AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr		

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
PM	7.60	7.82E-04	3.43E-03	0.00	7.82E-04	3.43E-03
PM ₁₀	7.60	7.82E-04	3.43E-03	0.00	7.82E-04	3.43E-03
PM _{2.5}	7.60	7.82E-04	3.43E-03	0.00	7.82E-04	3.43E-03
SO _x	0.60	6.18E-05	2.71E-04	0.00	6.18E-05	2.71E-04
NO _x	100	1.03E-02	4.51E-02	0.00	1.03E-02	4.51E-02
VOC	5.5	5.66E-04	2.48E-03	0.00	5.66E-04	2.48E-03
CO	84	8.65E-03	3.79E-02	0.00	8.65E-03	3.79E-02
Lead	5.00E-04	5.15E-08	2.25E-07	0.00	5.15E-08	2.25E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.1E-03	2.16E-07	9.47E-07	0.0	2.16E-07	9.47E-07
Dichlorobenzene (25321-22-6)	1.2E-03	1.24E-07	5.41E-07	0.0	1.24E-07	5.41E-07
Formaldehyde (50-00-0)	7.5E-02	7.72E-06	3.38E-05	0.0	7.72E-06	3.38E-05
Hexane (110-54-3)	1.8E+00	1.85E-04	8.12E-04	0.0	1.85E-04	8.12E-04
Naphthalene (91-20-3) ^b	6.1E-04	6.28E-08	2.75E-07	0.0	6.28E-08	2.75E-07
Toluene (108-88-3)	3.4E-03	3.50E-07	1.53E-06	0.0	3.50E-07	1.53E-06
Polycyclic Organic Matter (POM) ^c	8.6E-05	8.89E-09	3.90E-08	0.0	8.89E-09	3.90E-08
Arsenic (7440-38-2)	2.0E-04	2.06E-08	9.02E-08	0.0	2.06E-08	9.02E-08
Beryllium (7440-41-7)	1.2E-05	1.24E-09	5.41E-09	0.0	1.24E-09	5.41E-09
Cadmium (7440-43-9)	1.1E-03	1.13E-07	4.96E-07	0.0	1.13E-07	4.96E-07
Chromium (7440-47-3)	1.4E-03	1.44E-07	6.31E-07	0.0	1.44E-07	6.31E-07
Cobalt (7440-48-4)	8.4E-05	8.65E-09	3.79E-08	0.0	8.65E-09	3.79E-08
Manganese (7439-96-5)	3.8E-04	3.91E-08	1.71E-07	0.0	3.91E-08	1.71E-07
Mercury (7439-97-6)	2.6E-04	2.68E-08	1.17E-07	0.0	2.68E-08	1.17E-07
Nickel (7440-02-0)	2.1E-03	2.16E-07	9.47E-07	0.0	2.16E-07	9.47E-07

Refined Products Upgrade

This unit qualifies as an Insignificant Activity under Minn. R. 7007.1300 Subp. 3(j): <2 tons CO₂, <1 ton NO_x, SO₂, PM/PM₁₀, VOC, and <1000 ton CO₂e

Selenium (7782-49-2)	2.4E-05	2.47E-09	1.08E-08	0.0	2.47E-09	1.08E-08
Totals		1.94E-04	8.51E-04		1.94E-04	8.51E-04

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	12.3	0.00	12.3	54
CH ₄	28	2.20E-03	2.31E-04	0.00	2.31E-04	1.01E-03
N ₂ O	265	2.20E-04	2.31E-05	0.00	2.31E-05	1.01E-04
Total GHG (CO ₂ e)			12.3		12.3	53.8

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Refined Products RTU-2

Stack/Vent Designation Number: IA 003
Maximum Rated Capacity: 0.24 million BTU/hr
Control Equipment: na
Fuel Parameters:
Fuel Type: Natural Gas ONLY No secondary fuel
% sulfur: na
% ash: na
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.000235 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
PM	7.60	1.79E-03	7.83E-03	0.00	1.79E-03	7.83E-03
PM ₁₀	7.60	1.79E-03	7.83E-03	0.00	1.79E-03	7.83E-03
PM _{2.5}	7.60	1.79E-03	7.83E-03	0.00	1.79E-03	7.83E-03
SO _x	0.60	1.41E-04	6.18E-04	0.00	1.41E-04	6.18E-04
NO _x	100	2.35E-02	1.03E-01	0.00	2.35E-02	1.03E-01
VOC	5.5	1.29E-03	5.67E-03	0.00	1.29E-03	5.67E-03
CO	84	1.98E-02	8.66E-02	0.00	1.98E-02	8.66E-02
Lead	5.00E-04	1.18E-07	5.15E-07	0.00	1.18E-07	5.15E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.1E-03	4.94E-07	2.16E-06	0.0	4.94E-07	2.16E-06
Dichlorobenzene (25321-22-6)	1.2E-03	2.82E-07	1.24E-06	0.0	2.82E-07	1.24E-06
Formaldehyde (50-00-0)	7.5E-02	1.76E-05	7.73E-05	0.0	1.76E-05	7.73E-05
Hexane (110-54-3)	1.8E+00	4.24E-04	1.86E-03	0.0	4.24E-04	1.86E-03
Naphthalene (91-20-3) ^b	6.1E-04	1.44E-07	6.29E-07	0.0	1.44E-07	6.29E-07
Toluene (108-88-3)	3.4E-03	8.00E-07	3.50E-06	0.0	8.00E-07	3.50E-06
Polycyclic Organic Matter (POM) ^c	8.6E-05	2.03E-08	8.90E-08	0.0	2.03E-08	8.90E-08
Arsenic (7440-38-2)	2.0E-04	4.71E-08	2.06E-07	0.0	4.71E-08	2.06E-07
Beryllium (7440-41-7)	1.2E-05	2.82E-09	1.24E-08	0.0	2.82E-09	1.24E-08
Cadmium (7440-43-9)	1.1E-03	2.59E-07	1.13E-06	0.0	2.59E-07	1.13E-06
Chromium (7440-47-3)	1.4E-03	3.29E-07	1.44E-06	0.0	3.29E-07	1.44E-06
Cobalt (7440-48-4)	8.4E-05	1.98E-08	8.66E-08	0.0	1.98E-08	8.66E-08
Manganese (7439-96-5)	3.8E-04	8.94E-08	3.92E-07	0.0	8.94E-08	3.92E-07
Mercury (7439-97-6)	2.6E-04	6.12E-08	2.68E-07	0.0	6.12E-08	2.68E-07
Nickel (7440-02-0)	2.1E-03	4.94E-07	2.16E-06	0.0	4.94E-07	2.16E-06
Selenium (7782-49-2)	2.4E-05	5.65E-09	2.47E-08	0.0	5.65E-09	2.47E-08
Totals		4.44E-04	1.95E-03		4.44E-04	1.95E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	28.1	0.00	28.1	123
CH ₄	28	2.20E-03	5.29E-04	0.00	5.29E-04	2.32E-03
N ₂ O	265	2.20E-04	5.29E-05	0.00	5.29E-05	2.32E-04
Total GHG (CO ₂ e)			28.1		28.1	123

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Refined Products ERV-1

Stack/Vent Designation Number: IA 004
Maximum Rated Capacity: 0.1 million BTU/hr
Control Equipment: na
Fuel Parameters:
Fuel Type: Natural Gas ONLY No secondary fuel
% sulfur: na
% ash: na
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.000098 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
PM	7.60	7.45E-04	3.26E-03	0.00	7.45E-04	3.26E-03
PM ₁₀	7.60	7.45E-04	3.26E-03	0.00	7.45E-04	3.26E-03
PM _{2.5}	7.60	7.45E-04	3.26E-03	0.00	7.45E-04	3.26E-03
SO _x	0.60	5.88E-05	2.58E-04	0.00	5.88E-05	2.58E-04
NO _x	100	9.80E-03	4.29E-02	0.00	9.80E-03	4.29E-02
VOC	5.5	5.39E-04	2.36E-03	0.00	5.39E-04	2.36E-03
CO	84	8.24E-03	3.61E-02	0.00	8.24E-03	3.61E-02
Lead	5.00E-04	4.90E-08	2.15E-07	0.00	4.90E-08	2.15E-07

Calculations Summary - HAPs:

Refined Products Upgrade

This unit qualifies as an Insignificant Activity under Minn. R. 7007.1300 Subp. 3(i): <2 tons CO₂, <1 ton NO_x, SO₂, PM/PM10, VOC, and <1000 ton CO₂e

(CAS)	HAP Name	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)		2.1E-03	2.06E-07	9.02E-07	0.0	2.06E-07	9.02E-07
Dichlorobenzene (25321-22-6)		1.2E-03	1.18E-07	5.15E-07	0.0	1.18E-07	5.15E-07
Formaldehyde (50-00-0)		7.5E-02	7.35E-06	3.22E-05	0.0	7.35E-06	3.22E-05
Hexane (110-54-3)		1.8E+00	1.76E-04	7.73E-04	0.0	1.76E-04	7.73E-04
Naphthalene (91-20-3) ^b		6.1E-04	5.98E-08	2.62E-07	0.0	5.98E-08	2.62E-07
Toluene (108-88-3)		3.4E-03	3.33E-07	1.46E-06	0.0	3.33E-07	1.46E-06
Polycyclic Organic Matter (POM) ^c		8.6E-05	8.47E-09	3.71E-08	0.0	8.47E-09	3.71E-08
Arsenic (7440-38-2)		2.0E-04	1.96E-08	8.59E-08	0.0	1.96E-08	8.59E-08
Beryllium (7440-41-7)		1.2E-05	1.18E-09	5.15E-09	0.0	1.18E-09	5.15E-09
Cadmium (7440-43-9)		1.1E-03	1.08E-07	4.72E-07	0.0	1.08E-07	4.72E-07
Chromium (7440-47-3)		1.4E-03	1.37E-07	6.01E-07	0.0	1.37E-07	6.01E-07
Cobalt (7440-48-4)		8.4E-05	8.24E-09	3.61E-08	0.0	8.24E-09	3.61E-08
Manganese (7439-96-5)		3.8E-04	3.73E-08	1.63E-07	0.0	3.73E-08	1.63E-07
Mercury (7439-97-6)		2.6E-04	2.55E-08	1.12E-07	0.0	2.55E-08	1.12E-07
Nickel (7440-02-0)		2.1E-03	2.06E-07	9.02E-07	0.0	2.06E-07	9.02E-07
Selenium (7782-49-2)		2.4E-05	2.35E-09	1.03E-08	0.0	2.35E-09	1.03E-08
Totals			1.85E-04	8.10E-04		1.85E-04	8.10E-04

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^a	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	11.7	0.00	11.7	51
CH ₄	28	2.20E-03	2.20E-04	0.00	2.20E-04	9.66E-04
N ₂ O	265	2.20E-04	2.20E-05	0.00	2.20E-05	9.66E-05
Total GHG (CO ₂ e)			11.7		11.7	51.2

^a Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit: Refined Products ERV-2
 Stack/Vent Designation Number: IA 005
 Maximum Rated Capacity: 0.1 million BTU/hr
 Control Equipment: na
 Fuel Parameters:
 Fuel Type: Natural Gas ONLY No secondary fuel
 % sulfur: na
 % ash: na
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00010 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
PM	7.60	7.45E-04	3.26E-03	0.00	7.45E-04	3.26E-03
PM ₁₀	7.60	7.45E-04	3.26E-03	0.00	7.45E-04	3.26E-03
PM _{2.5}	7.60	7.45E-04	3.26E-03	0.00	7.45E-04	3.26E-03
SO _x	0.60	5.88E-05	2.58E-04	0.00	5.88E-05	2.58E-04
NO _x	100	9.80E-03	4.29E-02	0.00	9.80E-03	4.29E-02
VOC	5.5	5.39E-04	2.36E-03	0.00	5.39E-04	2.36E-03
CO	84	8.24E-03	3.61E-02	0.00	8.24E-03	3.61E-02
Lead	5.00E-04	4.90E-08	2.15E-07	0.00	4.90E-08	2.15E-07

Calculations Summary - HAPs:

(CAS)	HAP Name	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)		2.1E-03	2.06E-07	9.02E-07	0.0	2.06E-07	9.02E-07
Dichlorobenzene (25321-22-6)		1.2E-03	1.18E-07	5.15E-07	0.0	1.18E-07	5.15E-07
Formaldehyde (50-00-0)		7.5E-02	7.35E-06	3.22E-05	0.0	7.35E-06	3.22E-05
Hexane (110-54-3)		1.8E+00	1.76E-04	7.73E-04	0.0	1.76E-04	7.73E-04
Naphthalene (91-20-3) ^b		6.1E-04	5.98E-08	2.62E-07	0.0	5.98E-08	2.62E-07
Toluene (108-88-3)		3.4E-03	3.33E-07	1.46E-06	0.0	3.33E-07	1.46E-06
Polycyclic Organic Matter (POM) ^c		8.6E-05	8.47E-09	3.71E-08	0.0	8.47E-09	3.71E-08
Arsenic (7440-38-2)		2.0E-04	1.96E-08	8.59E-08	0.0	1.96E-08	8.59E-08
Beryllium (7440-41-7)		1.2E-05	1.18E-09	5.15E-09	0.0	1.18E-09	5.15E-09
Cadmium (7440-43-9)		1.1E-03	1.08E-07	4.72E-07	0.0	1.08E-07	4.72E-07
Chromium (7440-47-3)		1.4E-03	1.37E-07	6.01E-07	0.0	1.37E-07	6.01E-07
Cobalt (7440-48-4)		8.4E-05	8.24E-09	3.61E-08	0.0	8.24E-09	3.61E-08
Manganese (7439-96-5)		3.8E-04	3.73E-08	1.63E-07	0.0	3.73E-08	1.63E-07
Mercury (7439-97-6)		2.6E-04	2.55E-08	1.12E-07	0.0	2.55E-08	1.12E-07
Nickel (7440-02-0)		2.1E-03	2.06E-07	9.02E-07	0.0	2.06E-07	9.02E-07
Selenium (7782-49-2)		2.4E-05	2.35E-09	1.03E-08	0.0	2.35E-09	1.03E-08
Totals			1.85E-04	8.10E-04		1.85E-04	8.10E-04

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^a	Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	11.7	0.00	11.7	51.2
CH ₄	28	2.20E-03	2.20E-04	0.00	2.20E-04	9.66E-04
N ₂ O	265	2.20E-04	2.20E-05	0.00	2.20E-05	9.66E-05
Total GHG (CO ₂ e)			11.7		11.7	51.2

^a Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Machinery RM MAU-7
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.464 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00045 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	3.46E-03	1.51E-02	0.00	1.51E-02
PM ₁₀	7.60	3.46E-03	1.51E-02	0.00	1.51E-02
PM _{2.5}	7.60	3.46E-03	1.51E-02	0.00	1.51E-02
SO _x	0.60	2.73E-04	1.20E-03	0.00	1.20E-03
NO _x	100	4.55E-02	1.99E-01	0.00	1.99E-01
VOC	5.50	2.50E-03	1.10E-02	0.00	1.10E-02
CO	84	3.82E-02	1.67E-01	0.00	1.67E-01
Lead	5.00E-04	2.27E-07	9.96E-07	0.00	9.96E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	9.55E-07	4.18E-06	0.00E+00	4.18E-06
Dichlorobenzene (25321-22-6)	1.20E-03	5.46E-07	2.39E-06	0.00E+00	2.39E-06
Formaldehyde (50-00-0)	7.50E-02	3.41E-05	1.49E-04	0.00E+00	1.49E-04
Hexane (110-54-3)	1.80E+00	8.19E-04	3.59E-03	0.00E+00	3.59E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.77E-07	1.22E-06	0.00E+00	1.22E-06
Toluene (108-88-3)	3.40E-03	1.55E-06	6.77E-06	0.00E+00	6.77E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.93E-08	1.72E-07	0.00E+00	1.72E-07
Arsenic (7440-38-2)	2.00E-04	9.10E-08	3.98E-07	0.00E+00	3.98E-07
Beryllium (7440-41-7)	1.20E-05	5.46E-09	2.39E-08	0.00E+00	2.39E-08
Cadmium (7440-43-9)	1.10E-03	5.00E-07	2.19E-06	0.00E+00	2.19E-06
Chromium (7440-47-3)	1.40E-03	6.37E-07	2.79E-06	0.00E+00	2.79E-06
Cobalt (7440-48-4)	8.4E-05	3.82E-08	1.67E-07	0.00E+00	1.67E-07
Manganese (7439-96-5)	3.80E-04	1.73E-07	7.57E-07	0.00E+00	7.57E-07
Mercury (7439-97-6)	2.60E-04	1.18E-07	5.18E-07	0.00E+00	5.18E-07
Nickel (7440-02-0)	2.10E-03	9.55E-07	4.18E-06	0.00E+00	4.18E-06
Selenium (7782-49-2)	2.40E-05	1.09E-08	4.78E-08	0.00E+00	4.78E-08
Totals		8.59E-04	3.76E-03		3.76E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	54.2	0.00	238	238
CH ₄	28	2.20E-03	1.02E-03	0.00	4.48E-03	4.48E-03
N ₂ O	265	2.20E-04	1.02E-04	0.00	4.48E-04	4.48E-04
Total GHG (CO ₂ e)			54.3		238	238

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Machinery RM MAU-8
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 1.064 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0010 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	7.93E-03	3.47E-02	0.00	3.47E-02
PM ₁₀	7.60	7.93E-03	3.47E-02	0.00	3.47E-02
PM _{2.5}	7.60	7.93E-03	3.47E-02	0.00	3.47E-02
SO _x	0.60	6.26E-04	2.74E-03	0.00	2.74E-03
NO _x	100	1.04E-01	4.57E-01	0.00	4.57E-01
VOC	5.50	5.74E-03	2.51E-02	0.00	2.51E-02
CO	84	8.76E-02	3.84E-01	0.00	3.84E-01
Lead	5.00E-04	5.22E-07	2.28E-06	0.00	2.28E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	2.19E-06	9.59E-06	0.00E+00	9.59E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.25E-06	5.48E-06	0.00E+00	5.48E-06
Formaldehyde (50-00-0)	7.50E-02	7.82E-05	3.43E-04	0.00E+00	3.43E-04
Hexane (110-54-3)	1.80E+00	1.88E-03	8.22E-03	0.00E+00	8.22E-03
Naphthalene (91-20-3) ^b	6.10E-04	6.36E-07	2.79E-06	0.00E+00	2.79E-06
Toluene (108-88-3)	3.40E-03	3.55E-06	1.55E-05	0.00E+00	1.55E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	9.01E-08	3.95E-07	0.00E+00	3.95E-07
Arsenic (7440-38-2)	2.00E-04	2.09E-07	9.14E-07	0.00E+00	9.14E-07
Beryllium (7440-41-7)	1.20E-05	1.25E-08	5.48E-08	0.00E+00	5.48E-08
Cadmium (7440-43-9)	1.10E-03	1.15E-06	5.03E-06	0.00E+00	5.03E-06
Chromium (7440-47-3)	1.40E-03	1.46E-06	6.40E-06	0.00E+00	6.40E-06
Cobalt (7440-48-4)	8.4E-05	8.76E-08	3.84E-07	0.00E+00	3.84E-07
Manganese (7439-96-5)	3.80E-04	3.96E-07	1.74E-06	0.00E+00	1.74E-06
Mercury (7439-97-6)	2.60E-04	2.71E-07	1.19E-06	0.00E+00	1.19E-06
Nickel (7440-02-0)	2.10E-03	2.19E-06	9.59E-06	0.00E+00	9.59E-06
Selenium (7782-49-2)	2.40E-05	2.50E-08	1.10E-07	0.00E+00	1.10E-07
Totals		1.97E-03	8.62E-03		8.62E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion"(7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	124	0.00	545	545
CH ₄	28	2.20E-03	2.35E-03	0.00	1.03E-02	1.03E-02
N ₂ O	265	2.20E-04	2.35E-04	0.00	1.03E-03	1.03E-03
Total GHG (CO ₂ e)			124		545	545

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Machinery RM MAU-9
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.871 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00085 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	6.49E-03	2.84E-02	0.00	2.84E-02
PM ₁₀	7.60	6.49E-03	2.84E-02	0.00	2.84E-02
PM _{2.5}	7.60	6.49E-03	2.84E-02	0.00	2.84E-02
SO _x	0.60	5.12E-04	2.24E-03	0.00	2.24E-03
NO _x	100	8.54E-02	3.74E-01	0.00	3.74E-01
VOC	5.50	4.70E-03	2.06E-02	0.00	2.06E-02
CO	84	7.17E-02	3.14E-01	0.00	3.14E-01
Lead	5.00E-04	4.27E-07	1.87E-06	0.00	1.87E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.79E-06	7.85E-06	0.0	7.85E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.02E-06	4.49E-06	0.0	4.49E-06
Formaldehyde (50-00-0)	7.50E-02	6.40E-05	2.81E-04	0.0	2.81E-04
Hexane (110-54-3)	1.80E+00	1.54E-03	6.73E-03	0.0	6.73E-03
Naphthalene (91-20-3) ^b	6.10E-04	5.21E-07	2.28E-06	0.0	2.28E-06
Toluene (108-88-3)	3.40E-03	2.90E-06	1.27E-05	0.0	1.27E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	7.38E-08	3.23E-07	0.0	3.23E-07
Arsenic (7440-38-2)	2.00E-04	1.71E-07	7.48E-07	0.0	7.48E-07
Beryllium (7440-41-7)	1.20E-05	1.02E-08	4.49E-08	0.0	4.49E-08
Cadmium (7440-43-9)	1.10E-03	9.39E-07	4.11E-06	0.0	4.11E-06
Chromium (7440-47-3)	1.40E-03	1.20E-06	5.24E-06	0.0	5.24E-06
Cobalt (7440-48-4)	8.40E-05	7.17E-08	3.14E-07	0.0	3.14E-07
Manganese (7439-96-5)	3.80E-04	3.24E-07	1.42E-06	0.0	1.42E-06
Mercury (7439-97-6)	2.60E-04	2.22E-07	9.72E-07	0.0	9.72E-07
Nickel (7440-02-0)	2.10E-03	1.79E-06	7.85E-06	0.0	7.85E-06
Selenium (7782-49-2)	2.40E-05	2.05E-08	8.98E-08	0.0	8.98E-08
Totals		1.61E-03	7.06E-03		7.06E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	102	0.00	446	446
CH ₄	28	2.20E-03	1.92E-03	0.00	8.41E-03	8.41E-03
N ₂ O	265	2.20E-04	1.92E-04	0.00	8.41E-04	8.41E-04
Total GHG (CO ₂ e)			102		446	446

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - New Boiler Room MAU
Stack/Vent Designation Number: IA
Maximum Rated Capacity: 1.36 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00133 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	1.01E-02	4.44E-02	0.00	4.44E-02
PM ₁₀	7.60	1.01E-02	4.44E-02	0.00	4.44E-02
PM _{2.5}	7.60	1.01E-02	4.44E-02	0.00	4.44E-02
SO _x	0.60	8.01E-04	3.51E-03	0.00	3.51E-03
NO _x	100	1.33E-01	5.84E-01	0.00	5.84E-01
VOC	5.5	7.34E-03	3.21E-02	0.00	3.21E-02
CO	84	1.12E-01	4.91E-01	0.00	4.91E-01
Lead	5.00E-04	6.67E-07	2.92E-06	0.00	2.92E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	2.80E-06	1.23E-05	0.0	1.23E-05
Dichlorobenzene (25321-22-6)	1.20E-03	1.60E-06	7.01E-06	0.0	7.01E-06
Formaldehyde (50-00-0)	7.50E-02	1.00E-04	4.38E-04	0.0	4.38E-04
Hexane (110-54-3)	1.80E+00	2.40E-03	1.05E-02	0.0	1.05E-02
Naphthalene (91-20-3) ^b	6.10E-04	8.14E-07	3.57E-06	0.0	3.57E-06
Toluene (108-88-3)	3.40E-03	4.54E-06	1.99E-05	0.0	1.99E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.15E-07	5.05E-07	0.0	5.05E-07
Arsenic (7440-38-2)	2.00E-04	2.67E-07	1.17E-06	0.0	1.17E-06
Beryllium (7440-41-7)	1.20E-05	1.60E-08	7.01E-08	0.0	7.01E-08
Cadmium (7440-43-9)	1.10E-03	1.47E-06	6.43E-06	0.0	6.43E-06
Chromium (7440-47-3)	1.40E-03	1.87E-06	8.18E-06	0.0	8.18E-06
Cobalt (7440-48-4)	8.40E-05	1.12E-07	4.91E-07	0.0	4.91E-07
Manganese (7439-96-5)	3.80E-04	5.07E-07	2.22E-06	0.0	2.22E-06
Mercury (7439-97-6)	2.60E-04	3.47E-07	1.52E-06	0.0	1.52E-06
Nickel (7440-02-0)	2.10E-03	2.80E-06	1.23E-05	0.0	1.23E-05
Selenium (7782-49-2)	2.40E-05	3.20E-08	1.40E-07	0.0	1.40E-07
Totals		2.52E-03	1.10E-02		1.10E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	159	0.00	697	697
CH ₄	28	2.20E-03	3.00E-03	0.00	1.31E-02	1.31E-02
N ₂ O	265	2.20E-04	3.00E-04	0.00	1.31E-03	1.31E-03
Total GHG (CO ₂ e)			159		698	698

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - KC-7 Makeup air heater (IA)
Stack/Vent Designation Number: STRU 18
Maximum Rated Capacity: 1.004 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** No secondary fuel
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00098 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	7.48E-03	3.28E-02	0.00	3.28E-02
PM ₁₀	7.60	7.48E-03	3.28E-02	0.00	3.28E-02
PM _{2.5}	7.60	7.48E-03	3.28E-02	0.00	3.28E-02
SO _x	0.60	5.91E-04	2.59E-03	0.00	2.59E-03
NO _x	100	9.84E-02	4.31E-01	0.00	4.31E-01
VOC	5.50	5.41E-03	2.37E-02	0.00	2.37E-02
CO	84	8.27E-02	3.62E-01	0.00	3.62E-01
Lead	5.00E-04	4.92E-07	2.16E-06	0.00	2.16E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	2.07E-06	9.05E-06	0.0	9.05E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.18E-06	5.17E-06	0.0	5.17E-06
Formaldehyde (50-00-0)	7.50E-02	7.38E-05	3.23E-04	0.0	3.23E-04
Hexane (110-54-3)	1.80E+00	1.77E-03	7.76E-03	0.0	7.76E-03
Naphthalene (91-20-3) ^b	6.10E-04	6.00E-07	2.63E-06	0.0	2.63E-06
Toluene (108-88-3)	3.40E-03	3.35E-06	1.47E-05	0.0	1.47E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	8.50E-08	3.72E-07	0.0	3.72E-07
Arsenic (7440-38-2)	2.00E-04	1.97E-07	8.62E-07	0.0	8.62E-07
Beryllium (7440-41-7)	1.20E-05	1.18E-08	5.17E-08	0.0	5.17E-08
Cadmium (7440-43-9)	1.10E-03	1.08E-06	4.74E-06	0.0	4.74E-06
Chromium (7440-47-3)	1.40E-03	1.38E-06	6.04E-06	0.0	6.04E-06
Cobalt (7440-48-4)	8.40E-05	8.27E-08	3.62E-07	0.0	3.62E-07
Manganese (7439-96-5)	3.80E-04	3.74E-07	1.64E-06	0.0	1.64E-06
Mercury (7439-97-6)	2.60E-04	2.56E-07	1.12E-06	0.0	1.12E-06
Nickel (7440-02-0)	2.10E-03	2.07E-06	9.05E-06	0.0	9.05E-06
Selenium (7782-49-2)	2.40E-05	2.36E-08	1.03E-07	0.0	1.03E-07
Totals		1.86E-03	8.14E-03		8.14E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	117	0.00	514	514
CH ₄	28	2.20E-03	2.21E-03	0.00	9.69E-03	9.69E-03
N ₂ O	265	2.20E-04	2.21E-04	0.00	9.69E-04	9.69E-04
Total GHG (CO ₂ e)			117		515	515

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Rendering Makeup air heater #1
Stack/Vent Designation Number: STRU19
Maximum Rated Capacity: 1.00 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0010 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
PM ₁₀	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
PM _{2.5}	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
SO _x	0.60	5.88E-04	2.58E-03	0.00	2.58E-03
NO _x	100	9.80E-02	4.29E-01	0.00	4.29E-01
VOC	5.50	5.39E-03	2.36E-02	0.00	2.36E-02
CO	84	8.24E-02	3.61E-01	0.00	3.61E-01
Lead	5.00E-04	4.90E-07	2.15E-06	0.00	2.15E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	2.06E-06	9.02E-06	0.0	9.02E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.18E-06	5.15E-06	0.0	5.15E-06
Formaldehyde (50-00-0)	7.50E-02	7.35E-05	3.22E-04	0.0	3.22E-04
Hexane (110-54-3)	1.80E+00	1.76E-03	7.73E-03	0.0	7.73E-03
Naphthalene (91-20-3) ^b	6.10E-04	5.98E-07	2.62E-06	0.0	2.62E-06
Toluene (108-88-3)	3.40E-03	3.33E-06	1.46E-05	0.0	1.46E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	8.47E-08	3.71E-07	0.0	3.71E-07
Arsenic (7440-38-2)	2.00E-04	1.96E-07	8.59E-07	0.0	8.59E-07
Beryllium (7440-41-7)	1.20E-05	1.18E-08	5.15E-08	0.0	5.15E-08
Cadmium (7440-43-9)	1.10E-03	1.08E-06	4.72E-06	0.0	4.72E-06
Chromium (7440-47-3)	1.40E-03	1.37E-06	6.01E-06	0.0	6.01E-06
Cobalt (7440-48-4)	8.40E-05	8.24E-08	3.61E-07	0.0	3.61E-07
Manganese (7439-96-5)	3.80E-04	3.73E-07	1.63E-06	0.0	1.63E-06
Mercury (7439-97-6)	2.60E-04	2.55E-07	1.12E-06	0.0	1.12E-06
Nickel (7440-02-0)	2.10E-03	2.06E-06	9.02E-06	0.0	9.02E-06
Selenium (7782-49-2)	2.40E-05	2.35E-08	1.03E-07	0.0	1.03E-07
Totals		1.85E-03	8.10E-03		8.10E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	117	0.00	512	512
CH ₄	28	2.20E-03	2.20E-03	0.00	9.66E-03	9.66E-03
N ₂ O	265	2.20E-04	2.20E-04	0.00	9.66E-04	9.66E-04
Total GHG (CO ₂ e)			117		512	512

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - NG Space Heater - Pretreatment #2
Stack/Vent Designation Number: IA
Maximum Rated Capacity: 1 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0010 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
PM ₁₀	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
PM _{2.5}	7.60	7.45E-03	3.26E-02	0.00	3.26E-02
SO _x	0.60	5.88E-04	2.58E-03	0.00	2.58E-03
NO _x	100	9.80E-02	4.29E-01	0.00	4.29E-01
VOC	5.50	5.39E-03	2.36E-02	0.00	2.36E-02
CO	84	8.24E-02	3.61E-01	0.00	3.61E-01
Lead	5.00E-04	4.90E-07	2.15E-06	0.00	2.15E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	2.06E-06	9.02E-06	0.0	9.02E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.18E-06	5.15E-06	0.0	5.15E-06
Formaldehyde (50-00-0)	7.50E-02	7.35E-05	3.22E-04	0.0	3.22E-04
Hexane (110-54-3)	1.80E+00	1.76E-03	7.73E-03	0.0	7.73E-03
Naphthalene (91-20-3) ^b	6.10E-04	5.98E-07	2.62E-06	0.0	2.62E-06
Toluene (108-88-3)	3.40E-03	3.33E-06	1.46E-05	0.0	1.46E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	8.47E-08	3.71E-07	0.0	3.71E-07
Arsenic (7440-38-2)	2.00E-04	1.96E-07	8.59E-07	0.0	8.59E-07
Beryllium (7440-41-7)	1.20E-05	1.18E-08	5.15E-08	0.0	5.15E-08
Cadmium (7440-43-9)	1.10E-03	1.08E-06	4.72E-06	0.0	4.72E-06
Chromium (7440-47-3)	1.40E-03	1.37E-06	6.01E-06	0.0	6.01E-06
Cobalt (7440-48-4)	8.40E-05	8.24E-08	3.61E-07	0.0	3.61E-07
Manganese (7439-96-5)	3.80E-04	3.73E-07	1.63E-06	0.0	1.63E-06
Mercury (7439-97-6)	2.60E-04	2.55E-07	1.12E-06	0.0	1.12E-06
Nickel (7440-02-0)	2.10E-03	2.06E-06	9.02E-06	0.0	9.02E-06
Selenium (7782-49-2)	2.40E-05	2.35E-08	1.03E-07	0.0	1.03E-07
Totals		1.85E-03	8.10E-03		8.10E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	117	0.00	512	512
CH ₄	28	2.20E-03	2.20E-03	0.00	9.66E-03	9.66E-03
N ₂ O	265	2.20E-04	2.20E-04	0.00	9.66E-04	9.66E-04
Total GHG (CO ₂ e)			117		512	512

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - NG Space Heater - N Hold Pen
Stack/Vent Designation Number: IA
Maximum Rated Capacity: 0.32 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00031 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.38E-03	1.04E-02	0.00	1.04E-02
PM ₁₀	7.60	2.38E-03	1.04E-02	0.00	1.04E-02
PM _{2.5}	7.60	2.38E-03	1.04E-02	0.00	1.04E-02
SO _x	0.60	1.88E-04	8.24E-04	0.00	8.24E-04
NO _x	100	3.14E-02	1.37E-01	0.00	1.37E-01
VOC	5.50	1.73E-03	7.56E-03	0.00	7.56E-03
CO	84	2.64E-02	1.15E-01	0.00	1.15E-01
Lead	5.00E-04	1.57E-07	6.87E-07	0.00	6.87E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	6.59E-07	2.89E-06	0.0	2.89E-06
Dichlorobenzene (25321-22-6)	1.20E-03	3.76E-07	1.65E-06	0.0	1.65E-06
Formaldehyde (50-00-0)	7.50E-02	2.35E-05	1.03E-04	0.0	1.03E-04
Hexane (110-54-3)	1.80E+00	5.65E-04	2.47E-03	0.0	2.47E-03
Naphthalene (91-20-3) ^b	6.10E-04	1.91E-07	8.38E-07	0.0	8.38E-07
Toluene (108-88-3)	3.40E-03	1.07E-06	4.67E-06	0.0	4.67E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.71E-08	1.19E-07	0.0	1.19E-07
Arsenic (7440-38-2)	2.00E-04	6.27E-08	2.75E-07	0.0	2.75E-07
Beryllium (7440-41-7)	1.20E-05	3.76E-09	1.65E-08	0.0	1.65E-08
Cadmium (7440-43-9)	1.10E-03	3.45E-07	1.51E-06	0.0	1.51E-06
Chromium (7440-47-3)	1.40E-03	4.39E-07	1.92E-06	0.0	1.92E-06
Cobalt (7440-48-4)	8.40E-05	2.64E-08	1.15E-07	0.0	1.15E-07
Manganese (7439-96-5)	3.80E-04	1.19E-07	5.22E-07	0.0	5.22E-07
Mercury (7439-97-6)	2.60E-04	8.16E-08	3.57E-07	0.0	3.57E-07
Nickel (7440-02-0)	2.10E-03	6.59E-07	2.89E-06	0.0	2.89E-06
Selenium (7782-49-2)	2.40E-05	7.53E-09	3.30E-08	0.0	3.30E-08
Totals		5.92E-04	2.59E-03		2.59E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	37.4	0.00	164	164
CH ₄	28	2.20E-03	7.05E-04	0.00	3.09E-03	3.09E-03
N ₂ O	265	2.20E-04	7.05E-05	0.00	3.09E-04	3.09E-04
Total GHG (CO ₂ e)			37.4		164	164

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - NG Space Heater - N Hold Pen
Stack/Vent Designation Number: IA
Maximum Rated Capacity: 0.32 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00031 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Controlled Emissions (tons/yr)
PM	7.60	2.38E-03	1.04E-02	0.00	1.04E-02
PM ₁₀	7.60	2.38E-03	1.04E-02	0.00	1.04E-02
PM _{2.5}	7.60	2.38E-03	1.04E-02	0.00	1.04E-02
SO _x	0.60	1.88E-04	8.24E-04	0.00	8.24E-04
NO _x	100	3.14E-02	1.37E-01	0.00	1.37E-01
VOC	5.50	1.73E-03	7.56E-03	0.00	7.56E-03
CO	84	2.64E-02	1.15E-01	0.00	1.15E-01
Lead	5.00E-04	1.57E-07	6.87E-07	0.00	6.87E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	6.59E-07	2.89E-06	0.0	2.89E-06
Dichlorobenzene (25321-22-6)	1.20E-03	3.76E-07	1.65E-06	0.0	1.65E-06
Formaldehyde (50-00-0)	7.50E-02	2.35E-05	1.03E-04	0.0	1.03E-04
Hexane (110-54-3)	1.80E+00	5.65E-04	2.47E-03	0.0	2.47E-03
Naphthalene (91-20-3) ^b	6.10E-04	1.91E-07	8.38E-07	0.0	8.38E-07
Toluene (108-88-3)	3.40E-03	1.07E-06	4.67E-06	0.0	4.67E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.71E-08	1.19E-07	0.0	1.19E-07
Arsenic (7440-38-2)	2.00E-04	6.27E-08	2.75E-07	0.0	2.75E-07
Beryllium (7440-41-7)	1.20E-05	3.76E-09	1.65E-08	0.0	1.65E-08
Cadmium (7440-43-9)	1.10E-03	3.45E-07	1.51E-06	0.0	1.51E-06
Chromium (7440-47-3)	1.40E-03	4.39E-07	1.92E-06	0.0	1.92E-06
Cobalt (7440-48-4)	8.40E-05	2.64E-08	1.15E-07	0.0	1.15E-07
Manganese (7439-96-5)	3.80E-04	1.19E-07	5.22E-07	0.0	5.22E-07
Mercury (7439-97-6)	2.60E-04	8.16E-08	3.57E-07	0.0	3.57E-07
Nickel (7440-02-0)	2.10E-03	6.59E-07	2.89E-06	0.0	2.89E-06
Selenium (7782-49-2)	2.40E-05	7.53E-09	3.30E-08	0.0	3.30E-08
Totals		5.92E-04	2.59E-03		2.59E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	37.4	0.00	164	164
CH ₄	28	2.20E-03	7.05E-04	0.00	3.09E-03	3.09E-03
N ₂ O	265	2.20E-04	7.05E-05	0.00	3.09E-04	3.09E-04
Total GHG (CO ₂ e)			37.4		164	164

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - NG Space Heater - Shop
 Stack/Vent Designation Number: IA
 Maximum Rated Capacity: 0.75 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00074 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	5.59E-03	2.45E-02	0.00	2.45E-02
PM ₁₀	7.60	5.59E-03	2.45E-02	0.00	2.45E-02
PM _{2.5}	7.60	5.59E-03	2.45E-02	0.00	2.45E-02
SO _x	0.60	4.41E-04	1.93E-03	0.00	1.93E-03
NO _x	100	7.35E-02	3.22E-01	0.00	3.22E-01
VOC	5.50	4.04E-03	1.77E-02	0.00	1.77E-02
CO	84	6.18E-02	2.71E-01	0.00	2.71E-01
Lead	5.00E-04	3.68E-07	1.61E-06	0.00	1.61E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.54E-06	6.76E-06	0.0	6.76E-06
Dichlorobenzene (25321-22-6)	1.20E-03	8.82E-07	3.86E-06	0.0	3.86E-06
Formaldehyde (50-00-0)	7.50E-02	5.51E-05	2.42E-04	0.0	2.42E-04
Hexane (110-54-3)	1.80E+00	1.32E-03	5.80E-03	0.0	5.80E-03
Naphthalene (91-20-3) ^b	6.10E-04	4.49E-07	1.96E-06	0.0	1.96E-06
Toluene (108-88-3)	3.40E-03	2.50E-06	1.10E-05	0.0	1.10E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	6.35E-08	2.78E-07	0.0	2.78E-07
Arsenic (7440-38-2)	2.00E-04	1.47E-07	6.44E-07	0.0	6.44E-07
Beryllium (7440-41-7)	1.20E-05	8.82E-09	3.86E-08	0.0	3.86E-08
Cadmium (7440-43-9)	1.10E-03	8.09E-07	3.54E-06	0.0	3.54E-06
Chromium (7440-47-3)	1.40E-03	1.03E-06	4.51E-06	0.0	4.51E-06
Cobalt (7440-48-4)	8.40E-05	6.18E-08	2.71E-07	0.0	2.71E-07
Manganese (7439-96-5)	3.80E-04	2.79E-07	1.22E-06	0.0	1.22E-06
Mercury (7439-97-6)	2.60E-04	1.91E-07	8.37E-07	0.0	8.37E-07
Nickel (7440-02-0)	2.10E-03	1.54E-06	6.76E-06	0.0	6.76E-06
Selenium (7782-49-2)	2.40E-05	1.76E-08	7.73E-08	0.0	7.73E-08
Totals		1.39E-03	6.08E-03		6.08E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	87.7	0.00	384	384
CH ₄	28	2.20E-03	1.65E-03	0.00	7.24E-03	7.24E-03
N ₂ O	265	2.20E-04	1.65E-04	0.00	7.24E-04	7.24E-04
Total GHG (CO ₂ e)			87.8		384	384

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - NG Space Heater - Break Room
Stack/Vent Designation Number: IA
Maximum Rated Capacity: 0.125 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.000123 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	9.31E-04	4.08E-03	0.00	4.08E-03
PM ₁₀	7.60	9.31E-04	4.08E-03	0.00	4.08E-03
PM _{2.5}	7.60	9.31E-04	4.08E-03	0.00	4.08E-03
SO _x	0.60	7.35E-05	3.22E-04	0.00	3.22E-04
NO _x	100	1.23E-02	5.37E-02	0.00	5.37E-02
VOC	5.50	6.74E-04	2.95E-03	0.00	2.95E-03
CO	84	1.03E-02	4.51E-02	0.00	4.51E-02
Lead	5.00E-04	6.13E-08	2.68E-07	0.00	2.68E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	2.57E-07	1.13E-06	0.0	1.13E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.47E-07	6.44E-07	0.0	6.44E-07
Formaldehyde (50-00-0)	7.50E-02	9.19E-06	4.03E-05	0.0	4.03E-05
Hexane (110-54-3)	1.80E+00	2.21E-04	9.66E-04	0.0	9.66E-04
Naphthalene (91-20-3) ^b	6.10E-04	7.48E-08	3.27E-07	0.0	3.27E-07
Toluene (108-88-3)	3.40E-03	4.17E-07	1.83E-06	0.0	1.83E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.06E-08	4.64E-08	0.0	4.64E-08
Arsenic (7440-38-2)	2.00E-04	2.45E-08	1.07E-07	0.0	1.07E-07
Beryllium (7440-41-7)	1.20E-05	1.47E-09	6.44E-09	0.0	6.44E-09
Cadmium (7440-43-9)	1.10E-03	1.35E-07	5.90E-07	0.0	5.90E-07
Chromium (7440-47-3)	1.40E-03	1.72E-07	7.51E-07	0.0	7.51E-07
Cobalt (7440-48-4)	8.40E-05	1.03E-08	4.51E-08	0.0	4.51E-08
Manganese (7439-96-5)	3.80E-04	4.66E-08	2.04E-07	0.0	2.04E-07
Mercury (7439-97-6)	2.60E-04	3.19E-08	1.40E-07	0.0	1.40E-07
Nickel (7440-02-0)	2.10E-03	2.57E-07	1.13E-06	0.0	1.13E-06
Selenium (7782-49-2)	2.40E-05	2.94E-09	1.29E-08	0.0	1.29E-08
Totals		2.31E-04	1.01E-03		1.01E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	14.6	0.00	64.0	64.0
CH ₄	28	2.20E-03	2.76E-04	0.00	1.21E-03	1.21E-03
N ₂ O	265	2.20E-04	2.76E-05	0.00	1.21E-04	1.21E-04
Total GHG (CO ₂ e)			14.6		64.1	64.1

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Tankless HW HTR#1 and #2 Refined Products
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.400 million BTU/hr **total**
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00039 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
PM ₁₀	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
PM _{2.5}	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
SO _x	0.60	2.35E-04	1.03E-03	0.00	1.03E-03
NO _x	100	3.92E-02	1.72E-01	0.00	1.72E-01
VOC	5.50	2.16E-03	9.45E-03	0.00	9.45E-03
CO	84	3.29E-02	1.44E-01	0.00	1.44E-01
Lead	5.00E-04	1.96E-07	8.59E-07	0.00	8.59E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	8.24E-07	3.61E-06	0.0	3.61E-06
Dichlorobenzene (25321-22-6)	1.20E-03	4.71E-07	2.06E-06	0.0	2.06E-06
Formaldehyde (50-00-0)	7.50E-02	2.94E-05	1.29E-04	0.0	1.29E-04
Hexane (110-54-3)	1.80E+00	7.06E-04	3.09E-03	0.0	3.09E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.39E-07	1.05E-06	0.0	1.05E-06
Toluene (108-88-3)	3.40E-03	1.33E-06	5.84E-06	0.0	5.84E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.39E-08	1.48E-07	0.0	1.48E-07
Arsenic (7440-38-2)	2.00E-04	7.84E-08	3.44E-07	0.0	3.44E-07
Beryllium (7440-41-7)	1.20E-05	4.71E-09	2.06E-08	0.0	2.06E-08
Cadmium (7440-43-9)	1.10E-03	4.31E-07	1.89E-06	0.0	1.89E-06
Chromium (7440-47-3)	1.40E-03	5.49E-07	2.40E-06	0.0	2.40E-06
Cobalt (7440-48-4)	8.40E-05	3.29E-08	1.44E-07	0.0	1.44E-07
Manganese (7439-96-5)	3.80E-04	1.49E-07	6.53E-07	0.0	6.53E-07
Mercury (7439-97-6)	2.60E-04	1.02E-07	4.47E-07	0.0	4.47E-07
Nickel (7440-02-0)	2.10E-03	8.24E-07	3.61E-06	0.0	3.61E-06
Selenium (7782-49-2)	2.40E-05	9.41E-09	4.12E-08	0.0	4.12E-08
Totals		7.40E-04	3.24E-03		3.24E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	46.8	0.00	205	205
CH ₄	28	2.20E-03	8.82E-04	0.00	3.86E-03	3.86E-03
N ₂ O	265	2.20E-04	8.82E-05	0.00	3.86E-04	3.86E-04
Total GHG (CO ₂ e)			46.8		205	205

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Office Water Heater
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 1.50 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.0015 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	1.12E-02	4.90E-02	0.00	4.90E-02
PM ₁₀	7.60	1.12E-02	4.90E-02	0.00	4.90E-02
PM _{2.5}	7.60	1.12E-02	4.90E-02	0.00	4.90E-02
SO _x	0.60	8.82E-04	3.86E-03	0.00	3.86E-03
NO _x	100	1.47E-01	6.44E-01	0.00	6.44E-01
VOC	5.50	8.09E-03	3.54E-02	0.00	3.54E-02
CO	84	1.24E-01	5.41E-01	0.00	5.41E-01
Lead	5.00E-04	7.35E-07	3.22E-06	0.00	3.22E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	3.09E-06	1.35E-05	0.0	1.35E-05
Dichlorobenzene (25321-22-6)	1.20E-03	1.76E-06	7.73E-06	0.0	7.73E-06
Formaldehyde (50-00-0)	7.50E-02	1.10E-04	4.83E-04	0.0	4.83E-04
Hexane (110-54-3)	1.80E+00	2.65E-03	1.16E-02	0.0	1.16E-02
Naphthalene (91-20-3) ^b	6.10E-04	8.97E-07	3.93E-06	0.0	3.93E-06
Toluene (108-88-3)	3.40E-03	5.00E-06	2.19E-05	0.0	2.19E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.27E-07	5.57E-07	0.0	5.57E-07
Arsenic (7440-38-2)	2.00E-04	2.94E-07	1.29E-06	0.0	1.29E-06
Beryllium (7440-41-7)	1.20E-05	1.76E-08	7.73E-08	0.0	7.73E-08
Cadmium (7440-43-9)	1.10E-03	1.62E-06	7.09E-06	0.0	7.09E-06
Chromium (7440-47-3)	1.40E-03	2.06E-06	9.02E-06	0.0	9.02E-06
Cobalt (7440-48-4)	8.40E-05	1.24E-07	5.41E-07	0.0	5.41E-07
Manganese (7439-96-5)	3.80E-04	5.59E-07	2.45E-06	0.0	2.45E-06
Mercury (7439-97-6)	2.60E-04	3.82E-07	1.67E-06	0.0	1.67E-06
Nickel (7440-02-0)	2.10E-03	3.09E-06	1.35E-05	0.0	1.35E-05
Selenium (7782-49-2)	2.40E-05	3.53E-08	1.55E-07	0.0	1.55E-07
Totals		2.78E-03	1.22E-02		1.22E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	175	0.00	768	768
CH ₄	28	2.20E-03	3.31E-03	0.00	1.45E-02	1.45E-02
N ₂ O	265	2.20E-04	3.31E-04	0.00	1.45E-03	1.45E-03
Total GHG (CO ₂ e)			176		769	769

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Dry Desiccant Unit Conditioner (6)
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 7.80 million BTU/hr **total**
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0076 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	5.81E-02	2.55E-01	0.00	2.55E-01
PM ₁₀	7.60	5.81E-02	2.55E-01	0.00	2.55E-01
PM _{2.5}	7.60	5.81E-02	2.55E-01	0.00	2.55E-01
SO _x	0.60	4.59E-03	2.01E-02	0.00	2.01E-02
NO _x	100	7.65E-01	3.35E+00	0.00	3.35E+00
VOC	5.50	4.21E-02	1.84E-01	0.00	1.84E-01
CO	84	6.42E-01	2.81E+00	0.00	2.81E+00
Lead	5.00E-04	3.82E-06	1.67E-05	0.00	1.67E-05

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.61E-05	7.03E-05	0.0	7.03E-05
Dichlorobenzene (25321-22-6)	1.20E-03	9.18E-06	4.02E-05	0.0	4.02E-05
Formaldehyde (50-00-0)	7.50E-02	5.74E-04	2.51E-03	0.0	2.51E-03
Hexane (110-54-3)	1.80E+00	1.38E-02	6.03E-02	0.0	6.03E-02
Naphthalene (91-20-3) ^b	6.10E-04	4.66E-06	2.04E-05	0.0	2.04E-05
Toluene (108-88-3)	3.40E-03	2.60E-05	1.14E-04	0.0	1.14E-04
Polycyclic Organic Matter (POM) ^c	8.64E-05	6.61E-07	2.89E-06	0.0	2.89E-06
Arsenic (7440-38-2)	2.00E-04	1.53E-06	6.70E-06	0.0	6.70E-06
Beryllium (7440-41-7)	1.20E-05	9.18E-08	4.02E-07	0.0	4.02E-07
Cadmium (7440-43-9)	1.10E-03	8.41E-06	3.68E-05	0.0	3.68E-05
Chromium (7440-47-3)	1.40E-03	1.07E-05	4.69E-05	0.0	4.69E-05
Cobalt (7440-48-4)	8.40E-05	6.42E-07	2.81E-06	0.0	2.81E-06
Manganese (7439-96-5)	3.80E-04	2.91E-06	1.27E-05	0.0	1.27E-05
Mercury (7439-97-6)	2.60E-04	1.99E-06	8.71E-06	0.0	8.71E-06
Nickel (7440-02-0)	2.10E-03	1.61E-05	7.03E-05	0.0	7.03E-05
Selenium (7782-49-2)	2.40E-05	1.84E-07	8.04E-07	0.0	8.04E-07
Totals		1.44E-02	6.32E-02		6.32E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	912	0.00	3,993	3,993
CH ₄	28	2.20E-03	1.72E-02	0.00	7.53E-02	7.53E-02
N ₂ O	265	2.20E-04	1.72E-03	0.00	7.53E-03	7.53E-03
Total GHG (CO ₂ e)			913		3,997	3,997

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Dry Rm #4 Desiccant Unit Conditioner #4-1 and #4-2
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 3.59 million BTU/hr each
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0035 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.68E-02	1.17E-01	0.00	1.17E-01
PM ₁₀	7.60	2.68E-02	1.17E-01	0.00	1.17E-01
PM _{2.5}	7.60	2.68E-02	1.17E-01	0.00	1.17E-01
SO _x	0.60	2.11E-03	9.25E-03	0.00	9.25E-03
NO _x	100.00	3.52E-01	1.54E+00	0.00	1.54E+00
VOC	5.50	1.94E-02	8.48E-02	0.00	8.48E-02
CO	84.00	2.96E-01	1.30E+00	0.00	1.30E+00
Lead	5.00E-04	1.76E-06	7.71E-06	0.00	7.71E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	7.40E-06	3.24E-05	0.0	3.24E-05
Dichlorobenzene (25321-22-6)	1.20E-03	4.23E-06	1.85E-05	0.0	1.85E-05
Formaldehyde (50-00-0)	7.50E-02	2.64E-04	1.16E-03	0.0	1.16E-03
Hexane (110-54-3)	1.80E+00	6.34E-03	2.78E-02	0.0	2.78E-02
Naphthalene (91-20-3) ^b	6.10E-04	2.15E-06	9.41E-06	0.0	9.41E-06
Toluene (108-88-3)	3.40E-03	1.20E-05	5.24E-05	0.0	5.24E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.04E-07	1.33E-06	0.0	1.33E-06
Arsenic (7440-38-2)	2.00E-04	7.04E-07	3.08E-06	0.0	3.08E-06
Beryllium (7440-41-7)	1.20E-05	4.23E-08	1.85E-07	0.0	1.85E-07
Cadmium (7440-43-9)	1.10E-03	3.87E-06	1.70E-05	0.0	1.70E-05
Chromium (7440-47-3)	1.40E-03	4.93E-06	2.16E-05	0.0	2.16E-05
Cobalt (7440-48-4)	8.40E-05	2.96E-07	1.30E-06	0.0	1.30E-06
Manganese (7439-96-5)	3.80E-04	1.34E-06	5.86E-06	0.0	5.86E-06
Mercury (7439-97-6)	2.60E-04	9.16E-07	4.01E-06	0.0	4.01E-06
Nickel (7440-02-0)	2.10E-03	7.40E-06	3.24E-05	0.0	3.24E-05
Selenium (7782-49-2)	2.40E-05	8.45E-08	3.70E-07	0.0	3.70E-07
Totals		6.65E-03	2.91E-02		2.91E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	420	0.00	1,839	1,839
CH ₄	28	2.20E-03	7.92E-03	0.00	3.47E-02	3.47E-02
N ₂ O	265	2.20E-04	7.92E-04	0.00	3.47E-03	3.47E-03
Total GHG (CO ₂ e)			420		1,841	1,841

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Dessicant Air Handler
Stack/Vent Designation Number: IA
Maximum Rated Capacity: 0.273 million BTU/hr
Control Equipment: na
Fuel Paramaters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00027 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	2.03E-03	8.91E-03	0.00	8.91E-03
PM ₁₀	7.60	2.03E-03	8.91E-03	0.00	8.91E-03
PM _{2.5}	7.60	2.03E-03	8.91E-03	0.00	8.91E-03
SO _x	0.60	1.61E-04	7.03E-04	0.00	7.03E-04
NO _x	100	2.68E-02	1.17E-01	0.00	1.17E-01
VOC	5.5	1.47E-03	6.45E-03	0.00	6.45E-03
CO	84	2.25E-02	9.85E-02	0.00	9.85E-02
Lead	5.00E-04	1.34E-07	5.86E-07	0.00	5.86E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
Benzene (71-43-2)	2.10E-03	5.62E-07	2.46E-06	0.0	2.46E-06
Dichlorobenzene (25321-22-6)	1.20E-03	3.21E-07	1.41E-06	0.0	1.41E-06
Formaldehyde (50-00-0)	7.50E-02	2.01E-05	8.79E-05	0.0	8.79E-05
Hexane (110-54-3)	1.80E+00	4.82E-04	2.11E-03	0.0	2.11E-03
Naphthalene (91-20-3) ^b	6.10E-04	1.63E-07	7.15E-07	0.0	7.15E-07
Toluene (108-88-3)	3.40E-03	9.10E-07	3.99E-06	0.0	3.99E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.31E-08	1.01E-07	0.0	1.01E-07
Arsenic (7440-38-2)	2.00E-04	5.35E-08	2.34E-07	0.0	2.34E-07
Beryllium (7440-41-7)	1.20E-05	3.21E-09	1.41E-08	0.0	1.41E-08
Cadmium (7440-43-9)	1.10E-03	2.94E-07	1.29E-06	0.0	1.29E-06
Chromium (7440-47-3)	1.40E-03	3.75E-07	1.64E-06	0.0	1.64E-06
Cobalt (7440-48-4)	8.40E-05	2.25E-08	9.85E-08	0.0	9.85E-08
Manganese (7439-96-5)	3.80E-04	1.02E-07	4.45E-07	0.0	4.45E-07
Mercury (7439-97-6)	2.60E-04	6.96E-08	3.05E-07	0.0	3.05E-07
Nickel (7440-02-0)	2.10E-03	5.62E-07	2.46E-06	0.0	2.46E-06
Selenium (7782-49-2)	2.40E-05	6.42E-09	2.81E-08	0.0	2.81E-08
Totals		5.05E-04	2.21E-03		2.21E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emission Rate (tons/yr)
CO ₂	1	117	31.9	0.00	140	140
CH ₄	28	2.20E-03	6.02E-04	0.00	2.64E-03	2.64E-03
N ₂ O	265	2.20E-04	6.02E-05	0.00	2.64E-04	2.64E-04
Total GHG (CO ₂ e)			31.9		140	140

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - 6 Desiccant Unit Air Conditioners
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 7.8 million BTU/hr **total**
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.0076 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	5.81E-02	2.55E-01	0.00	2.55E-01
PM ₁₀	7.60	5.81E-02	2.55E-01	0.00	2.55E-01
PM _{2.5}	7.60	5.81E-02	2.55E-01	0.00	2.55E-01
SO _x	0.60	4.59E-03	2.01E-02	0.00	2.01E-02
NO _x	100	7.65E-01	3.35E+00	0.00	3.35E+00
VOC	5.50	4.21E-02	1.84E-01	0.00	1.84E-01
CO	84	6.42E-01	2.81E+00	0.00	2.81E+00
Lead	5.00E-04	3.82E-06	1.67E-05	0.00	1.67E-05

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.61E-05	7.03E-05	0.0	7.03E-05
Dichlorobenzene (25321-22-6)	1.20E-03	9.18E-06	4.02E-05	0.0	4.02E-05
Formaldehyde (50-00-0)	7.50E-02	5.74E-04	2.51E-03	0.0	2.51E-03
Hexane (110-54-3)	1.80E+00	1.38E-02	6.03E-02	0.0	6.03E-02
Naphthalene (91-20-3) ^b	6.10E-04	4.66E-06	2.04E-05	0.0	2.04E-05
Toluene (108-88-3)	3.40E-03	2.60E-05	1.14E-04	0.0	1.14E-04
Polycyclic Organic Matter (POM) ^c	8.64E-05	6.61E-07	2.89E-06	0.0	2.89E-06
Arsenic (7440-38-2)	2.00E-04	1.53E-06	6.70E-06	0.0	6.70E-06
Beryllium (7440-41-7)	1.20E-05	9.18E-08	4.02E-07	0.0	4.02E-07
Cadmium (7440-43-9)	1.10E-03	8.41E-06	3.68E-05	0.0	3.68E-05
Chromium (7440-47-3)	1.40E-03	1.07E-05	4.69E-05	0.0	4.69E-05
Cobalt (7440-48-4)	8.40E-05	6.42E-07	2.81E-06	0.0	2.81E-06
Manganese (7439-96-5)	3.80E-04	2.91E-06	1.27E-05	0.0	1.27E-05
Mercury (7439-97-6)	2.60E-04	1.99E-06	8.71E-06	0.0	8.71E-06
Nickel (7440-02-0)	2.10E-03	1.61E-05	7.03E-05	0.0	7.03E-05
Selenium (7782-49-2)	2.40E-05	1.84E-07	8.04E-07	0.0	8.04E-07
Totals		1.44E-02	6.32E-02		6.32E-02

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	912	0.00	3,993	3,993
CH ₄	28	2.20E-03	1.72E-02	0.00	7.53E-02	7.53E-02
N ₂ O	265	2.20E-04	1.72E-03	0.00	7.53E-03	7.53E-03
Total GHG (CO ₂ e)			913		3,997	3,997

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - MP-130 Dessicant Unit
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.86 million BTU/hr
 Control Equipment: na
 Fuel Paramaters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00084 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	6.41E-03	2.81E-02	0.00	2.81E-02
PM ₁₀	7.60	6.41E-03	2.81E-02	0.00	2.81E-02
PM _{2.5}	7.60	6.41E-03	2.81E-02	0.00	2.81E-02
SO _x	0.60	5.06E-04	2.22E-03	0.00	2.22E-03
NO _x	100	8.43E-02	3.69E-01	0.00	3.69E-01
VOC	5.50	4.64E-03	2.03E-02	0.00	2.03E-02
CO	84	7.08E-02	3.10E-01	0.00	3.10E-01
Lead	5.00E-04	4.22E-07	1.85E-06	0.00	1.85E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.77E-06	7.76E-06	0.0	7.76E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.01E-06	4.43E-06	0.0	4.43E-06
Formaldehyde (50-00-0)	7.50E-02	6.32E-05	2.77E-04	0.0	2.77E-04
Hexane (110-54-3)	1.80E+00	1.52E-03	6.65E-03	0.0	6.65E-03
Naphthalene (91-20-3) ^b	6.10E-04	5.14E-07	2.25E-06	0.0	2.25E-06
Toluene (108-88-3)	3.40E-03	2.87E-06	1.26E-05	0.0	1.26E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	7.28E-08	3.19E-07	0.0	3.19E-07
Arsenic (7440-38-2)	2.00E-04	1.69E-07	7.39E-07	0.0	7.39E-07
Beryllium (7440-41-7)	1.20E-05	1.01E-08	4.43E-08	0.0	4.43E-08
Cadmium (7440-43-9)	1.10E-03	9.27E-07	4.06E-06	0.0	4.06E-06
Chromium (7440-47-3)	1.40E-03	1.18E-06	5.17E-06	0.0	5.17E-06
Cobalt (7440-48-4)	8.40E-05	7.08E-08	3.10E-07	0.0	3.10E-07
Manganese (7439-96-5)	3.80E-04	3.20E-07	1.40E-06	0.0	1.40E-06
Mercury (7439-97-6)	2.60E-04	2.19E-07	9.60E-07	0.0	9.60E-07
Nickel (7440-02-0)	2.10E-03	1.77E-06	7.76E-06	0.0	7.76E-06
Selenium (7782-49-2)	2.40E-05	2.02E-08	8.86E-08	0.0	8.86E-08
Totals		1.59E-03	6.97E-03		6.97E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" 7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	101	0.00	440	440
CH ₄	28	2.20E-03	1.90E-03	0.00	8.30E-03	8.30E-03
N ₂ O	265	2.20E-04	1.90E-04	0.00	8.30E-04	8.30E-04
Total GHG (CO ₂ e)			101		441	441

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - DS 111 Hall Desiccant
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.40 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00039 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
PM ₁₀	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
PM _{2.5}	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
SO _x	0.60	2.35E-04	1.03E-03	0.00	1.03E-03
NO _x	100	3.92E-02	1.72E-01	0.00	1.72E-01
VOC	5.50	2.16E-03	9.45E-03	0.00	9.45E-03
CO	84	3.29E-02	1.44E-01	0.00	1.44E-01
Lead	5.00E-04	1.96E-07	8.59E-07	0.00	8.59E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	8.24E-07	3.61E-06	0.0	3.61E-06
Dichlorobenzene (25321-22-6)	1.20E-03	4.71E-07	2.06E-06	0.0	2.06E-06
Formaldehyde (50-00-0)	7.50E-02	2.94E-05	1.29E-04	0.0	1.29E-04
Hexane (110-54-3)	1.80E+00	7.06E-04	3.09E-03	0.0	3.09E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.39E-07	1.05E-06	0.0	1.05E-06
Toluene (108-88-3)	3.40E-03	1.33E-06	5.84E-06	0.0	5.84E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.39E-08	1.48E-07	0.0	1.48E-07
Arsenic (7440-38-2)	2.00E-04	7.84E-08	3.44E-07	0.0	3.44E-07
Beryllium (7440-41-7)	1.20E-05	4.71E-09	2.06E-08	0.0	2.06E-08
Cadmium (7440-43-9)	1.10E-03	4.31E-07	1.89E-06	0.0	1.89E-06
Chromium (7440-47-3)	1.40E-03	5.49E-07	2.40E-06	0.0	2.40E-06
Cobalt (7440-48-4)	8.40E-05	3.29E-08	1.44E-07	0.0	1.44E-07
Manganese (7439-96-5)	3.80E-04	1.49E-07	6.53E-07	0.0	6.53E-07
Mercury (7439-97-6)	2.60E-04	1.02E-07	4.47E-07	0.0	4.47E-07
Nickel (7440-02-0)	2.10E-03	8.24E-07	3.61E-06	0.0	3.61E-06
Selenium (7782-49-2)	2.40E-05	9.41E-09	4.12E-08	0.0	4.12E-08
Totals		7.40E-04	3.24E-03		3.24E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	46.8	0.00	205	205
CH ₄	28	2.20E-03	8.82E-04	0.00	3.86E-03	3.86E-03
N ₂ O	265	2.20E-04	8.82E-05	0.00	3.86E-04	3.86E-04
Total GHG (CO ₂ e)			46.8		205	205

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Trim Blender Dessicant
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.36 million BTU/hr
Control Equipment: na
Fuel Paramaters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00035 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.68E-03	1.17E-02	0.00	1.17E-02
PM ₁₀	7.60	2.68E-03	1.17E-02	0.00	1.17E-02
PM _{2.5}	7.60	2.68E-03	1.17E-02	0.00	1.17E-02
SO _x	0.60	2.12E-04	9.28E-04	0.00	9.28E-04
NO _x	100	3.53E-02	1.55E-01	0.00	1.55E-01
VOC	5.50	1.94E-03	8.50E-03	0.00	8.50E-03
CO	84	2.96E-02	1.30E-01	0.00	1.30E-01
Lead	5.00E-04	1.76E-07	7.73E-07	0.00	7.73E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	7.41E-07	3.25E-06	0.0	3.25E-06
Dichlorobenzene (25321-22-6)	1.20E-03	4.24E-07	1.86E-06	0.0	1.86E-06
Formaldehyde (50-00-0)	7.50E-02	2.65E-05	1.16E-04	0.0	1.16E-04
Hexane (110-54-3)	1.80E+00	6.35E-04	2.78E-03	0.0	2.78E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.15E-07	9.43E-07	0.0	9.43E-07
Toluene (108-88-3)	3.40E-03	1.20E-06	5.26E-06	0.0	5.26E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.05E-08	1.34E-07	0.0	1.34E-07
Arsenic (7440-38-2)	2.00E-04	7.06E-08	3.09E-07	0.0	3.09E-07
Beryllium (7440-41-7)	1.20E-05	4.24E-09	1.86E-08	0.0	1.86E-08
Cadmium (7440-43-9)	1.10E-03	3.88E-07	1.70E-06	0.0	1.70E-06
Chromium (7440-47-3)	1.40E-03	4.94E-07	2.16E-06	0.0	2.16E-06
Cobalt (7440-48-4)	8.40E-05	2.96E-08	1.30E-07	0.0	1.30E-07
Manganese (7439-96-5)	3.80E-04	1.34E-07	5.87E-07	0.0	5.87E-07
Mercury (7439-97-6)	2.60E-04	9.18E-08	4.02E-07	0.0	4.02E-07
Nickel (7440-02-0)	2.10E-03	7.41E-07	3.25E-06	0.0	3.25E-06
Selenium (7782-49-2)	2.40E-05	8.47E-09	3.71E-08	0.0	3.71E-08
Totals		6.66E-04	2.92E-03		2.92E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	42.1	0.00	184	184
CH ₄	28	2.20E-03	7.94E-04	0.00	3.48E-03	3.48E-03
N ₂ O	265	2.20E-04	7.94E-05	0.00	3.48E-04	3.48E-04
Total GHG (CO ₂ e)			42.1		184	184

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - DS dehumidification
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.720 million BTU/hr **total**
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00071 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	5.36E-03	2.35E-02	0.00	2.35E-02
PM ₁₀	7.60	5.36E-03	2.35E-02	0.00	2.35E-02
PM _{2.5}	7.60	5.36E-03	2.35E-02	0.00	2.35E-02
SO _x	0.60	4.24E-04	1.86E-03	0.00	1.86E-03
NO _x	100	7.06E-02	3.09E-01	0.00	3.09E-01
VOC	5.5	3.88E-03	1.70E-02	0.00	1.70E-02
CO	84	5.93E-02	0.26	0.00	2.60E-01
Lead	5.00E-04	3.53E-07	1.55E-06	0.00	1.55E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.48E-06	6.49E-06	0.0	6.49E-06
Dichlorobenzene (25321-22-6)	1.20E-03	8.47E-07	3.71E-06	0.0	3.71E-06
Formaldehyde (50-00-0)	7.50E-02	5.29E-05	2.32E-04	0.0	2.32E-04
Hexane (110-54-3)	1.80E+00	1.27E-03	5.57E-03	0.0	5.57E-03
Naphthalene (91-20-3) ^b	6.10E-04	4.31E-07	1.89E-06	0.0	1.89E-06
Toluene (108-88-3)	3.40E-03	2.40E-06	1.05E-05	0.0	1.05E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	6.10E-08	2.67E-07	0.0	2.67E-07
Arsenic (7440-38-2)	2.00E-04	1.41E-07	6.18E-07	0.0	6.18E-07
Beryllium (7440-41-7)	1.20E-05	8.47E-09	3.71E-08	0.0	3.71E-08
Cadmium (7440-43-9)	1.10E-03	7.76E-07	3.40E-06	0.0	3.40E-06
Chromium (7440-47-3)	1.40E-03	9.88E-07	4.33E-06	0.0	4.33E-06
Cobalt (7440-48-4)	8.40E-05	5.93E-08	2.60E-07	0.0	2.60E-07
Manganese (7439-96-5)	3.80E-04	2.68E-07	1.17E-06	0.0	1.17E-06
Mercury (7439-97-6)	2.60E-04	1.84E-07	8.04E-07	0.0	8.04E-07
Nickel (7440-02-0)	2.10E-03	1.48E-06	6.49E-06	0.0	6.49E-06
Selenium (7782-49-2)	2.40E-05	1.69E-08	7.42E-08	0.0	7.42E-08
Totals		1.33E-03	5.84E-03		5.84E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	84	0.00	369	369
CH ₄	28	2.20E-03	1.59E-03	0.00	6.95E-03	6.95E-03
N ₂ O	265	2.20E-04	1.59E-04	0.00	6.95E-04	6.95E-04
Total GHG (CO ₂ e)			84		369	369

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Office RTU 1
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.39 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00038 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emission Rate (tons/yr)
PM	7.60	2.91E-03	1.27E-02	0.00	1.27E-02
PM ₁₀	7.60	2.91E-03	1.27E-02	0.00	1.27E-02
PM _{2.5}	7.60	2.91E-03	1.27E-02	0.00	1.27E-02
SO _x	0.60	2.29E-04	1.00E-03	0.00	1.00E-03
NO _x	100	3.82E-02	1.67E-01	0.00	1.67E-01
VOC	5.50	2.10E-03	9.21E-03	0.00	9.21E-03
CO	84	3.21E-02	1.41E-01	0.00	1.41E-01
Lead	5.00E-04	1.91E-07	8.37E-07	0.00	8.37E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	8.03E-07	3.52E-06	0.0	3.52E-06
Dichlorobenzene (25321-22-6)	1.20E-03	4.59E-07	2.01E-06	0.0	2.01E-06
Formaldehyde (50-00-0)	7.50E-02	2.87E-05	1.26E-04	0.0	1.26E-04
Hexane (110-54-3)	1.80E+00	6.88E-04	3.01E-03	0.0	3.01E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.33E-07	1.02E-06	0.0	1.02E-06
Toluene (108-88-3)	3.40E-03	1.30E-06	5.69E-06	0.0	5.69E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.30E-08	1.45E-07	0.0	1.45E-07
Arsenic (7440-38-2)	2.00E-04	7.65E-08	3.35E-07	0.0	3.35E-07
Beryllium (7440-41-7)	1.20E-05	4.59E-09	2.01E-08	0.0	2.01E-08
Cadmium (7440-43-9)	1.10E-03	4.21E-07	1.84E-06	0.0	1.84E-06
Chromium (7440-47-3)	1.40E-03	5.35E-07	2.34E-06	0.0	2.34E-06
Cobalt (7440-48-4)	8.40E-05	3.21E-08	1.41E-07	0.0	1.41E-07
Manganese (7439-96-5)	3.80E-04	1.45E-07	6.36E-07	0.0	6.36E-07
Mercury (7439-97-6)	2.60E-04	9.94E-08	4.35E-07	0.0	4.35E-07
Nickel (7440-02-0)	2.10E-03	8.03E-07	3.52E-06	0.0	3.52E-06
Selenium (7782-49-2)	2.40E-05	9.18E-09	4.02E-08	0.0	4.02E-08
Totals		7.22E-04	3.16E-03		3.16E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emissions (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	45.6	0.00	200	200
CH ₄	28	2.20E-03	8.60E-04	0.00	3.77E-03	3.77E-03
N ₂ O	265	2.20E-04	8.60E-05	0.00	3.77E-04	3.77E-04
Total GHG (CO ₂ e)			45.6		200	200

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Office RTU 2
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.27 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00026 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.01E-03	8.81E-03	0.00	8.81E-03
PM ₁₀	7.60	2.01E-03	8.81E-03	0.00	8.81E-03
PM _{2.5}	7.60	2.01E-03	8.81E-03	0.00	8.81E-03
SO _x	0.60	1.59E-04	6.96E-04	0.00	6.96E-04
NO _x	100	2.65E-02	1.16E-01	0.00	1.16E-01
VOC	5.50	1.46E-03	6.38E-03	0.00	6.38E-03
CO	84	2.22E-02	9.74E-02	0.00	9.74E-02
Lead	5.00E-04	1.32E-07	5.80E-07	0.00	5.80E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	5.56E-07	2.43E-06	0.0	2.43E-06
Dichlorobenzene (25321-22-6)	1.20E-03	3.18E-07	1.39E-06	0.0	1.39E-06
Formaldehyde (50-00-0)	7.50E-02	1.99E-05	8.70E-05	0.0	8.70E-05
Hexane (110-54-3)	1.80E+00	4.76E-04	2.09E-03	0.0	2.09E-03
Naphthalene (91-20-3) ^b	6.10E-04	1.61E-07	7.07E-07	0.0	7.07E-07
Toluene (108-88-3)	3.40E-03	9.00E-07	3.94E-06	0.0	3.94E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.29E-08	1.00E-07	0.0	1.00E-07
Arsenic (7440-38-2)	2.00E-04	5.29E-08	2.32E-07	0.0	2.32E-07
Beryllium (7440-41-7)	1.20E-05	3.18E-09	1.39E-08	0.0	1.39E-08
Cadmium (7440-43-9)	1.10E-03	2.91E-07	1.28E-06	0.0	1.28E-06
Chromium (7440-47-3)	1.40E-03	3.71E-07	1.62E-06	0.0	1.62E-06
Cobalt (7440-48-4)	8.40E-05	2.22E-08	9.74E-08	0.0	9.74E-08
Manganese (7439-96-5)	3.80E-04	1.01E-07	4.41E-07	0.0	4.41E-07
Mercury (7439-97-6)	2.60E-04	6.88E-08	3.01E-07	0.0	3.01E-07
Nickel (7440-02-0)	2.10E-03	5.56E-07	2.43E-06	0.0	2.43E-06
Selenium (7782-49-2)	2.40E-05	6.35E-09	2.78E-08	0.0	2.78E-08
Totals		5.00E-04	2.19E-03		2.19E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	31.6	0.00	138	138
CH ₄	28	2.20E-03	5.95E-04	0.00	2.61E-03	2.61E-03
N ₂ O	265	2.20E-04	5.95E-05	0.00	2.61E-04	2.61E-04
Total GHG (CO ₂ e)			31.6		138	138

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Office RTU 3
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.57 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00056 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	4.25E-03	1.86E-02	0.00	1.86E-02
PM ₁₀	7.60	4.25E-03	1.86E-02	0.00	1.86E-02
PM _{2.5}	7.60	4.25E-03	1.86E-02	0.00	1.86E-02
SO _x	0.60	3.35E-04	1.47E-03	0.00	1.47E-03
NO _x	100	5.59E-02	2.45E-01	0.00	2.45E-01
VOC	5.50	3.07E-03	1.35E-02	0.00	1.35E-02
CO	84	4.69E-02	2.06E-01	0.00	2.06E-01
Lead	5.00E-04	2.79E-07	1.22E-06	0.00	1.22E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.17E-06	5.14E-06	0.0	5.14E-06
Dichlorobenzene (25321-22-6)	1.20E-03	6.71E-07	2.94E-06	0.0	2.94E-06
Formaldehyde (50-00-0)	7.50E-02	4.19E-05	1.84E-04	0.0	1.84E-04
Hexane (110-54-3)	1.80E+00	1.01E-03	4.41E-03	0.0	4.41E-03
Naphthalene (91-20-3) ^b	6.10E-04	3.41E-07	1.49E-06	0.0	1.49E-06
Toluene (108-88-3)	3.40E-03	1.90E-06	8.32E-06	0.0	8.32E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	4.83E-08	2.11E-07	0.0	2.11E-07
Arsenic (7440-38-2)	2.00E-04	1.12E-07	4.90E-07	0.0	4.90E-07
Beryllium (7440-41-7)	1.20E-05	6.71E-09	2.94E-08	0.0	2.94E-08
Cadmium (7440-43-9)	1.10E-03	6.15E-07	2.69E-06	0.0	2.69E-06
Chromium (7440-47-3)	1.40E-03	7.82E-07	3.43E-06	0.0	3.43E-06
Cobalt (7440-48-4)	8.40E-05	4.69E-08	2.06E-07	0.0	2.06E-07
Manganese (7439-96-5)	3.80E-04	2.12E-07	9.30E-07	0.0	9.30E-07
Mercury (7439-97-6)	2.60E-04	1.45E-07	6.36E-07	0.0	6.36E-07
Nickel (7440-02-0)	2.10E-03	1.17E-06	5.14E-06	0.0	5.14E-06
Selenium (7782-49-2)	2.40E-05	1.34E-08	5.87E-08	0.0	5.87E-08
Totals		1.05E-03	4.62E-03		4.62E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	66.6	0.00	292	292
CH ₄	28	2.20E-03	1.26E-03	0.00	5.50E-03	5.50E-03
N ₂ O	265	2.20E-04	1.26E-04	0.00	5.50E-04	5.50E-04
Total GHG (CO ₂ e)			66.7		292	292

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Office RTU 4
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.58 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00057 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	4.31E-03	1.89E-02	0.00	1.89E-02
PM ₁₀	7.60	4.31E-03	1.89E-02	0.00	1.89E-02
PM _{2.5}	7.60	4.31E-03	1.89E-02	0.00	1.89E-02
SO _x	0.60	3.40E-04	1.49E-03	0.00	1.49E-03
NO _x	100	5.67E-02	2.48E-01	0.00	2.48E-01
VOC	5.50	3.12E-03	1.37E-02	0.00	1.37E-02
CO	84	4.76E-02	2.08E-01	0.00	2.08E-01
Lead	5.00E-04	2.83E-07	1.24E-06	0.00	1.24E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	1.19E-06	5.21E-06	0.0	5.21E-06
Dichlorobenzene (25321-22-6)	1.20E-03	6.80E-07	2.98E-06	0.0	2.98E-06
Formaldehyde (50-00-0)	7.50E-02	4.25E-05	1.86E-04	0.0	1.86E-04
Hexane (110-54-3)	1.80E+00	1.02E-03	4.47E-03	0.0	4.47E-03
Naphthalene (91-20-3) ^b	6.10E-04	3.46E-07	1.51E-06	0.0	1.51E-06
Toluene (108-88-3)	3.40E-03	1.93E-06	8.44E-06	0.0	8.44E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	4.90E-08	2.14E-07	0.0	2.14E-07
Arsenic (7440-38-2)	2.00E-04	1.13E-07	4.96E-07	0.0	4.96E-07
Beryllium (7440-41-7)	1.20E-05	6.80E-09	2.98E-08	0.0	2.98E-08
Cadmium (7440-43-9)	1.10E-03	6.23E-07	2.73E-06	0.0	2.73E-06
Chromium (7440-47-3)	1.40E-03	7.93E-07	3.47E-06	0.0	3.47E-06
Cobalt (7440-48-4)	8.40E-05	4.76E-08	2.08E-07	0.0	2.08E-07
Manganese (7439-96-5)	3.80E-04	2.15E-07	9.43E-07	0.0	9.43E-07
Mercury (7439-97-6)	2.60E-04	1.47E-07	6.45E-07	0.0	6.45E-07
Nickel (7440-02-0)	2.10E-03	1.19E-06	5.21E-06	0.0	5.21E-06
Selenium (7782-49-2)	2.40E-05	1.36E-08	5.96E-08	0.0	5.96E-08
Totals		1.07E-03	4.68E-03		4.68E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	67.6	0.00	296	296
CH ₄	28	2.20E-03	1.27E-03	0.00	5.58E-03	5.58E-03
N ₂ O	265	2.20E-04	1.27E-04	0.00	5.58E-04	5.58E-04
Total GHG (CO ₂ e)			67.6		296	296

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Animal Welfare & Handling - RTU-1
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.200 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00020 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	1.49E-03	6.53E-03	0.00	6.53E-03
PM ₁₀	7.60	1.49E-03	6.53E-03	0.00	6.53E-03
PM _{2.5}	7.60	1.49E-03	6.53E-03	0.00	6.53E-03
SO _x	0.60	1.18E-04	5.15E-04	0.00	5.15E-04
NO _x	100	1.96E-02	8.59E-02	0.00	8.59E-02
VOC	5.50	1.08E-03	4.72E-03	0.00	4.72E-03
CO	84	1.65E-02	7.21E-02	0.00	7.21E-02
Lead	5.00E-04	9.80E-08	4.29E-07	0.00	4.29E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	4.12E-07	1.80E-06	0.0	1.80E-06
Dichlorobenzene (25321-22-6)	1.20E-03	2.35E-07	1.03E-06	0.0	1.03E-06
Formaldehyde (50-00-0)	7.50E-02	1.47E-05	6.44E-05	0.0	6.44E-05
Hexane (110-54-3)	1.80E+00	3.53E-04	1.55E-03	0.0	1.55E-03
Naphthalene (91-20-3) ^b	6.10E-04	1.20E-07	5.24E-07	0.0	5.24E-07
Toluene (108-88-3)	3.40E-03	6.67E-07	2.92E-06	0.0	2.92E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.69E-08	7.42E-08	0.0	7.42E-08
Arsenic (7440-38-2)	2.00E-04	3.92E-08	1.72E-07	0.0	1.72E-07
Beryllium (7440-41-7)	1.20E-05	2.35E-09	1.03E-08	0.0	1.03E-08
Cadmium (7440-43-9)	1.10E-03	2.16E-07	9.45E-07	0.0	9.45E-07
Chromium (7440-47-3)	1.40E-03	2.75E-07	1.20E-06	0.0	1.20E-06
Cobalt (7440-48-4)	8.40E-05	1.65E-08	7.21E-08	0.0	7.21E-08
Manganese (7439-96-5)	3.80E-04	7.45E-08	3.26E-07	0.0	3.26E-07
Mercury (7439-97-6)	2.60E-04	5.10E-08	2.23E-07	0.0	2.23E-07
Nickel (7440-02-0)	2.10E-03	4.12E-07	1.80E-06	0.0	1.80E-06
Selenium (7782-49-2)	2.40E-05	4.71E-09	2.06E-08	0.0	2.06E-08
Totals		3.70E-04	1.62E-03		1.62E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	23.4	0.00	102	102
CH ₄	28	2.20E-03	4.41E-04	0.00	1.93E-03	1.93E-03
N ₂ O	265	2.20E-04	4.41E-05	0.00	1.93E-04	1.93E-04
Total GHG (CO ₂ e)			23.4		102	102

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Animal Welfare & Handling - RTU-2
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.360 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00035 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.68E-03	1.17E-02	0.00	1.17E-02
PM ₁₀	7.60	2.68E-03	1.17E-02	0.00	1.17E-02
PM _{2.5}	7.60	2.68E-03	1.17E-02	0.00	1.17E-02
SO _x	0.60	2.12E-04	9.28E-04	0.00	9.28E-04
NO _x	100	3.53E-02	1.55E-01	0.00	1.55E-01
VOC	5.50	1.94E-03	8.50E-03	0.00	8.50E-03
CO	84	2.96E-02	1.30E-01	0.00	1.30E-01
Lead	5.00E-04	1.76E-07	7.73E-07	0.00	7.73E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	7.41E-07	3.25E-06	0.0	3.25E-06
Dichlorobenzene (25321-22-6)	1.20E-03	4.24E-07	1.86E-06	0.0	1.86E-06
Formaldehyde (50-00-0)	7.50E-02	2.65E-05	1.16E-04	0.0	1.16E-04
Hexane (110-54-3)	1.80E+00	6.35E-04	2.78E-03	0.0	2.78E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.15E-07	9.43E-07	0.0	9.43E-07
Toluene (108-88-3)	3.40E-03	1.20E-06	5.26E-06	0.0	5.26E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.05E-08	1.34E-07	0.0	1.34E-07
Arsenic (7440-38-2)	2.00E-04	7.06E-08	3.09E-07	0.0	3.09E-07
Beryllium (7440-41-7)	1.20E-05	4.24E-09	1.86E-08	0.0	1.86E-08
Cadmium (7440-43-9)	1.10E-03	3.88E-07	1.70E-06	0.0	1.70E-06
Chromium (7440-47-3)	1.40E-03	4.94E-07	2.16E-06	0.0	2.16E-06
Cobalt (7440-48-4)	8.40E-05	2.96E-08	1.30E-07	0.0	1.30E-07
Manganese (7439-96-5)	3.80E-04	1.34E-07	5.87E-07	0.0	5.87E-07
Mercury (7439-97-6)	2.60E-04	9.18E-08	4.02E-07	0.0	4.02E-07
Nickel (7440-02-0)	2.10E-03	7.41E-07	3.25E-06	0.0	3.25E-06
Selenium (7782-49-2)	2.40E-05	8.47E-09	3.71E-08	0.0	3.71E-08
Totals		6.66E-04	2.92E-03		2.92E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	42.1	0.00	184	184
CH ₄	28	2.20E-03	7.94E-04	0.00	3.48E-03	3.48E-03
N ₂ O	265	2.20E-04	7.94E-05	0.00	3.48E-04	3.48E-04
Total GHG (CO ₂ e)			42.1		184	184

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - GP
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.98 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.0010 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	7.30E-03	3.20E-02	0.00	3.20E-02
PM ₁₀	7.60	7.30E-03	3.20E-02	0.00	3.20E-02
PM _{2.5}	7.60	7.30E-03	3.20E-02	0.00	3.20E-02
SO _x	0.60	5.76E-04	2.52E-03	0.00	2.52E-03
NO _x	100	9.61E-02	4.21E-01	0.00	4.21E-01
VOC	5.50	5.28E-03	2.31E-02	0.00	2.31E-02
CO	84	8.07E-02	3.53E-01	0.00	3.53E-01
Lead	5.00E-04	4.80E-07	2.10E-06	0.00	2.10E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	2.02E-06	8.84E-06	0.0	8.84E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.15E-06	5.05E-06	0.0	5.05E-06
Formaldehyde (50-00-0)	7.50E-02	7.21E-05	3.16E-04	0.0	3.16E-04
Hexane (110-54-3)	1.80E+00	1.73E-03	7.57E-03	0.0	7.57E-03
Naphthalene (91-20-3) ^b	6.10E-04	5.86E-07	2.57E-06	0.0	2.57E-06
Toluene (108-88-3)	3.40E-03	3.27E-06	1.43E-05	0.0	1.43E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	8.30E-08	3.64E-07	0.0	3.64E-07
Arsenic (7440-38-2)	2.00E-04	1.92E-07	8.42E-07	0.0	8.42E-07
Beryllium (7440-41-7)	1.20E-05	1.15E-08	5.05E-08	0.0	5.05E-08
Cadmium (7440-43-9)	1.10E-03	1.06E-06	4.63E-06	0.0	4.63E-06
Chromium (7440-47-3)	1.40E-03	1.35E-06	5.89E-06	0.0	5.89E-06
Cobalt (7440-48-4)	8.40E-05	8.07E-08	3.53E-07	0.0	3.53E-07
Manganese (7439-96-5)	3.80E-04	3.65E-07	1.60E-06	0.0	1.60E-06
Mercury (7439-97-6)	2.60E-04	2.50E-07	1.09E-06	0.0	1.09E-06
Nickel (7440-02-0)	2.10E-03	2.02E-06	8.84E-06	0.0	8.84E-06
Selenium (7782-49-2)	2.40E-05	2.31E-08	1.01E-07	0.0	1.01E-07
Totals		1.81E-03	7.94E-03		7.94E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	115	0.00	502	502
CH ₄	28	2.20E-03	2.16E-03	0.00	9.46E-03	9.46E-03
N ₂ O	265	2.20E-04	2.16E-04	0.00	9.46E-04	9.46E-04
Total GHG (CO ₂ e)			115		502	502

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - KC Casting
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 1.08 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.0011 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	8.05E-03	3.52E-02	0.00	3.52E-02
PM ₁₀	7.60	8.05E-03	3.52E-02	0.00	3.52E-02
PM _{2.5}	7.60	8.05E-03	3.52E-02	0.00	3.52E-02
SO _x	0.60	6.35E-04	2.78E-03	0.00	2.78E-03
NO _x	100	1.06E-01	4.64E-01	0.00	4.64E-01
VOC	5.50	5.82E-03	2.55E-02	0.00	2.55E-02
CO	84	8.89E-02	3.90E-01	0.00	3.90E-01
Lead	5.00E-04	5.29E-07	2.32E-06	0.00	2.32E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	2.22E-06	9.74E-06	0.0	9.74E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.27E-06	5.57E-06	0.0	5.57E-06
Formaldehyde (50-00-0)	7.50E-02	7.94E-05	3.48E-04	0.0	3.48E-04
Hexane (110-54-3)	1.80E+00	1.91E-03	8.35E-03	0.0	8.35E-03
Naphthalene (91-20-3) ^b	6.10E-04	6.46E-07	2.83E-06	0.0	2.83E-06
Toluene (108-88-3)	3.40E-03	3.60E-06	1.58E-05	0.0	1.58E-05
Polycyclic Organic Matter (POM) ^c	8.64E-05	9.15E-08	4.01E-07	0.0	4.01E-07
Arsenic (7440-38-2)	2.00E-04	2.12E-07	9.28E-07	0.0	9.28E-07
Beryllium (7440-41-7)	1.20E-05	1.27E-08	5.57E-08	0.0	5.57E-08
Cadmium (7440-43-9)	1.10E-03	1.16E-06	5.10E-06	0.0	5.10E-06
Chromium (7440-47-3)	1.40E-03	1.48E-06	6.49E-06	0.0	6.49E-06
Cobalt (7440-48-4)	8.40E-05	8.89E-08	3.90E-07	0.0	3.90E-07
Manganese (7439-96-5)	3.80E-04	4.02E-07	1.76E-06	0.0	1.76E-06
Mercury (7439-97-6)	2.60E-04	2.75E-07	1.21E-06	0.0	1.21E-06
Nickel (7440-02-0)	2.10E-03	2.22E-06	9.74E-06	0.0	9.74E-06
Selenium (7782-49-2)	2.40E-05	2.54E-08	1.11E-07	0.0	1.11E-07
Totals		2.00E-03	8.75E-03		8.75E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	126	0.00	553	553
CH ₄	28	2.20E-03	2.38E-03	0.00	1.04E-02	1.04E-02
N ₂ O	265	2.20E-04	2.38E-04	0.00	1.04E-03	1.04E-03
Total GHG (CO ₂ e)			126		553	553

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit Identification Number: IA - GP Salt System
 Stack/Vent Designation Number STRU 57
 Pollution Control Equipment Identification Number(s): TREA 20 (no credit taken in calculations)
 Process Type:
 Maximum Capacity: 10 tons/hr
 Source of Emission Factors used in table below: AP-42 Section 11.19.1, Table 11.19.1-1 (Sand Handling, Transfer, and Storage with Wet Scrubber)

Calculations Summary:

Pollutant	Emission Factor (lb/ton)	Emission Rate (lb/hr)	Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Controlled Emissions (ton/yr)	Limited Emissions (tons/yr)
PM*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
PM10*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
PM2.5*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
SOx	na	na	na	na	na	na	na
NOx	na	na	na	na	na	na	na
VOC	na	na	na	na	na	na	na
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na

* Emission factor back-calculated to an uncontrolled factor using 80% control for a wet scrubber

This is an Insignificant Activity Subpart 3 because the Potential Emissions for PM, PM10 are less than 2000 lb/hr (Minn. R. 7007.1300, subp. 3(F)(2))

Particle Size of Common Materials

Common Material	Size (microns)
Table salt	100
White granulated sugar	450 - 600
Sand	50+
Talcum (baby) powder	10
Mold spores	10 – 30
Human hair	40 - 300
Flour	1 - 100

Source: Filtercorp International Ltd.



Emission Unit Identification Number: IA - MP Salt System
 Stack/Vent Designation Number STRU 58
 Pollution Control Equipment Identification Number(s): TREA 22 (no credit taken in calculations)
 Process Type:
 Maximum Capacity: 10 tons/hr
 Source of Emission Factors used in table below: AP-42 Section 11.19.1, Table 11.19.1-1 (Sand Handling, Transfer, and Storage with Wet Scrubber)

Calculations Summary:

Pollutant	Emission Factor (lb/ton)	Emission Rate (lb/hr)	Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency* (%)	Controlled Emissions (lb/hr)	Controlled Emissions (ton/yr)	Limited Emissions (tons/yr)
PM*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
PM10*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
PM2.5*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
SOx	na	na	na	na	na	na	na
NOx	na	na	na	na	na	na	na
VOC	na	na	na	na	na	na	na
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na

* Emission factor back-calculated to an uncontrolled factor using 80% control for a wet scrubber

This is an Insignificant Activity Subpart 3 because the Potential Emissions for PM, PM10 are less than 2000 lb/hr (Minn. R. 7007.1300, subp. 3(F)(2))

Particle Size of Common Materials

Common Material	Size (microns)
Table salt	100
White granulated sugar	450 - 600
Sand	50+
Talcum (baby) powder	10
Mold spores	10 – 30
Human hair	40 - 300
Flour	1 - 100

Source: Filtercorp International Ltd.



Emission Unit Identification Number: IA - GP Sugar System
 Stack/Vent Designation Number STRU 59
 Pollution Control Equipment Identification Number(s): TREA 21 (no credit taken in calculations)

Maximum Capacity: 10 tons/hr
 Source of Emission Factors used in table below: AP-42 Section 11.19.1, Table 11.19.1-1 (Sand Handling, Transfer, and Storage with Wet Scrubber)

Calculations Summary:

Pollutant	Emission Factor (lb/ton)	Emission Rate (lb/hr)	Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency * (%)	Controlled Emissions (lb/hr)	Controlled Emissions (ton/yr)	Limited Emissions (tons/yr)
PM*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
PM10*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
PM2.5*	0.0065	0.065	0.285	0%	0.065	0.285	0.285
SOx	na	na	na	na	na	na	na
NOx	na	na	na	na	na	na	na
VOC	na	na	na	na	na	na	na
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na

*Emission factor back calculated to an uncontrolled factor using 80% control for a wet scrubber

This is an Insignificant Activity Subpart 3 because the Potential Emissions for PM, PM10 are less than 2000 lb/hr (Minn. R. 7007.1300, subp. 3(F)(2))

Particle Size of Common Materials

Common Material	Size (microns)
Table salt	100
White granulated sugar	450 - 600
Sand	50+
Talcum (baby) powder	10
Mold spores	10 – 30
Human hair	40 - 300
Flour	1 - 100

Source: Filtercorp International Ltd.



IA**Pig Skin Salt System (Hides)**

There are no emission factors available for this activity.

Examined AP-42 food products for handling factors - no related factors

Examined AP-42 mineral products - sand and gravel manufacturing has factors

AP-42 Section 11.19.1, Table 11.19.1-1 (Sand Handling, Transfer, and Storage with Wet Scrubber)

PM uncontrolled 0.0065 lbs/ton (no PM10 factor, assume PM10 and PM2.5 equal PM)

System	Process Rate tons/hr	Emission Rate lbs/hr	By-Product Collection	Emission Rate lbs/hr	Emission Rate tpy
PS	10	0.065	0%	0.065	0.285

Allowable Emissions from process equipment rule:

In all cases the allowable is based on 0.3 grains/dscf

System	Airflow scfm	Allowable lbs/hr
PS	350	0.90

$$\text{lb/hr} = \text{scfm} * (\text{gr/scf}/7000) * 60$$

This is an Insignificant Activity Subpart 3 because the Potential Emissions for PM, PM10 are less than 2000 lb/hr (Minn. R. 7007.1300, subp. 3(F)(2))

Particle Size of Common Materials

Common Material	Size (microns)
Table salt	100
White granulated sugar	450 - 600
Sand	50+
Talcum (baby) powder	10
Mold spores	10 – 30
Human hair	40 - 300
Flour	1 - 100

Source: Filtercorp International Ltd.



IA - Lime Storage Silo

NA

NA

675 acfm

Vendor Specification

Calculations Summary:

Pollutant	Emission Factor (lb/msf)	Emission Rate (lb/hr)	Uncontrolled Emissions (ton/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)*	Controlled Emissions (ton/yr)	Limited Controlled Emissions (tons/yr)
PM	na	5.87E-02	2.57E-01	0%	5.87E-02	2.57E-01	2.57E-01
PM ₁₀	na	5.87E-02	2.57E-01	0%	5.87E-02	2.57E-01	2.57E-01
PM _{2.5}	na	5.87E-02	2.57E-01	0%	5.87E-02	2.57E-01	2.57E-01
SO _x	na	na	na	na	na	na	na
NO _x	na	na	na	na	na	na	na
VOC	na	5.87E-02	2.57E-01	0%	5.87E-02	2.57E-01	2.57E-01
CO	na	na	na	na	na	na	na
Lead	na	na	na	na	na	na	na

Notes:

* Airflow:	675 acfm	
	60 F	0.010 gr/dscf
	0.0 % moisture	0.059 lbs/hr
	685 scfm	
	685 dscfm	

The lime storage bin includes a filter to collect valuable raw material/product. Since the filter collects raw material (i.e. lime), the filter is considered process equipment instead of control equipment

* Emissions based on vendor guarantee of 0.01 gr/dscf.

Calculations for Minn. R. 7011.0715

Airflow:	675 acfm	Calculate Allowable Emissions:	
	60 F	By Airflow	0.100 gr/dscf
	0.0 % moisture	Table:	0.59 lbs/hr
	685 scfm		
	685 dscfm		

This is an Insignificant Activity Subpart 3 because the Potential Emissions for PM, PM10 are less than 2000 lb/hr (Minn. R. 7007.1300, subp. 3(F)(2))

Emission Unit IA - QPP Medical Unit
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.150 million BTU/hr each
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00015 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	1.12E-03	4.90E-03	0.00	4.90E-03
PM ₁₀	7.60	1.12E-03	4.90E-03	0.00	4.90E-03
PM _{2.5}	7.60	1.12E-03	4.90E-03	0.00	4.90E-03
SO _x	0.60	8.82E-05	3.86E-04	0.00	3.86E-04
NO _x	100	1.47E-02	6.44E-02	0.00	6.44E-02
VOC	5.50	8.09E-04	3.54E-03	0.00	3.54E-03
CO	84	1.24E-02	5.41E-02	0.00	5.41E-02
Lead	5.00E-04	7.35E-08	3.22E-07	0.00	3.22E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	3.09E-07	1.35E-06	0.0	1.35E-06
Dichlorobenzene (25321-22-6)	1.20E-03	1.76E-07	7.73E-07	0.0	7.73E-07
Formaldehyde (50-00-0)	7.50E-02	1.10E-05	4.83E-05	0.0	4.83E-05
Hexane (110-54-3)	1.80E+00	2.65E-04	1.16E-03	0.0	1.16E-03
Naphthalene (91-20-3) ^b	6.10E-04	8.97E-08	3.93E-07	0.0	3.93E-07
Toluene (108-88-3)	3.40E-03	5.00E-07	2.19E-06	0.0	2.19E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	1.27E-08	5.57E-08	0.0	5.57E-08
Arsenic (7440-38-2)	2.00E-04	2.94E-08	1.29E-07	0.0	1.29E-07
Beryllium (7440-41-7)	1.20E-05	1.76E-09	7.73E-09	0.0	7.73E-09
Cadmium (7440-43-9)	1.10E-03	1.62E-07	7.09E-07	0.0	7.09E-07
Chromium (7440-47-3)	1.40E-03	2.06E-07	9.02E-07	0.0	9.02E-07
Cobalt (7440-48-4)	8.40E-05	1.24E-08	5.41E-08	0.0	5.41E-08
Manganese (7439-96-5)	3.80E-04	5.59E-08	2.45E-07	0.0	2.45E-07
Mercury (7439-97-6)	2.60E-04	3.82E-08	1.67E-07	0.0	1.67E-07
Nickel (7440-02-0)	2.10E-03	3.09E-07	1.35E-06	0.0	1.35E-06
Selenium (7782-49-2)	2.40E-05	3.53E-09	1.55E-08	0.0	1.55E-08
Totals		2.78E-04	1.22E-03		1.22E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion"(7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	17.5	0.00	76.8	76.8
CH ₄	28	2.20E-03	3.31E-04	0.00	1.45E-03	1.45E-03
N ₂ O	265	2.20E-04	3.31E-05	0.00	1.45E-04	1.45E-04
Total GHG (CO ₂ e)			17.6		76.9	76.9

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - QPP Break Room #1 and #2
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.48 million BTU/hr **total**
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00047 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	3.58E-03	1.57E-02	0.00	1.57E-02
PM ₁₀	7.60	3.58E-03	1.57E-02	0.00	1.57E-02
PM _{2.5}	7.60	3.58E-03	1.57E-02	0.00	1.57E-02
SO _x	0.60	2.82E-04	1.24E-03	0.00	1.24E-03
NO _x	100	4.71E-02	2.06E-01	0.00	2.06E-01
VOC	5.50	2.59E-03	1.13E-02	0.00	1.13E-02
CO	84	3.95E-02	1.73E-01	0.00	1.73E-01
Lead	5.00E-04	2.35E-07	1.03E-06	0.00	1.03E-06

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	9.88E-07	4.33E-06	0.0	4.33E-06
Dichlorobenzene (25321-22-6)	1.20E-03	5.65E-07	2.47E-06	0.0	2.47E-06
Formaldehyde (50-00-0)	7.50E-02	3.53E-05	1.55E-04	0.0	1.55E-04
Hexane (110-54-3)	1.80E+00	8.47E-04	3.71E-03	0.0	3.71E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.87E-07	1.26E-06	0.0	1.26E-06
Toluene (108-88-3)	3.40E-03	1.60E-06	7.01E-06	0.0	7.01E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	4.07E-08	1.78E-07	0.0	1.78E-07
Arsenic (7440-38-2)	2.00E-04	9.41E-08	4.12E-07	0.0	4.12E-07
Beryllium (7440-41-7)	1.20E-05	5.65E-09	2.47E-08	0.0	2.47E-08
Cadmium (7440-43-9)	1.10E-03	5.18E-07	2.27E-06	0.0	2.27E-06
Chromium (7440-47-3)	1.40E-03	6.59E-07	2.89E-06	0.0	2.89E-06
Cobalt (7440-48-4)	8.40E-05	3.95E-08	1.73E-07	0.0	1.73E-07
Manganese (7439-96-5)	3.80E-04	1.79E-07	7.83E-07	0.0	7.83E-07
Mercury (7439-97-6)	2.60E-04	1.22E-07	5.36E-07	0.0	5.36E-07
Nickel (7440-02-0)	2.10E-03	9.88E-07	4.33E-06	0.0	4.33E-06
Selenium (7782-49-2)	2.40E-05	1.13E-08	4.95E-08	0.0	4.95E-08
Totals		8.88E-04	3.89E-03		3.89E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	56.1	0.00	246	246
CH ₄	28	2.20E-03	1.06E-03	0.00	4.63E-03	4.63E-03
N ₂ O	265	2.20E-04	1.06E-04	0.00	4.63E-04	4.63E-04
Total GHG (CO ₂ e)			56.2		246	246

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Laundry Unit
Stack/Vent Designation Number: Natural Gas
Maximum Rated Capacity: 0.3 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00029 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.24E-03	9.79E-03	0.00	9.79E-03
PM ₁₀	7.60	2.24E-03	9.79E-03	0.00	9.79E-03
PM _{2.5}	7.60	2.24E-03	9.79E-03	0.00	9.79E-03
SO _x	0.60	1.76E-04	7.73E-04	0.00	7.73E-04
NO _x	100	2.94E-02	1.29E-01	0.00	1.29E-01
VOC	5.50	1.62E-03	7.09E-03	0.00	7.09E-03
CO	84	2.47E-02	1.08E-01	0.00	1.08E-01
Lead	5.00E-04	1.47E-07	6.44E-07	0.00	6.44E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	6.18E-07	2.71E-06	0.0	2.71E-06
Dichlorobenzene (25321-22-6)	1.20E-03	3.53E-07	1.55E-06	0.0	1.55E-06
Formaldehyde (50-00-0)	7.50E-02	2.21E-05	9.66E-05	0.0	9.66E-05
Hexane (110-54-3)	1.80E+00	5.29E-04	2.32E-03	0.0	2.32E-03
Naphthalene (91-20-3) ^b	6.10E-04	1.79E-07	7.86E-07	0.0	7.86E-07
Toluene (108-88-3)	3.40E-03	1.00E-06	4.38E-06	0.0	4.38E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	2.54E-08	1.11E-07	0.0	1.11E-07
Arsenic (7440-38-2)	2.00E-04	5.88E-08	2.58E-07	0.0	2.58E-07
Beryllium (7440-41-7)	1.20E-05	3.53E-09	1.55E-08	0.0	1.55E-08
Cadmium (7440-43-9)	1.10E-03	3.24E-07	1.42E-06	0.0	1.42E-06
Chromium (7440-47-3)	1.40E-03	4.12E-07	1.80E-06	0.0	1.80E-06
Cobalt (7440-48-4)	8.40E-05	2.47E-08	1.08E-07	0.0	1.08E-07
Manganese (7439-96-5)	3.80E-04	1.12E-07	4.90E-07	0.0	4.90E-07
Mercury (7439-97-6)	2.60E-04	7.65E-08	3.35E-07	0.0	3.35E-07
Nickel (7440-02-0)	2.10E-03	6.18E-07	2.71E-06	0.0	2.71E-06
Selenium (7782-49-2)	2.40E-05	7.06E-09	3.09E-08	0.0	3.09E-08
Totals		5.55E-04	2.43E-03		2.43E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emissions Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	35.1	0.00	154	154
CH ₄	28	2.20E-03	6.61E-04	0.00	2.90E-03	2.90E-03
N ₂ O	265	2.20E-04	6.61E-05	0.00	2.90E-04	2.90E-04
Total GHG (CO ₂ e)			35.1		154	154

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - KC124 Main Shop HVAC
 Stack/Vent Designation Number: Natural Gas
 Maximum Rated Capacity: 0.400 million BTU/hr
 Control Equipment: na
 Fuel Parameters
 Fuel Type Natural Gas **ONLY** **No secondary fuel**
 Heat Value: 1020 Btu/cf
 Fuel Consumption Rate: 0.00039 MMcf/hr
 Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
PM ₁₀	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
PM _{2.5}	7.60	2.98E-03	1.31E-02	0.00	1.31E-02
SO _x	0.60	2.35E-04	1.03E-03	0.00	1.03E-03
NO _x	100	3.92E-02	1.72E-01	0.00	1.72E-01
VOC	5.50	2.16E-03	9.45E-03	0.00	9.45E-03
CO	84	3.29E-02	1.44E-01	0.00	1.44E-01
Lead	5.00E-04	1.96E-07	8.59E-07	0.00	8.59E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	8.24E-07	3.61E-06	0.00	3.61E-06
Dichlorobenzene (25321-22-6)	1.20E-03	4.71E-07	2.06E-06	0.00	2.06E-06
Formaldehyde (50-00-0)	7.50E-02	2.94E-05	1.29E-04	0.00	1.29E-04
Hexane (110-54-3)	1.80E+00	7.06E-04	3.09E-03	0.00	3.09E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.39E-07	1.05E-06	0.00	1.05E-06
Toluene (108-88-3)	3.40E-03	1.33E-06	5.84E-06	0.00	5.84E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.39E-08	1.48E-07	0.00	1.48E-07
Arsenic (7440-38-2)	2.00E-04	7.84E-08	3.44E-07	0.00	3.44E-07
Beryllium (7440-41-7)	1.20E-05	4.71E-09	2.06E-08	0.00	2.06E-08
Cadmium (7440-43-9)	1.10E-03	4.31E-07	1.89E-06	0.00	1.89E-06
Chromium (7440-47-3)	1.40E-03	5.49E-07	2.40E-06	0.00	2.40E-06
Cobalt (7440-48-4)	8.40E-05	3.29E-08	1.44E-07	0.00	1.44E-07
Manganese (7439-96-5)	3.80E-04	1.49E-07	6.53E-07	0.00	6.53E-07
Mercury (7439-97-6)	2.60E-04	1.02E-07	4.47E-07	0.00	4.47E-07
Nickel (7440-02-0)	2.10E-03	8.24E-07	3.61E-06	0.00	3.61E-06
Selenium (7782-49-2)	2.40E-05	9.41E-09	4.12E-08	0.00	4.12E-08
Totals		7.40E-04	3.24E-03		3.24E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	46.8	0.00	205	205
CH ₄	28	2.20E-03	8.82E-04	0.00	3.86E-03	3.86E-03
N ₂ O	265	2.20E-04	8.82E-05	0.00	3.86E-04	3.86E-04
Total GHG (CO ₂ e)			46.8		205	205

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Emission Unit IA - Office Boiler
Stack/Vent Designation Number: IA
Maximum Rated Capacity: 0.396 million BTU/hr
Control Equipment: na
Fuel Parameters
Fuel Type Natural Gas **ONLY** **No secondary fuel**
Heat Value: 1020 Btu/cf
Fuel Consumption Rate: 0.00039 MMcf/hr
Source of Emission Factors: AP-42 Chapter 1.4 - 0.3-100 MMBtu/hr

Calculations Summary:

Pollutant	Emission Factor (lb/MMcf)	Emission Rate (lbs/hr)	Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
PM	7.60	2.95E-03	1.29E-02	0.00	1.29E-02
PM ₁₀	7.60	2.95E-03	1.29E-02	0.00	1.29E-02
PM _{2.5}	7.60	2.95E-03	1.29E-02	0.00	1.29E-02
SO _x	0.60	2.33E-04	1.02E-03	0.00	1.02E-03
NO _x	100	3.88E-02	1.70E-01	0.00	1.70E-01
VOC	5.50	2.14E-03	9.35E-03	0.00	9.35E-03
CO	84	3.26E-02	1.43E-01	0.00	1.43E-01
Lead	5.00E-04	1.94E-07	8.50E-07	0.00	8.50E-07

Calculations Summary - HAPs:

HAP Name (CAS)	Emission Factor (lbs/MMcf) ^a	Emission Rate (lbs/hr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Limited Emissions (tons/yr)
Benzene (71-43-2)	2.10E-03	8.15E-07	3.57E-06	0.0	3.57E-06
Dichlorobenzene (25321-22-6)	1.20E-03	4.66E-07	2.04E-06	0.0	2.04E-06
Formaldehyde (50-00-0)	7.50E-02	2.91E-05	1.28E-04	0.0	1.28E-04
Hexane (110-54-3)	1.80E+00	6.99E-04	3.06E-03	0.0	3.06E-03
Naphthalene (91-20-3) ^b	6.10E-04	2.37E-07	1.04E-06	0.0	1.04E-06
Toluene (108-88-3)	3.40E-03	1.32E-06	5.78E-06	0.0	5.78E-06
Polycyclic Organic Matter (POM) ^c	8.64E-05	3.35E-08	1.47E-07	0.0	1.47E-07
Arsenic (7440-38-2)	2.00E-04	7.76E-08	3.40E-07	0.0	3.40E-07
Beryllium (7440-41-7)	1.20E-05	4.66E-09	2.04E-08	0.0	2.04E-08
Cadmium (7440-43-9)	1.10E-03	4.27E-07	1.87E-06	0.0	1.87E-06
Chromium (7440-47-3)	1.40E-03	5.44E-07	2.38E-06	0.0	2.38E-06
Cobalt (7440-48-4)	8.40E-05	3.26E-08	1.43E-07	0.0	1.43E-07
Manganese (7439-96-5)	3.80E-04	1.48E-07	6.46E-07	0.0	6.46E-07
Mercury (7439-97-6)	2.60E-04	1.01E-07	4.42E-07	0.0	4.42E-07
Nickel (7440-02-0)	2.10E-03	8.15E-07	3.57E-06	0.0	3.57E-06
Selenium (7782-49-2)	2.40E-05	9.32E-09	4.08E-08	0.0	4.08E-08
Totals		7.33E-04	3.21E-03		3.21E-03

^aAll emissions are calculated based on emission factors from AP-42, Section 1.4 "Natural Gas Combustion" (7/98).

^bNaphthalene is included in the Polycyclic Organic Matter (POM) emissions and is not double-counted in the total HAPs.

^cTotal POM emission factor is equal to the sum of the individual POM compounds.

Calculations Summary - Greenhouse Gases:

Pollutant	GWP	Emission Factor (lbs/MMBtu) ^d	Emission Rate (lb/hr)	Pollution Control Efficiency (%)	Uncontrolled Emission Rate (tons/yr)	Limited Emissions (tons/yr)
CO ₂	1	117	46.3	0.00	203	203
CH ₄	28	2.20E-03	8.73E-04	0.00	3.82E-03	3.82E-03
N ₂ O	265	2.20E-04	8.73E-05	0.00	3.82E-04	3.82E-04
Total GHG (CO ₂ e)			46.3		203	203

^d Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Natural Gas

HAP NAME [CAS]	Emission factor (lb/MMBtu)
2-Methylnaphthalene	2.40E-05
3-Methylcholanthrene	1.80E-06
7,12-Dimethylbenz(a)anthracene	1.60E-05
Acenaphthene	1.60E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benz(a)anthracene	1.80E-06
Benzo(a)pyrene	1.20E-06
Benzo(b)fluoranthene	1.80E-06
Benzo(g,h,i)perylene	1.20E-06
Benzo(k)fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenzo(a,h)anthracene	1.20E-06
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06
Phenanthrene	1.70E-05
Pyrene	5.00E-06
Total POMs	8.80E-05

AP-42 Tables 1.4-3 and 1.4-4

TSD Attachment 2 – Subject item inventory and facility requirements

SI List

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Activity	Insignificant Air Emissions Activity	ACTV 1	Null	All IA's	
Agency Interest	Conventional Site	AI SI 3926	Null	Null	
Component Group	Air Component Group	COMG 3	GP015	Natural Smoke Generators	
		COMG 16	GP 003	Natural and Liquid Smoke Process Ovens Controlled by Schroter Scrubbers	
		COMG 18	Null	Natural and Liquid Smoke Process Ovens Controlled by IES Scrubbers - Glen Bus Units	
		COMG 20	Null	Natural Gas-Fired Air Makeup Units	
		COMG 21	Null	STRU 2 Limits	
		COMG 22	Null	STRU 23 Limits	
Equipment	Boiler	EQUI 3	EU044	Boiler #6	
		EQUI 4	EU001	Boiler #1	
		EQUI 5	EU002	Boiler #2	
		EQUI 6	EU003	Boiler #3	
		EQUI 7	EU004	Boiler #4	
		EQUI 8	EU005	Boiler #5	
		EQUI 9	EU045	Boiler #7	
	Data Acquisition System	EQUI 37	DA001	Regenerative Thermal Oxidizer DAS	
	Dryer/Oven, direct fired	EQUI 14	EU036	Scott Bone Dryer	
		EQUI 56	EU006	Smoked Meat Oven #6 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 57	EU007	Smoked Meat Oven #7 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 58	EU008	Smoked Meat Oven #8 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 59	EU009	Smoked Meat Oven #9 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 60	EU010	Smoked Meat Oven #10 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 61	EU011	Smoked Meat Oven #11 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 62	EU012	Smoked Meat Oven #12 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 63	EU013	Smoked Meat Oven #1 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 64	EU014	Smoked Meat Oven #2 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 65	EU015	Smoked Meat Oven #3 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 66	EU016	Smoked Meat Oven #4 with Recirculated Natural Wood and Liquid Smoke	
		EQUI 67	EU017	Smoked Meat Oven #5 with Recirculated Natural Wood and Liquid Smoke	
	Dryer/Oven, indirect fired	EQUI 113	Null	Dupps Blood Dryer	
		EQUI 117	Null	AFO Fire Braising Unit	
		EQUI 118	Null	Smoke Generator	
		EQUI 119	Null	Smoke Generator	
		EQUI 120	Null	Smoke Generator	
	Incinerator	EQUI 123	Null	Hog Hair Singer #2	
	Loading-Unloading Equipment	EQUI 18	EU090	Crax Storage Room Air	
		EQUI 73	EU092	Refined Products MAU 1	
		EQUI 74	EU093	Refined Products MAU 2	
	Other Combustion	EQUI 75	EU094	Refined Products MAU 3	
		EQUI 90	Null	KC13 Unit	
		EQUI 91	Null	MP4	
		EQUI 92	Null	Dehair MAU-KC146-2	
		EQUI 93	Null	MAU #4	
		EQUI 94	Null	Rendering Air MAH #2	
		EQUI 95	Null	Old Boiler Room MAU	
		EQUI 96	Null	Hog Hair Singer #1	
		EQUI 98	Null	Pretreatment Space Heater #1	
		EQUI 99	Null	KC-9 MAH	
		EQUI 100	Null	Rendering MAU	
		EQUI 102	Null	Hog Cut Space Heater #1	
		EQUI 103	Null	Hog Cut Space Heater #2	
		EQUI 104	Null	Dry Rm #5 Desiccant Unit Conditioner #5-1	
		EQUI 105	Null	QPP Animal Welfare & Handling -MAU-1	
		EQUI 106	Null	QPP Animal Welfare & Handling -MAU-2	
		EQUI 107	Null	Dehair MAU-KC146-1	
		EQUI 108	Null	Machinery RM MAU-3	
		EQUI 109	Null	Machinery RM MAU-5	
		EQUI 110	Null	Pretreatment Space Heater #3	
	Other Emission Unit	EQUI 17	EU089	Crax Grinding/Truck Loadout Room Air	
		EQUI 68	EU031	Natural Smoke Generator 1	
		EQUI 69	EU032	Natural Smoke Generator 2	
		EQUI 71	EU088	Refined Products Machinery	
		EQUI 72	EU091	Refined Products Room Air	
		EQUI 76	EU095	Natural Smoke Generator 3	
		EQUI 77	EU096	Natural Smoke Generator 4	
		EQUI 78	EU097	Natural Smoke Generator 5	
		EQUI 79	EU098	Natural Smoke Generator 6	
		EQUI 80	EU099	Natural Smoke Generator 7	
		EQUI 101	Null	Hog Hair Hydrolyzer	
		EQUI 111	EU029	Bacon Bits Precooked Line	
	Parametric Monitor	EQUI 1	MR001	TREA 23 Combustion Chamber Temperature	
	Reciprocating IC Engine	EQUI 81	EU078	natural gas-fired emergency generator	
Structure	Building	STRU 84	Null	Building A	

SI List

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Structure	Building	STRU 85	Null	Building B	
		STRU 86	Null	Building C	
		STRU 87	Null	Building D	
		STRU 88	Null	Building E	
	Stack/Vent	STRU 1	SV012	Natural and Liquid Smoke Meat Oven #11 Stack	
		STRU 2	SV059	Crax Storage/Grinding/Loadout Stack	
		STRU 3	SV060	Refined Products Room Air Stack #1	
		STRU 4	SV061	Refined Products Room Air Stack #2	
		STRU 5	SV062	Refined Products MAU 1 Stack	
		STRU 6	SV063	Refined Products MAU 2 Stack	
		STRU 7	SV064	Refined Products MAU 3 Stack	
		STRU 10	SV050	Bacon Bits Line (EU 029/CE 025)	
		STRU 11	SV003	Natural and Liquid Smoke Meat Oven #6 Stack	
		STRU 12	SV005	Natural and Liquid Smoke Meat Oven #7 Stack	
		STRU 13	SV007	Natural and Liquid Smoke Meat Oven #8 S	
		STRU 14	SV019	Precooked Bacon Stack N/S Stack	
		STRU 15	SV020	Precooked Bacon Stack E/W Stack	
		STRU 16	SV021	Standby Generator Stack	
		STRU 17	SV034	KC-9 Makeup Air Heater Stack	
		STRU 19	SV036	Rendering Makeup Air Heater Stack 1	
		STRU 20	SV037	Rendering Makeup Air Heater Stack 2	
		STRU 21	SV042	RWO MAU (0.243 MMBtu/hr) Stack	
		STRU 23	SV058	Regenerative Thermal Oxidizer Stack	
		STRU 38	SV009	Natural and Liquid Smoke Meat Oven #9 Stack	
		STRU 39	SV011	Natural and Liquid Smoke Meat Oven #10 Stack	
		STRU 40	SV013	Natural and Liquid Smoke Meat Oven #12 Stack	
		STRU 44	SV047	Hog Singer #2 Stack	
		STRU 46	SV049	Dock Area Room Air	
		STRU 47	SV001	Emergency Boiler Stack (Boilers 1-5)	
		STRU 48	SV014	Prep Sausage Oven #1 Stack	
		STRU 49	SV015	Prep Sausage Oven #2 Stack	
		STRU 50	SV016	Prep Sausage Oven #3 Stack	
		STRU 51	SV017	Prep Sausage Oven #4 Stack	
		STRU 52	SV018	Prep Sausage Oven #5 Stack	
		STRU 56	SV029	Hog Singer #1 Stack	
		STRU 63	SV038	Boiler #6 Stack	
		STRU 64	SV039	Boiler #7 Stack	
		STRU 66	Null	Livestock Boiler #1 Stack	
		STRU 67	Null	Livestock Boiler #2 Stack	
		STRU 68	Null	KC13 Unit Stack	
		STRU 69	Null	MP4 Stack	
		STRU 70	Null	Dehair MAU-KC142-2 Stack	
		STRU 71	Null	MAU #4 Stack	
		STRU 72	Null	Old Boiler Room MAU Stack	
		STRU 73	Null	Pretreatment Space Heater #1 Stack	
		STRU 74	Null	Hog Cut Space Heater #1 Stack	
		STRU 75	Null	Hog Cut Space Heater #2 Stack	
		STRU 76	Null	Dry Rm Desiccant Unit Conditioner #5-1 Stack	
		STRU 77	Null	QPP Animal Welfare & Handling - MAU-1 Stack	
		STRU 78	Null	QPP Animal Welfare & Handling - MAU-2 Stack	
		STRU 79	Null	Dehair MAU-KC146-1 Stack	
		STRU 80	Null	Machinery RM MAU-3 Stack	
		STRU 81	Null	Machinery RM MAU-5 Stack	
		STRU 82	Null	Pretreatment Space Heater #3 Stack	
		STRU 83	Null	Boiler 1-5 Economizer Stack	
		STRU 91	Null	AFO Heat Braising Unit Stack 1	
		STRU 92	Null	AFO Heat Braising Unit Stack 2	
Total Facility	Air Quality Total Facility	TFAC 2	09900002	Hormel Foods Corp/Quality Pork Processors (QPP)	
Treatment	050-Packed-Gas Adsorption Column	TREA 25	CE030	Crax Storage Room Air Packed-Gas Adsorption Column	
		TREA 26	CE031	Refined Products Room Air Packed-Gas Adsorption Column	
		TREA 33	CE044	Pre-RTO Packed Bed Adsorption Column	
	053-Venturi Scrubber	TREA 24	CE029	Crax Grinding/Truck Loadout Room Air Venturi Scrubber	
		TREA 31	CE027	Refined Products Machinery Venturi Scrubber	
		TREA 46	Null	New Dupps Blood Dryer Venturi Scrubber	
	099-Other	TREA 34	CE038	Oven #1 Exhaust Washer	
		TREA 35	CE039	Oven #2 Exhaust Washer	
		TREA 36	CE040	Oven #3 Exhaust Washer	
		TREA 37	CE041	Oven #4 Exhaust Washer	
		TREA 38	CE042	Oven #5 Exhaust Washer	
		TREA 39	CE043	Oven #12 Exhaust Washer	
		TREA 40	CE032	Oven #10 Exhaust Washer	
		TREA 41	CE033	Oven #11 Exhaust Washer	
		TREA 42	CE034	Oven #6 Exhaust Washer	

SI List

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Treatment	099-Other	TREA 43	CE035	Oven #7 Exhaust Washer	
		TREA 44	CE036	Oven #8 Exhaust Washer	
		TREA 45	CE037	Oven #9 Exhaust Washer	
	131-Thermal Oxidizer	TREA 23	CE026 / EU087	Regenerative Thermal Oxidizer	

Insignificant Activities

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	
Boiler	EQUI 3	EU044	Boiler #6	Hurst	Series 400	29.4	million British thermal units/hours	Heat	Not coal burning	N	Null	11/1/1999	11/1/1999	Null	
	EQUI 4	EU001	Boiler #1	Nebraska	NS049	49	million British thermal units/hours	Heat	Not coal burning	N	Null	1/1/1980	1/1/1982	Null	
	EQUI 5	EU002	Boiler #2	Nebraska	NS049	49	million British thermal units/hours	Heat	Not coal burning	N	Null	1/1/1980	1/1/1982	Null	
	EQUI 6	EU003	Boiler #3	Nebraska	NS049	49	million British thermal units/hours	Heat	Not coal burning	N	Null	1/1/1980	1/1/1982	Null	
	EQUI 7	EU004	Boiler #4	Cleaver Brooks	PB 400-600	25	million British thermal units/hours	Heat	Not coal burning	N	Null	1/1/1980	1/1/1982	Null	
	EQUI 8	EU005	Boiler #5	Eclipse	PRCGO	7.14	million British thermal units/hours	Heat	Not coal burning	N	Null	1/1/1980	1/1/1982	Null	
	EQUI 9	EU045	Boiler #7	Hurst	Series 400	29.4	million British thermal units/hours	Heat	Not coal burning	N	Null	11/1/1999	11/1/1999	Null	
Dryer/Oven, direct fired	EQUI 14	EU036	Scott Bone Dryer	Scott	4815/144LVS144	9	million British thermal units/hours	Heat	Not coal burning	Null	Null	10/1/1996	11/15/1996	Null	
	EQUI 56	EU006	Smoked Meat Oven #6 with Recirculated Natural Wood and Liquid Smoke	Gladd Industries	Custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 57	EU007	Smoked Meat Oven #7 with Recirculated Natural Wood and Liquid Smoke	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 58	EU008	Smoked Meat Oven #8 with Recirculated Natural Wood and Liquid Smoke	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 59	EU009	Smoked Meat Oven #9 with Recirculated Natural Wood and Liquid Smoke	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 60	EU010	Smoked Meat Oven #10 with Recirculated Natural Wood and Liquid S..	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 61	EU011	Smoked Meat Oven #11 with Recirculated Natural Wood and Liquid S..	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 62	EU012	Smoked Meat Oven #12 with Recirculated Natural Wood and Liquid S..	Alkar	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1994	1/1/1994	Null	
	EQUI 63	EU013	Smoked Meat Oven #1 with Recirculated Natural Wood and Liquid S..	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 64	EU014	Smoked Meat Oven #2 with Recirculated Natural Wood and Liquid S..	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 65	EU015	Smoked Meat Oven #3 with Recirculated Natural Wood and Liquid Smoke	Gladd Industries	oven-gas	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 66	EU016	Smoked Meat Oven #4 with Recirculated Natural Wood and Liquid S..	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
	EQUI 67	EU017	Smoked Meat Oven #5 with Recirculated Natural Wood and Liquid S..	Gladd Industries	custom	1.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1982	1/1/1982	Null	
Dryer/Oven, indirect fired	EQUI 113	Null	Dupps Blood Dryer	Dupps	2000B	5.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	11/1/2018	11/3/2018	Null	
	EQUI 117	Null	AFO Fire Braising Unit	AfoFlame	AfoFlame - 8	1.96	million British thermal units/hours	Electrical Energy	Not coal burning	Null	Null	8/3/2018	9/3/2018	Null	
	EQUI 118	Null	Smoke Generator	Schroter	R-91	30	pounds/hours	Wood	Not coal burning	Null	Null	12/1/2020	12/15/2020	Null	
	EQUI 119	Null	Smoke Generator	Schroter	R-91	30	pounds/hours	Wood	Not coal burning	Null	Null	12/1/2020	12/15/2020	Null	
	EQUI 120	Null	Smoke Generator	Schroter	R-91	30	pounds/hours	Wood	Not coal burning	Null	Null	12/1/2020	12/15/2020	Null	
Incinerator	EQUI 123	Null	Hog Hair Singer #2	Lomic Design	HE Mid Section	10	million British thermal units/hours	Energy	Not coal burning	N	Null	11/10/2022	11/13/2022	Null	
Other Combustion	EQUI 73	EU092	Refined Products MAU 1	GreenHeck	DGX-136-H42-II	4.9	million British thermal units/hours	Heat	Not coal burning	Null	Null	2/6/2014	6/23/2014	Null	
	EQUI 74	EU093	Refined Products MAU 2	GreenHeck	DGX-136-H42-II	4.9	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/24/2014	6/23/2014	Null	
	EQUI 75	EU094	Refined Products MAU 3	GreenHeck	DGX-136-H42-II	2.45	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/24/2014	6/23/2014	Null	
	EQUI 90	Null	KC13 Unit	Greenheck	DGX-127-H38-DB	2.5	million British thermal units/hours	Energy	Not coal burning	Null	Null	9/2/2008	9/2/2008	Null	

Emission Units 1

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

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 91	Null	MP4	Greenheck	DGX-125-H35-DB	2.37	million British thermal units/hours	Energy	Not coal burning	Null	Null	11/13/2009	11/13/2009	Null	
	EQUI 92	Null	Dehair MAU-KC146-2	Greenheck	DX-133-H42	4	million British thermal units/hours	Energy	Not coal burning	Null	Null	5/17/2017	5/17/2017	Null	
	EQUI 93	Null	MAU #4	Concept Designs Inc.	AHU-4G-136-25-100	3.39	million British thermal units/hours	Energy	Not coal burning	Null	Null	5/18/2006	5/18/2006	Null	
	EQUI 94	Null	Rendering Air MAH #2	Concept Designs Inc.	DF-120-20-100	2.17	million British thermal units/hours	Energy	Not coal burning	Null	Null	5/1/2003	5/1/2003	Null	
	EQUI 95	Null	Old Boiler Room MAU	Modine	Q0230CA024666N	5.62	million British thermal units/hours	Energy	Not coal burning	Null	Null	12/1/2000	12/1/2000	Null	
	EQUI 96	Null	Hog Hair Singer #1	Lomic Design	11100-000	8	million British thermal units/hours	Energy	Not coal burning	Null	Null	7/15/2011	7/15/2011	Null	
	EQUI 98	Null	Pretreatment Space Heater #1	Hartzell	1GFC32711FC-20STOP03	2	million British thermal units/hours	Energy	Not coal burning	Null	Null	11/1/2000	11/1/2000	Null	
	EQUI 99	Null	KC-9 MAH	Concept Designs Inc.	AHU-6J-154-45-100	4.88	million British thermal units/hours	Energy	Not coal burning	Null	Null	5/18/2006	5/18/2006	Null	
	EQUI 100	Null	Rendering MAU	Greenheck	DGX130-H38-DB	3.03	million British thermal units/hours	Energy	Not coal burning	Null	Null	4/10/2013	4/10/2013	Null	
	EQUI 102	Null	Hog Cut Space Heater #1	Hartzell	G-40	4	million British thermal units/hours	Energy	Not coal burning	Null	Null	5/1/1991	5/1/1991	Null	
	EQUI 103	Null	Hog Cut Space Heater #2	Hartzell	G-40	4	million British thermal units/hours	Energy	Not coal burning	Null	Null	5/1/1991	5/1/1991	Null	
	EQUI 104	Null	Dry Rm #5 Desiccant Unit Conditioner #5-1	Evapco	CPA-36-10-DW-SP	2.37	million British thermal units/hours	Electrical Energy	Not coal burning	Null	Null	10/1/2017	10/1/2017	Null	
	EQUI 105	Null	QPP Animal Welfare & Handling -MAU-1	Greenheck	DGX-125-H35	2.35	million British thermal units/hours	Energy	Not coal burning	Null	Null	10/1/2017	10/1/2017	Null	
	EQUI 106	Null	QPP Animal Welfare & Handling -MAU-2	Greenheck	DGX-125-H35	2.35	million British thermal units/hours	Energy	Not coal burning	Null	Null	10/1/2017	10/1/2017	Null	
	EQUI 107	Null	Dehair MAU-KC146-1	Greenheck	DX-133-H42	4	million British thermal units/hours	Energy	Not coal burning	Null	Null	6/1/2017	6/1/2017	Null	
	EQUI 108	Null	Machinery RM MAU-3	Greenheck	DGX-130-H38-DB	3.06	million British thermal units/hours	Energy	Not coal burning	Null	Null	6/1/2013	6/1/2013	Null	
	EQUI 109	Null	Machinery RM MAU-5	Greenheck	DGX-130-H38-DB	3.06	million British thermal units/hours	Energy	Not coal burning	Null	Null	6/1/2013	6/1/2013	Null	
	EQUI 110	Null	Pretreatment Space Heater #3	Concept Designs Inc.	DF-130-21-105	2.38	million British thermal units/hours	Energy	Not coal burning	Null	Null	11/1/1996	11/1/1996	Null	

Emission Units 2

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Engine Use	Firing Method	Engine Displacement	Engine Displacement Units	Construction Start Date	Operation Start Date	Modification Date	
Reciprocating IC Engine	EQUI 81	EU078	natural gas-fired emergency generator	Cummins	GGHH-5588296	100	kilowatts/each	Power	Emergency/blacks..	SI-4SRB	6.8	liters per cylinder	1/1/2004	1/1/2004	Null	

Emission Units 3

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

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	
Loading-Unloading Equipment	EQUI 18	EU090	Crax Storage Room Air	Custom	NA	8,000	cubic feet/minutes	Airflow	1/24/2014	6/23/2014	Null	
Other Emission Unit	EQUI 17	EU089	Crax Grinding/Truck Loadout Room Air	Custom	NA	24,000	cubic feet/minutes	Airflow	1/24/2014	6/23/2014	Null	
	EQUI 68	EU031	Natural Smoke Generator 1	Schroter	R91	30	pounds/hours	Sawdust	1/1/1982	1/1/1982	Null	
	EQUI 69	EU032	Natural Smoke Generator 2	Schroter	R91	30	pounds/hours	Sawdust	1/1/1982	1/1/1982	Null	
	EQUI 71	EU088	Refined Products Machinery	Dupps	440U	4,600	gallons/hours	Material	3/13/2014	7/7/2014	Null	
	EQUI 72	EU091	Refined Products Room Air	Custom	NA	100,000	cubic feet/minutes	Airflow	1/24/2014	6/23/2014	Null	
	EQUI 76	EU095	Natural Smoke Generator 3	Schroeter	R91	30	pounds/hours	Sawdust	4/11/2012	4/30/2012	Null	
	EQUI 77	EU096	Natural Smoke Generator 4	Schroeter	R91	30	pounds/hours	Sawdust	4/11/2012	4/30/2012	Null	
	EQUI 78	EU097	Natural Smoke Generator 5	Schroeter	R91	30	pounds/hours	Sawdust	4/11/2012	4/30/2012	Null	
	EQUI 79	EU098	Natural Smoke Generator 6	Schroeter	R91	30	pounds/hours	Sawdust	4/11/2012	4/30/2012	Null	
	EQUI 80	EU099	Natural Smoke Generator 7	Schroeter	R91	30	pounds/hours	Sawdust	4/11/2012	4/30/2012	Null	
	EQUI 101	Null	Hog Hair Hydrolyzer	ANCO	1212-05	4,000	pounds/hours	Material	8/12/2005	8/12/2005	Null	
	EQUI 111	EU029	Bacon Bits Precooked Line	Amana	NA	8,050	pounds/hours	Material	4/29/1998	4/29/1998	Null	

Component Groups

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 3	GP015	Natural Smoke Generators	EQUI 68	
			EQUI 69	
			EQUI 76	
			EQUI 77	
			EQUI 78	
			EQUI 79	
			EQUI 80	
			EQUI 118	
			EQUI 119	
			EQUI 120	
COMG 16	GP 003	Natural and Liquid Smoke Process Ovens Controlled by Schroter Scrubbers	EQUI 63	
			EQUI 64	
			EQUI 65	
			EQUI 66	
			EQUI 67	
			EQUI 77	
			EQUI 78	
			EQUI 79	
			EQUI 120	
COMG 18	Null	Natural and Liquid Smoke Process Ovens Controlled by IES Scrubbers - Glen Bus Units	EQUI 56	
			EQUI 57	
			EQUI 58	
			EQUI 59	
			EQUI 60	
			EQUI 61	
			EQUI 62	
			EQUI 68	
			EQUI 69	
			EQUI 76	
			EQUI 80	
			EQUI 118	
			EQUI 119	
COMG 20	Null	Natural Gas-Fired Air Makeup Units	EQUI 73	
			EQUI 74	
			EQUI 75	
			EQUI 90	
			EQUI 91	
			EQUI 92	
			EQUI 93	

Component Groups

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 20	Null	Natural Gas-Fired Air Makeup Units	EQUI 94	
			EQUI 95	
			EQUI 96	
			EQUI 98	
			EQUI 99	
			EQUI 100	
			EQUI 102	
			EQUI 103	
			EQUI 104	
			EQUI 105	
			EQUI 106	
			EQUI 107	
			EQUI 108	
			EQUI 109	
			EQUI 110	
COMG 21	Null	STRU 2 Limits	EQUI 17	
			EQUI 18	
COMG 22	Null	STRU 23 Limits	EQUI 14	
			EQUI 71	
			EQUI 101	
			EQUI 113	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 3	GP015	Natural Smoke Generators	Acetaldehyde	0	0	0.48	
					Benzene	0	0	0.36	
					Cadmium compounds	0	0	4.05e-06	
					Carbon Dioxide	0	0	1,359	
					Carbon Dioxide Equivalent	0	0	1,375	
					Carbon Monoxide	0	0	25.6	
					Chromium compounds	0	0	1.84e-07	
					Formaldehyde	0	0	0.19	
					Manganese compounds	0	0	3.13e-05	
					Methane	0	0	0.104	
					Nickel compounds	0	0	2.58e-06	
					Nitrogen Oxides	0	0	0.52	
					Nitrous Oxide	0	0	0.0521	
					Particulate Matter	0	0	9.75	
					Phenol	0	0	0.19	
					PM < 2.5 micron	0	0	9.75	
					PM < 10 micron	0	0	9.75	
					Polycyclic organic matter	0	0	0.13	
					Toluene	0	0	0.13	
					Volatile Organic Compounds	0	0	8.1	
					Xylene (o-)	0	0	0.037	
Equipment	Boiler	EQUI 3	EU044	Boiler #6	1,4-Dichlorobenzene (para-)	3.46e-05	0.000151	0.000151	
					Arsenic compounds	5.76e-06	2.52e-05	2.52e-05	
					Benzene	6.05e-05	0.000265	0.000265	
					Beryllium Compounds	3.46e-07	1.51e-06	1.51e-06	
					Cadmium compounds	3.17e-05	0.000139	0.000139	
					Carbon Dioxide	3,437	15,052	15,052	
					Carbon Dioxide Equivalent	3,440	15,067	15,067	
					Carbon Monoxide	2.42	10.6	10.6	
					Chromium compounds	4.04e-05	0.000177	0.000177	
					Cobalt compounds	2.42e-06	1.06e-05	1.06e-05	
					Formaldehyde	0.00216	0.00947	0.00947	
					Hexane	0.0519	0.227	0.227	
					Lead Compounds	1.44e-05	6.31e-05	6.31e-05	
					Manganese compounds	1.1e-05	4.8e-05	4.8e-05	
					Mercury Compounds	7.49e-06	3.28e-05	3.28e-05	
					Methane	0.0648	0.284	0.284	
					Naphthalene	1.76e-05	7.7e-05	7.7e-05	
					Nickel compounds	6.05e-05	0.000265	0.000265	
					Nitrogen Oxides	2.88	12.6	12.6	
					Nitrous Oxide	0.00648	0.0284	0.0284	
					Particulate Matter	0.219	0.959	0.959	
					PM < 2.5 micron	0.219	0.959	0.959	
					PM < 10 micron	0.219	0.959	0.959	
					Polycyclic organic matter	2.49e-06	1.09e-05	1.09e-05	
					Selenium compounds	6.92e-07	3.03e-06	3.03e-06	
					Sulfur Dioxide	0.0173	0.0757	0.0757	
					Toluene	9.8e-05	0.000429	0.000429	
					Volatile Organic Compounds	0.159	0.694	0.694	
		EQUI 4	EU001	Boiler #1	1,4-Dichlorobenzene (para-)	5.76e-05	0.000252	0.000252	
					Arsenic compounds	9.61e-06	4.21e-05	4.21e-05	
					Benzene	0.000101	0.000442	0.000442	
					Beryllium Compounds	5.76e-07	2.52e-06	2.52e-06	
					Cadmium compounds	5.28e-05	0.000231	0.000231	
					Carbon Dioxide	5,728	25,087	25,087	
					Carbon Dioxide Equivalent	5,733	25,112	25,112	
					Carbon Monoxide	4.04	17.7	17.7	
					Chromium compounds	6.73e-05	0.000295	0.000295	
					Cobalt compounds	4.04e-06	1.77e-05	1.77e-05	
					Formaldehyde	0.0036	0.0158	0.0158	
					Hexane	0.0865	0.379	0.379	
					Lead Compounds	2.4e-05	0.000105	0.000105	
					Manganese compounds	1.83e-05	8e-05	8e-05	
					Mercury Compounds	1.25e-05	5.47e-05	5.47e-05	
					Methane	0.108	0.473	0.473	
					Naphthalene	2.93e-05	0.000128	0.000128	
					Nickel compounds	0.000101	0.000442	0.000442	
					Nitrogen Oxides	4.8	21	21	
					Nitrous Oxide	0.0108	0.0473	0.0473	
					Particulate Matter	0.365	1.6	1.6	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Boiler	EQUI 4	EU001	Boiler #1	PM < 2.5 micron	0.365	1.6	1.6	
					PM < 10 micron	0.365	1.6	1.6	
					Polycyclic organic matter	4.15e-06	1.82e-05	1.82e-05	
					Selenium compounds	1.15e-06	5.05e-06	5.05e-06	
					Sulfur Dioxide	0.0288	0.126	0.126	
					Toluene	0.000163	0.000715	0.000715	
					Volatile Organic Compounds	0.264	1.16	1.16	
		EQUI 5	EU002	Boiler #2	1,4-Dichlorobenzene (para-)	5.76e-05	0.000252	0.000252	
					Arsenic compounds	9.61e-06	4.21e-05	4.21e-05	
					Benzene	0.000101	0.000442	0.000442	
					Beryllium Compounds	5.76e-07	2.52e-06	2.52e-06	
					Cadmium compounds	5.28e-05	0.000231	0.000231	
					Carbon Dioxide	5,728	25,087	25,087	
					Carbon Dioxide Equivalent	5,735	25,117	25,117	
					Carbon Monoxide	4.04	17.7	17.7	
					Chromium compounds	6.73e-05	0.000295	0.000295	
					Cobalt compounds	4.04e-06	1.77e-05	1.77e-05	
					Formaldehyde	0.0036	0.0158	0.0158	
					Hexane	0.0865	0.379	0.379	
					Lead Compounds	2.4e-05	0.000105	0.000105	
					Manganese compounds	1.83e-05	8e-05	8e-05	
					Mercury Compounds	1.25e-05	5.47e-05	5.47e-05	
					Methane	0.108	0.473	0.473	
					Naphthalene	2.93e-05	0.000128	0.000128	
					Nickel compounds	0.000101	0.000442	0.000442	
					Nitrogen Oxides	4.8	21	21	
					Nitrous Oxide	0.0108	0.0473	0.0473	
					Particulate Matter	0.365	1.6	1.6	
					PM < 2.5 micron	0.365	1.6	1.6	
					PM < 10 micron	0.365	1.6	1.6	
					Polycyclic organic matter	4.15e-06	1.82e-05	1.82e-05	
					Selenium compounds	1.15e-06	5.05e-06	5.05e-06	
					Sulfur Dioxide	0.0288	0.126	0.126	
					Toluene	0.000163	0.000715	0.000715	
					Volatile Organic Compounds	0.264	1.16	1.16	
		EQUI 6	EU003	Boiler #3	1,4-Dichlorobenzene (para-)	5.76e-05	0.000252	0.000252	
					Arsenic compounds	9.61e-06	4.21e-05	4.21e-05	
					Benzene	0.000101	0.000442	0.000442	
					Beryllium Compounds	5.76e-07	2.52e-06	2.52e-06	
					Cadmium compounds	5.28e-05	0.000231	0.000231	
					Carbon Dioxide	5,728	25,087	25,087	
					Carbon Dioxide Equivalent	5,733	25,112	25,112	
					Carbon Monoxide	4.04	17.7	17.7	
					Chromium compounds	6.73e-05	0.000295	0.000295	
					Cobalt compounds	4.04e-06	1.77e-05	1.77e-05	
					Formaldehyde	0.0036	0.0158	0.0158	
					Hexane	0.0865	0.379	0.379	
					Lead Compounds	2.4e-05	0.000105	0.000105	
					Manganese compounds	1.83e-05	8e-05	8e-05	
					Mercury Compounds	1.25e-05	5.47e-05	5.47e-05	
					Methane	0.108	0.473	0.473	
					Naphthalene	2.93e-05	0.000128	0.000128	
					Nickel compounds	0.000101	0.000442	0.000442	
					Nitrogen Oxides	4.8	21	21	
					Nitrous Oxide	0.0108	0.0473	0.0473	
					Particulate Matter	0.365	1.6	1.6	
					PM < 2.5 micron	0.365	1.6	1.6	
					PM < 10 micron	0.365	1.6	1.6	
					Polycyclic organic matter	4.15e-06	1.82e-05	1.82e-05	
					Selenium compounds	1.15e-06	5.05e-06	5.05e-06	
					Sulfur Dioxide	0.0288	0.126	0.126	
					Toluene	0.000163	0.000715	0.000715	
					Volatile Organic Compounds	0.264	1.16	1.16	
		EQUI 7	EU004	Boiler #4	1,4-Dichlorobenzene (para-)	2.95e-05	0.000129	0.000129	
					Arsenic compounds	4.92e-06	2.16e-05	2.16e-05	
					Benzene	5.17e-05	0.000226	0.000226	
					Beryllium Compounds	2.95e-07	1.29e-06	1.29e-06	
					Cadmium compounds	2.71e-05	0.000119	0.000119	
					Carbon Dioxide	2,934	12,851	12,851	
					Carbon Dioxide Equivalent	2,937	12,864	12,864	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Boiler	EQUI 7	EU004	Boiler #4	Carbon Monoxide	2.07	9.05	9.05	
					Chromium compounds	3.45e-05	0.000151	0.000151	
					Cobalt compounds	2.07e-06	9.05e-06	9.05e-06	
					Formaldehyde	0.00185	0.00808	0.00808	
					Hexane	0.0443	0.194	0.194	
					Lead Compounds	1.23e-05	5.39e-05	5.39e-05	
					Manganese compounds	9.35e-06	4.1e-05	4.1e-05	
					Mercury Compounds	6.4e-06	2.8e-05	2.8e-05	
					Methane	0.0553	0.242	0.242	
					Naphthalene	1.5e-05	6.57e-05	6.57e-05	
					Nickel compounds	5.17e-05	0.000226	0.000226	
					Nitrogen Oxides	2.46	10.8	10.8	
					Nitrous Oxide	0.00553	0.0242	0.0242	
					Particulate Matter	0.187	0.819	0.819	
					PM < 2.5 micron	0.187	0.819	0.819	
					PM < 10 micron	0.187	0.819	0.819	
					Polycyclic organic matter	2.13e-06	9.31e-06	9.31e-06	
					Selenium compounds	5.91e-07	2.59e-06	2.59e-06	
					Sulfur Dioxide	0.0148	0.0647	0.0647	
					Toluene	8.37e-05	0.000366	0.000366	
					Volatile Organic Compounds	0.135	0.593	0.593	
		EQUI 8	EU005	Boiler #5	1,4-Dichlorobenzene (para-)	8.4e-06	3.68e-05	3.68e-05	
					Arsenic compounds	1.4e-06	6.13e-06	6.13e-06	
					Benzene	1.47e-05	6.44e-05	6.44e-05	
					Beryllium Compounds	8.4e-08	3.68e-07	3.68e-07	
					Cadmium compounds	7.7e-06	3.37e-05	3.37e-05	
					Carbon Dioxide	835	3,655	3,655	
					Carbon Dioxide Equivalent	835	3,659	3,659	
					Carbon Monoxide	0.59	2.58	2.58	
					Chromium compounds	9.8e-06	4.29e-05	4.29e-05	
					Cobalt compounds	5.88e-07	2.58e-06	2.58e-06	
					Formaldehyde	0.000525	0.0023	0.0023	
					Hexane	0.0126	0.0552	0.0552	
					Lead Compounds	3.5e-06	1.53e-05	1.53e-05	
					Manganese compounds	2.66e-06	1.17e-05	1.17e-05	
					Mercury Compounds	1.82e-06	7.97e-06	7.97e-06	
					Methane	0.0157	0.0689	0.0689	
					Naphthalene	4.27e-06	1.87e-05	1.87e-05	
					Nickel compounds	1.47e-05	6.44e-05	6.44e-05	
					Nitrogen Oxides	0.7	3.07	3.07	
					Nitrous Oxide	0.00157	0.00689	0.00689	
					Particulate Matter	0.0532	0.233	0.233	
					PM < 2.5 micron	0.0532	0.233	0.233	
					PM < 10 micron	0.0532	0.233	0.233	
					Polycyclic organic matter	6.05e-07	2.65e-06	2.65e-06	
					Selenium compounds	1.68e-07	7.36e-07	7.36e-07	
					Sulfur Dioxide	0.0042	0.0184	0.0184	
					Toluene	2.38e-05	0.000104	0.000104	
					Volatile Organic Compounds	0.0385	0.169	0.169	
		EQUI 9	EU045	Boiler #7	1,4-Dichlorobenzene (para-)	3.46e-05	0.000151	0.000151	
Arsenic compounds	5.76e-06				2.52e-05	2.52e-05			
Benzene	6.05e-05				0.000265	0.000265			
Beryllium Compounds	3.46e-07				1.51e-06	1.51e-06			
Cadmium compounds	3.17e-05				0.000139	0.000139			
Carbon Dioxide	3,437				15,052	15,052			
Carbon Dioxide Equivalent	3,440				15,067	15,068			
Carbon Monoxide	2.42				10.6	10.6			
Chromium compounds	4.04e-05				0.000177	0.000177			
Cobalt compounds	2.42e-06				1.06e-05	1.06e-05			
Formaldehyde	0.00216				0.00947	0.00947			
Hexane	0.0519				0.227	0.227			
Lead Compounds	1.44e-05				6.31e-05	6.31e-05			
Manganese compounds	1.1e-05				4.8e-05	4.8e-05			
Mercury Compounds	7.49e-06				3.28e-05	3.28e-05			
Methane	0.0648				0.284	0.284			
Naphthalene	1.76e-05				7.7e-05	7.7e-05			
Nickel compounds	6.05e-05				0.000265	0.000265			
Nitrogen Oxides	2.88				12.6	12.6			
Nitrous Oxide	0.00648				0.0284	0.0284			
Particulate Matter	0.219				0.959	0.959			

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Boiler	EQUI 9	EU045	Boiler #7	PM < 2.5 micron	0.219	0.959	0.959	
					PM < 10 micron	0.219	0.959	0.959	
					Polycyclic organic matter	2.49e-06	1.09e-05	1.09e-05	
					Selenium compounds	6.92e-07	3.03e-06	3.03e-06	
					Sulfur Dioxide	0.0173	0.0757	0.0757	
					Toluene	9.8e-05	0.000429	0.000429	
					Volatile Organic Compounds	0.159	0.694	0.694	
					1,4-Dichlorobenzene (para-)	1.06e-05	4.64e-05	4.64e-05	
					Arsenic compounds	1.76e-06	7.73e-06	7.73e-06	
					Benzene	1.85e-05	8.12e-05	8.12e-05	
	Dryer/Oven, direct fired	EQUI 14	EU036	Scott Bone Dryer	Beryllium Compounds	1.06e-07	4.64e-07	4.64e-07	
					Cadmium compounds	9.71e-06	4.25e-05	4.25e-05	
					Carbon Dioxide	1,052	4,608	4,608	
					Carbon Dioxide Equivalent	1,053	4,612	4,612	
					Carbon Monoxide	0.74	3.25	3.25	
					Chromium compounds	1.24e-05	5.41e-05	5.41e-05	
					Cobalt compounds	7.41e-07	3.25e-06	3.25e-06	
					Formaldehyde	0.000662	0.0029	0.0029	
					Hexane	0.0159	0.0696	0.0696	
					Lead Compounds	4.41e-06	1.93e-05	1.93e-05	
					Manganese compounds	3.35e-06	1.47e-05	1.47e-05	
					Mercury Compounds	2.29e-06	1e-05	1e-05	
					Methane	0.0198	0.0869	0.0869	
					Naphthalene	5.38e-06	2.36e-05	2.36e-05	
					Nickel compounds	1.85e-05	8.12e-05	8.12e-05	
					Nitrogen Oxides	0.88	3.86	3.86	
					Nitrous Oxide	0.00198	0.00869	0.00869	
					Particulate Matter	9.07	39.7	0.164	
					PM < 2.5 micron	0.457	2	0.943	
					PM < 10 micron	2.25	9.86	0.1	
					Polycyclic organic matter	7.62e-07	3.34e-06	3.34e-06	
					Selenium compounds	2.12e-07	9.28e-07	9.28e-07	
					Sulfur Dioxide	0.00529	0.0232	0.0232	
					Toluene	3e-05	0.000131	0.000131	
					Volatile Organic Compounds	0.49	0.213	0	
		EQUI 56	EU006	Smoked Meat Oven #6 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					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	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 57	EU007	Smoked Meat Oven #7 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Dryer/Oven, direct fired	EQUI 57	EU007	Smoked Meat Oven #7 with Recirculated Natural Wood and Liquid Smoke	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	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 58	EU008	Smoked Meat Oven #8 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					Carbon Monoxide	0.124	0.541	0.541	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 59	EU009	Smoked Meat Oven #9 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					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	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Dryer/Oven, direct fired	EQUI 59	EU009	Smoked Meat Oven #9 with Recirculated Natural Wood and Liquid Smoke	PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 60	EU010	Smoked Meat Oven #10 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					Carbon Monoxide	0.124	0.541	0.541	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 61	EU011	Smoked Meat Oven #11 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					Carbon Monoxide	0.124	0.541	0.541	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 62	EU012	Smoked Meat Oven #12 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Dryer/Oven, direct fired	EQUI 62	EU012	Smoked Meat Oven #12 with Recirculated Natural Wood and Liquid Smoke	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	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 63	EU013	Smoked Meat Oven #1 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					Carbon Monoxide	0.124	0.541	0.541	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	3.22e-06	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 64	EU014	Smoked Meat Oven #2 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					Carbon Monoxide	0.124	0.541	0.541	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Dryer/Oven, direct fired	EQUI 64	EU014	Smoked Meat Oven #2 with Recirculated Natural Wood and Liquid Smoke	PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 65	EU015	Smoked Meat Oven #3 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					Carbon Monoxide	0.124	0.541	0.541	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 66	EU016	Smoked Meat Oven #4 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	
					Carbon Monoxide	0.124	0.541	0.541	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.00331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	0.0354	0.0354	
		EQUI 67	EU017	Smoked Meat Oven #5 with Recirculated Natural Wood and Liquid Smoke	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 Compounds	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175	768	768	
					Carbon Dioxide Equivalent	176	769	769	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Dryer/Oven, direct fired	EQUI 67	EU017	Smoked Meat Oven #5 with Recirculated Natural Wood and Liquid Smoke	Carbon Monoxide	0.124	0.541	0.541	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	
					Formaldehyde	0.00011	0.000483	0.000483	
					Hexane	0.00265	0.0116	0.0116	
					Lead Compounds	7.35e-07	3.22e-06	3.22e-06	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury Compounds	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.00331	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	0.147	0.644	0.644	
					Nitrous Oxide	0.000331	0.00145	0.00145	
					Particulate Matter	0.0112	0.049	0.049	
					PM < 2.5 micron	0.0112	0.049	0.049	
					PM < 10 micron	0.0112	0.049	0.049	
					Polycyclic organic matter	1.27e-07	5.57e-07	5.57e-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	
	Dryer/Oven, indirect fired	EQUI 113	Null	Dupps Blood Dryer	Volatile Organic Compounds	0.00809	0.0354	0.0354	
					1,4-Dichlorobenzene (para-)	6.47e-06	2.83e-05	2.83e-05	
					Arsenic compounds	1.08e-06	4.72e-06	4.72e-06	
					Benzene	1.13e-05	4.96e-05	4.96e-05	
					Beryllium Compounds	6.47e-08	2.83e-07	2.83e-07	
					Cadmium compounds	5.93e-06	2.6e-05	2.6e-05	
					Carbon Dioxide	643	2,816	2,816	
					Carbon Dioxide Equivalent	644	2,819	2,819	
					Carbon Monoxide	0.45	1.98	1.98	
					Chromium compounds	7.55e-06	3.31e-05	3.31e-05	
					Cobalt compounds	4.53e-07	1.98e-06	1.98e-06	
					Formaldehyde	0.000404	0.00177	0.00177	
					Hexane	0.00971	0.0425	0.0425	
					Lead Compounds	2.7e-06	1.18e-05	1.18e-05	
					Manganese compounds	2.05e-06	8.97e-06	8.97e-06	
					Mercury Compounds	1.4e-06	6.14e-06	6.14e-06	
					Methane	0.0121	0.0531	0.0531	
					Naphthalene	3.29e-06	1.44e-05	1.44e-05	
					Nickel compounds	1.13e-05	4.96e-05	4.96e-05	
					Nitrogen Oxides	0.54	2.36	2.36	
					Nitrous Oxide	0.00121	0.00531	0.00531	
					Particulate Matter	131	572	2.14	
					PM < 2.5 micron	45.9	201	2.14	
					PM < 10 micron	45.9	201	2.14	
					Polycyclic organic matter	4.75e-07	2.04e-06	2.04e-06	
					Selenium compounds	1.29e-07	5.67e-07	5.67e-07	
					Sulfur Dioxide	0.00324	0.0142	0.0142	
					Toluene	1.83e-05	8.03e-05	8.03e-05	
					Volatile Organic Compounds	0.03	0.13	0.13	
		EQUI 117	Null	AFO Fire Braising Unit	1,4-Dichlorobenzene (para-)	2.31e-06	1.01e-05	1.01e-05	
					Arsenic compounds	3.84e-07	1.68e-06	1.68e-06	
					Benzene	4.04e-06	1.77e-05	1.77e-05	
					Beryllium Compounds	2.31e-08	1.01e-07	1.01e-07	
					Cadmium compounds	2.11e-06	9.26e-06	9.26e-06	
					Carbon Dioxide	229	1,003	1,003	
					Carbon Dioxide Equivalent	229	1,004	1,004	
					Carbon Monoxide	2.54	11.1	11.1	
					Chromium compounds	2.11e-06	9.26e-06	9.26e-06	
					Cobalt compounds	1.61e-07	7.07e-07	7.07e-07	
					Formaldehyde	0.000144	0.000631	0.000631	
					Hexane	0.00346	0.0151	0.0151	
					Lead Compounds	9.61e-07	4.21e-06	4.21e-06	
					Manganese compounds	7.3e-07	3.2e-06	3.2e-06	
					Mercury Compounds	5e-07	2.19e-06	2.19e-06	
					Methane	0.00432	0.0189	0.0189	
					Naphthalene	1.17e-06	5.13e-06	5.13e-06	
					Nickel compounds	4.04e-06	1.77e-05	1.77e-05	
					Nitrogen Oxides	1.92e-07	8.42e-07	8.42e-07	
					Nitrous Oxide	0.000432	0.00189	0.00189	
					Particulate Matter	0.15	0.66	0.66	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Dryer/Oven, indirect fired	EQUI 117	Null	AFO Fire Braising Unit	PM < 2.5 micron	0.53	2.32	2.32	
					PM < 10 micron	0.53	0.66	2.32	
					Polycyclic organic matter	1.69e-07	7.41e-07	7.41e-07	
					Selenium compounds	4.61e-08	2.02e-07	2.02e-07	
					Sulfur Dioxide	0.02	0.088	0.088	
					Toluene	6.53e-06	2.86e-05	2.86e-05	
					Volatile Organic Compounds	1.06e-08	4.63e-08	4.63e-08	
		EQUI 118	Null	Smoke Generator	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	
					Carbon Monoxide	1.62	7.1	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0195	0.0854	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.042	0.184	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0676	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
		EQUI 119	Null	Smoke Generator	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.3	138	0	
					Carbon Monoxide	1.62	7.1	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0195	0.0854	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.042	0.184	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0676	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
		EQUI 120	Null	Smoke Generator	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	
					Carbon Monoxide	1.89	8.28	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0195	0.0854	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.042	0.18	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0676	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Incinerator	EQUI 123	Null	Hog Hair Singer #2	1,4-Dichlorobenzene (para-)	1.18e-05	5.15e-05	5.15e-05	
					Arsenic compounds	1.96e-06	8.59e-06	8.59e-06	
					Benzene	2.06e-05	9.02e-05	9.02e-05	
					Beryllium Compounds	1.18e-07	5.15e-07	5.15e-07	
					Cadmium compounds	1.08e-05	4.72e-05	4.72e-05	
					Carbon Dioxide	1,169	5,120	5,120	
					Carbon Dioxide Equivalent	1,170	5,125	5,125	
					Carbon Monoxide	0.82	3.61	3.61	
					Chromium compounds	1.37e-05	6.01e-05	6.01e-05	
					Cobalt compounds	8.24e-07	3.61e-06	3.61e-06	
					Formaldehyde	0.000735	0.00322	0.00322	
					Hexane	0.0176	0.0773	0.0773	
					Lead Compounds	4.9e-06	2.15e-05	2.15e-05	
					Manganese compounds	3.73e-06	1.63e-05	1.63e-05	
					Mercury Compounds	2.55e-06	1.12e-05	1.12e-05	
					Methane	0.022	0.0966	0.0966	
					Naphthalene	5.98e-06	2.62e-05	2.62e-05	
					Nickel compounds	2.06e-05	9.02e-05	9.02e-05	
					Nitrogen Oxides	0.98	4.29	4.29	
					Nitrous Oxide	0.0022	0.00966	0.00966	
					Particulate Matter	0.0745	0.326	0.326	
					PM < 2.5 micron	0.0745	0.326	0.326	
					PM < 10 micron	0.0745	0.326	0.326	
					Polycyclic organic matter	8.47e-07	3.71e-06	3.71e-06	
					Selenium compounds	2.35e-07	1.03e-06	1.03e-06	
					Sulfur Dioxide	0.00588	0.0258	0.0258	
					Toluene	3.33e-05	0.000146	0.000146	
					Volatile Organic Compounds	0.0539	0.236	0.236	
	Loading-Unloading Equipment	EQUI 18	EU090	Crax Storage Room Air	Particulate Matter	4.47	19.6	2.94	
					PM < 2.5 micron	0.67	18.4	2.94	
					PM < 10 micron	4.19	18.4	2.94	
					Volatile Organic Compounds	0.67	2.94	2.94	
	Other Combustion	EQUI 73	EU092	Refined Products MAU 1	1,4-Dichlorobenzene (para-)	5.76e-06	2.52e-05	2.52e-05	
					Arsenic compounds	9.6e-07	4.2e-06	4.2e-06	
					Benzene	1.01e-05	4.42e-05	4.42e-05	
					Beryllium Compounds	5.76e-08	2.52e-07	2.52e-07	
					Cadmium compounds	5.28e-06	2.31e-05	2.31e-05	
					Carbon Dioxide	572	2,507	2,507	
					Carbon Dioxide Equivalent	573	2,507	2,507	
					Carbon Monoxide	0.4	1.77	1.77	
					Chromium compounds	6.72e-06	2.94e-05	2.94e-05	
					Cobalt compounds	4.03e-07	1.77e-06	1.77e-06	
					Formaldehyde	0.00036	0.00158	0.00158	
					Hexane	0.00864	0.0378	0.0378	
					Lead Compounds	2.4e-06	1.05e-05	1.05e-05	
					Manganese compounds	1.82e-06	7.99e-06	7.99e-06	
					Mercury Compounds	1.25e-06	5.47e-06	5.47e-06	
					Methane	0.0108	0.0473	0.0473	
					Naphthalene	2.93e-06	1.28e-05	1.28e-05	
					Nickel compounds	1.01e-05	4.42e-05	4.42e-05	
					Nitrogen Oxides	0.48	2.1	2.1	
					Nitrous Oxide	0.00108	0.00473	0.00473	
					Particulate Matter	0.0365	0.16	0.16	
					PM < 2.5 micron	0.0365	0.16	0.16	
					PM < 10 micron	0.0365	0.16	0.16	
					Polycyclic organic matter	4.15e-07	1.82e-06	1.82e-06	
					Selenium compounds	1.15e-07	5.05e-07	5.05e-07	
					Sulfur Dioxide	0.00288	0.0126	0.0126	
					Toluene	1.63e-05	7.15e-05	7.15e-05	
					Volatile Organic Compounds	0.0264	0.116	0.116	
		EQUI 74	EU093	Refined Products MAU 2	1,4-Dichlorobenzene (para-)	5.76e-06	2.52e-05	2.52e-05	
					Arsenic compounds	9.6e-07	4.2e-06	4.2e-06	
					Benzene	1.01e-05	4.42e-05	4.42e-05	
					Beryllium Compounds	5.76e-08	2.52e-07	2.52e-07	
					Cadmium compounds	5.28e-06	2.31e-05	2.31e-05	
					Carbon Dioxide	572	2,507	2,507	
					Carbon Dioxide Equivalent	573	2,510	2,510	
					Carbon Monoxide	0.4	1.77	1.77	
					Chromium compounds	6.72e-06	2.94e-05	2.94e-05	
					Cobalt compounds	4.03e-07	1.77e-06	1.77e-06	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 74	EU093	Refined Products MAU 2	Formaldehyde	0.00036	0.00158	0.00158	
					Hexane	0.00864	0.0378	0.0378	
					Lead Compounds	2.4e-06	1.05e-05	1.05e-05	
					Manganese compounds	1.82e-06	7.99e-06	7.99e-06	
					Mercury Compounds	1.25e-06	5.47e-06	5.47e-06	
					Methane	0.0108	0.0473	0.0473	
					Naphthalene	2.93e-06	1.28e-05	1.28e-05	
					Nickel compounds	1.01e-05	4.42e-05	4.42e-05	
					Nitrogen Oxides	0.48	2.1	2.1	
					Nitrous Oxide	0.00108	0.00473	0.00473	
					Particulate Matter	0.0365	0.16	0.16	
					PM < 2.5 micron	0.0365	0.16	0.16	
					PM < 10 micron	0.0365	0.16	0.16	
					Polycyclic organic matter	4.15e-07	1.82e-06	1.82e-06	
					Selenium compounds	1.15e-07	5.05e-07	5.05e-07	
					Sulfur Dioxide	0.00288	0.0126	0.0126	
					Toluene	1.63e-05	7.15e-05	7.15e-05	
					Volatile Organic Compounds	0.0264	0.116	0.116	
		EQUI 75	EU094	Refined Products MAU 3	1,4-Dichlorobenzene (para-)	2.88e-06	1.26e-05	1.26e-05	
					Arsenic compounds	4.8e-07	2.1e-06	2.1e-06	
					Benzene	5.04e-06	2.21e-05	2.21e-05	
					Beryllium Compounds	2.88e-08	1.26e-07	1.26e-07	
					Cadmium compounds	2.64e-06	1.16e-05	1.16e-05	
					Carbon Dioxide	286	1,253	1,253	
					Carbon Dioxide Equivalent	286	1,255	1,255	
					Carbon Monoxide	0.202	0.883	0.883	
					Chromium compounds	3.36e-06	1.47e-05	1.47e-05	
					Cobalt compounds	2.02e-07	8.83e-07	8.83e-07	
					Formaldehyde	0.00018	0.000788	0.000788	
					Hexane	0.00432	0.0189	0.0189	
					Lead Compounds	1.2e-06	5.26e-06	5.26e-06	
					Manganese compounds	9.12e-07	3.99e-06	3.99e-06	
					Mercury Compounds	6.24e-07	2.73e-06	2.73e-06	
					Methane	0.0054	0.0236	0.0236	
					Naphthalene	1.46e-06	6.41e-06	6.41e-06	
					Nickel compounds	5.04e-06	2.21e-05	2.21e-05	
					Nitrogen Oxides	0.24	1.05	1.05	
					Nitrous Oxide	0.00054	0.00236	0.00236	
					Particulate Matter	0.0182	0.0799	0.0799	
					PM < 2.5 micron	0.0182	0.0799	0.0799	
					PM < 10 micron	0.0182	0.0799	0.0799	
					Polycyclic organic matter	2.07e-07	9.08e-07	9.08e-07	
					Selenium compounds	5.76e-08	2.52e-07	2.52e-07	
					Sulfur Dioxide	0.00144	0.00631	0.00631	
					Toluene	8.16e-06	3.57e-05	3.57e-05	
					Volatile Organic Compounds	0.0132	0.0578	0.0578	
		EQUI 90	Null	KC13 Unit	1,4-Dichlorobenzene (para-)	2.94e-06	1.29e-05	1.29e-05	
					Arsenic compounds	4.89e-07	2.14e-06	2.14e-06	
					Benzene	5.14e-06	2.25e-05	2.25e-05	
					Beryllium Compounds	2.94e-08	1.29e-07	1.29e-07	
					Cadmium compounds	2.7e-06	1.18e-05	1.18e-05	
					Carbon Dioxide	292	1,277	1,277	
					Carbon Dioxide Equivalent	292	1,279	1,279	
					Carbon Monoxide	0.205	0.9	0.9	
					Chromium compounds	3.42e-06	1.5e-05	1.5e-05	
					Cobalt compounds	2.05e-07	9e-07	9e-07	
					Formaldehyde	0.000183	0.000804	0.000804	
					Hexane	0.0044	0.0193	0.0193	
					Lead Compounds	1.22e-06	5.36e-06	5.36e-06	
					Manganese compounds	9.3e-07	4.07e-06	4.07e-06	
					Mercury Compounds	6.36e-07	2.79e-06	2.79e-06	
					Methane	0.0055	0.0241	0.0241	
					Naphthalene	1.49e-06	6.54e-06	6.54e-06	
					Nickel compounds	5.14e-06	2.25e-05	2.25e-05	
					Nitrogen Oxides	0.245	1.07	1.07	
					Nitrous Oxide	0.00055	0.00241	0.00241	
					Particulate Matter	0.0186	0.0814	0.0814	
					PM < 2.5 micron	0.0186	0.0814	0.0814	
					PM < 10 micron	0.0186	0.0814	0.0814	
					Polycyclic organic matter	2.11e-07	9.26e-07	9.26e-07	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 90	Null	KC13 Unit	Selenium compounds	5.87e-08	2.57e-07	2.57e-07	
					Sulfur Dioxide	0.00147	0.00643	0.00643	
					Toluene	8.32e-06	3.64e-05	3.64e-05	
					Volatile Organic Compounds	0.0135	0.0589	0.0589	
		EQUI 91	Null	MP4	1,4-Dichlorobenzene (para-)	2.79e-06	1.22e-05	1.22e-05	
					Arsenic compounds	4.65e-07	2.04e-06	2.04e-06	
					Benzene	4.88e-06	2.14e-05	2.14e-05	
					Beryllium Compounds	2.79e-08	1.22e-07	1.22e-07	
					Cadmium compounds	2.56e-06	1.12e-05	1.12e-05	
					Carbon Dioxide	277	1,213	1,213	
					Carbon Dioxide Equivalent	277	1,215	1,215	
					Carbon Monoxide	0.195	0.855	0.855	
					Chromium compounds	3.25e-06	1.42e-05	1.42e-05	
					Cobalt compounds	1.95e-07	8.55e-07	8.55e-07	
					Formaldehyde	0.000174	0.000763	0.000763	
					Hexane	0.00418	0.0183	0.0183	
					Lead Compounds	1.16e-06	5.09e-06	5.09e-06	
					Manganese compounds	8.83e-07	3.87e-06	3.87e-06	
					Mercury Compounds	6.04e-07	2.65e-06	2.65e-06	
					Methane	0.00522	0.0229	0.0229	
					Naphthalene	1.42e-06	6.21e-06	6.21e-06	
					Nickel compounds	4.88e-06	2.14e-05	2.14e-05	
					Nitrogen Oxides	0.232	1.02	1.02	
					Nitrous Oxide	0.000522	0.00229	0.00229	
					Particulate Matter	0.0177	0.0773	0.0773	
					PM < 2.5 micron	0.0177	0.0773	0.0773	
					PM < 10 micron	0.0177	0.0773	0.0773	
					Polycyclic organic matter	2.01e-07	8.79e-07	8.79e-07	
					Selenium compounds	5.58e-08	2.44e-07	2.44e-07	
					Sulfur Dioxide	0.00139	0.00611	0.00611	
					Toluene	7.9e-06	3.46e-05	3.46e-05	
					Volatile Organic Compounds	0.0128	0.056	0.056	
		EQUI 92	Null	Dehair MAU-KC146-2	1,4-Dichlorobenzene (para-)	4.71e-06	2.06e-05	2.06e-05	
					Arsenic compounds	7.84e-07	3.44e-06	3.44e-06	
					Benzene	8.24e-06	3.61e-05	3.61e-05	
					Beryllium Compounds	4.71e-08	2.06e-07	2.06e-07	
					Cadmium compounds	4.31e-06	1.89e-05	1.89e-05	
					Carbon Dioxide	468	2,048	2,048	
					Carbon Dioxide Equivalent	468	2,050	2,050	
					Carbon Monoxide	0.329	1.44	1.44	
					Chromium compounds	5.49e-06	2.4e-05	2.4e-05	
					Cobalt compounds	3.29e-07	1.44e-06	1.44e-06	
					Formaldehyde	0.000294	0.00129	0.00129	
					Hexane	0.00706	0.0309	0.0309	
					Lead Compounds	1.96e-06	8.59e-06	8.59e-06	
					Manganese compounds	1.49e-06	6.53e-06	6.53e-06	
					Mercury Compounds	1.02e-06	4.47e-06	4.47e-06	
					Methane	0.00882	0.0386	0.0386	
					Naphthalene	2.39e-06	1.05e-05	1.05e-05	
					Nickel compounds	8.24e-06	3.61e-05	3.61e-05	
					Nitrogen Oxides	0.392	1.72	1.72	
					Nitrous Oxide	0.000882	0.00386	0.00386	
					Particulate Matter	0.0298	0.131	0.131	
					PM < 2.5 micron	0.0298	0.131	0.131	
					PM < 10 micron	0.0298	0.131	0.131	
					Polycyclic organic matter	3.39e-07	1.48e-06	1.48e-06	
					Selenium compounds	9.41e-08	4.12e-07	4.12e-07	
					Sulfur Dioxide	0.00235	0.0103	0.0103	
					Toluene	1.33e-05	5.84e-05	5.84e-05	
					Volatile Organic Compounds	0.0216	0.0945	0.0945	
		EQUI 93	Null	MAU #4	1,4-Dichlorobenzene (para-)	3.99e-06	1.75e-05	1.75e-05	
					Arsenic compounds	6.65e-07	2.91e-06	2.91e-06	
					Benzene	6.98e-06	3.06e-05	3.06e-05	
					Beryllium Compounds	3.99e-08	1.75e-07	1.75e-07	
					Cadmium compounds	3.66e-06	1.6e-05	1.6e-05	
					Carbon Dioxide	396	1,736	1,736	
					Carbon Dioxide Equivalent	397	1,737	1,737	
					Carbon Monoxide	0.279	1.22	1.22	
					Chromium compounds	4.65e-06	2.04e-05	2.04e-05	
					Cobalt compounds	2.79e-07	1.22e-06	1.22e-06	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 93	Null	MAU #4	Formaldehyde	0.000249	0.00109	0.00109	
					Hexane	0.00598	0.0262	0.0262	
					Lead Compounds	1.66e-06	7.28e-06	7.28e-06	
					Manganese compounds	1.26e-06	5.53e-06	5.53e-06	
					Mercury Compounds	8.64e-07	3.78e-06	3.78e-06	
					Methane	0.00747	0.0327	0.0327	
					Naphthalene	2.03e-06	8.88e-06	8.88e-06	
					Nickel compounds	6.98e-06	3.06e-05	3.06e-05	
					Nitrogen Oxides	0.332	1.46	1.46	
					Nitrous Oxide	0.000747	0.00327	0.00327	
					Particulate Matter	0.0253	0.111	0.111	
					PM < 2.5 micron	0.0253	0.111	0.111	
					PM < 10 micron	0.0253	0.111	0.111	
					Polycyclic organic matter	2.87e-07	1.26e-06	1.26e-06	
					Selenium compounds	7.98e-08	3.49e-07	3.49e-07	
					Sulfur Dioxide	0.00199	0.00873	0.00873	
					Toluene	1.13e-05	4.95e-05	4.95e-05	
					Volatile Organic Compounds	0.0183	0.0801	0.0801	
		EQUI 94	Null	Rendering Air MAH #2	1,4-Dichlorobenzene (para-)	2.55e-06	1.12e-05	1.12e-05	
					Arsenic compounds	4.25e-07	1.86e-06	1.86e-06	
					Benzene	4.47e-06	1.96e-05	1.96e-05	
					Beryllium Compounds	2.55e-08	1.12e-07	1.12e-07	
					Cadmium compounds	2.34e-06	1.03e-05	1.03e-05	
					Carbon Dioxide	254	1,111	1,111	
					Carbon Dioxide Equivalent	254	1,112	1,112	
					Carbon Monoxide	0.179	0.783	0.783	
					Chromium compounds	2.98e-06	1.3e-05	1.3e-05	
					Cobalt compounds	1.79e-07	7.83e-07	7.83e-07	
					Formaldehyde	0.00016	0.000699	0.000699	
					Hexane	0.00383	0.0168	0.0168	
					Lead Compounds	1.06e-06	4.66e-06	4.66e-06	
					Manganese compounds	8.08e-07	3.54e-06	3.54e-06	
					Mercury Compounds	5.53e-07	2.42e-06	2.42e-06	
					Methane	0.00478	0.021	0.021	
					Naphthalene	1.3e-06	5.68e-06	5.68e-06	
					Nickel compounds	4.47e-06	1.96e-05	1.96e-05	
					Nitrogen Oxides	0.213	0.932	0.932	
					Nitrous Oxide	0.000478	0.0021	0.0021	
					Particulate Matter	0.0162	0.0708	0.0708	
					PM < 2.5 micron	0.0162	0.0708	0.0708	
					PM < 10 micron	0.0162	0.0708	0.0708	
					Polycyclic organic matter	1.84e-07	8.05e-07	8.05e-07	
					Selenium compounds	5.11e-08	2.24e-07	2.24e-07	
					Sulfur Dioxide	0.00128	0.00559	0.00559	
					Toluene	7.23e-06	3.17e-05	3.17e-05	
					Volatile Organic Compounds	0.0117	0.0513	0.0513	
		EQUI 95	Null	Old Boiler Room MAU	1,4-Dichlorobenzene (para-)	6.61e-06	2.89e-05	2.89e-05	
					Arsenic compounds	1.1e-06	4.82e-06	4.82e-06	
					Benzene	1.16e-05	5.06e-05	5.06e-05	
					Beryllium Compounds	6.61e-08	2.89e-07	2.89e-07	
					Cadmium compounds	6.06e-06	2.65e-05	2.65e-05	
					Carbon Dioxide	656	2,875	2,875	
					Carbon Dioxide Equivalent	657	2,878	2,878	
					Carbon Monoxide	0.46	2.03	2.03	
					Chromium compounds	7.71e-06	3.38e-05	3.38e-05	
					Cobalt compounds	4.62e-07	2.03e-06	2.03e-06	
					Formaldehyde	0.000413	0.00181	0.00181	
					Hexane	0.00991	0.0434	0.0434	
					Lead Compounds	2.75e-06	1.21e-05	1.21e-05	
					Manganese compounds	2.09e-06	9.16e-06	9.16e-06	
					Mercury Compounds	1.43e-06	6.27e-06	6.27e-06	
					Methane	0.0124	0.0542	0.0542	
					Naphthalene	3.36e-06	1.47e-05	1.47e-05	
					Nickel compounds	1.16e-05	5.06e-05	5.06e-05	
					Nitrogen Oxides	0.55	2.41	2.41	
					Nitrous Oxide	0.00124	0.00542	0.00542	
					Particulate Matter	0.0418	0.183	0.183	
					PM < 2.5 micron	0.0418	0.183	0.183	
					PM < 10 micron	0.0418	0.183	0.183	
					Polycyclic organic matter	4.76e-07	2.08e-06	2.08e-06	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 95	Null	Old Boiler Room MAU	Selenium compounds	1.32e-07	5.79e-07	5.79e-07	
					Sulfur Dioxide	0.0033	0.0145	0.0145	
					Toluene	1.87e-05	8.2e-05	8.2e-05	
					Volatile Organic Compounds	0.0303	0.133	0.133	
		EQUI 96	Null	Hog Hair Singer #1	1,4-Dichlorobenzene (para-)	9.41e-06	4.12e-05	4.12e-05	
					Arsenic compounds	1.57e-06	6.87e-06	6.87e-06	
					Benzene	1.65e-05	7.21e-05	7.21e-05	
					Beryllium Compounds	9.41e-08	4.12e-07	4.12e-07	
					Cadmium compounds	8.63e-06	3.78e-05	3.78e-05	
					Carbon Dioxide	935	4,096	4,096	
					Carbon Dioxide Equivalent	936	4,100	4,100	
					Carbon Monoxide	0.66	2.89	2.89	
					Chromium compounds	1.1e-05	4.81e-05	4.81e-05	
					Cobalt compounds	6.59e-07	2.89e-06	2.89e-06	
					Formaldehyde	0.000588	0.00258	0.00258	
					Hexane	0.0141	0.0618	0.0618	
					Lead Compounds	3.92e-06	1.72e-05	1.72e-05	
					Manganese compounds	2.98e-06	1.31e-05	1.31e-05	
					Mercury Compounds	2.04e-06	8.93e-06	8.93e-06	
					Methane	0.0176	0.0772	0.0772	
					Naphthalene	4.78e-06	2.1e-05	2.1e-05	
					Nickel compounds	1.65e-05	7.21e-05	7.21e-05	
					Nitrogen Oxides	0.78	3.44	3.44	
					Nitrous Oxide	0.00176	0.00772	0.00772	
					Particulate Matter	0.0596	0.261	0.261	
					PM < 2.5 micron	0.0596	0.261	0.261	
					PM < 10 micron	0.0596	0.261	0.261	
					Polycyclic organic matter	6.78e-07	2.97e-06	2.97e-06	
					Selenium compounds	1.88e-07	8.24e-07	8.24e-07	
					Sulfur Dioxide	0.00471	0.021	0.021	
					Toluene	2.67e-05	0.000117	0.000117	
					Volatile Organic Compounds	0.0431	0.189	0.189	
		EQUI 98	Null	Pretreatment Space Heater #1	1,4-Dichlorobenzene (para-)	2.35e-06	1.03e-05	1.03e-05	
					Arsenic compounds	3.92e-07	1.72e-06	1.72e-06	
					Benzene	4.12e-06	1.8e-05	1.8e-05	
					Beryllium Compounds	2.35e-08	1.03e-07	1.03e-07	
					Cadmium compounds	2.16e-06	9.45e-06	9.45e-06	
					Carbon Dioxide	234	1,024	1,024	
					Carbon Dioxide Equivalent	234	1,025	1,025	
					Carbon Monoxide	0.17	0.72	0.72	
					Chromium compounds	2.75e-06	1.2e-05	1.2e-05	
					Cobalt compounds	1.65e-07	7.21e-07	7.21e-07	
					Formaldehyde	0.000147	0.000644	0.000644	
					Hexane	0.00353	0.0155	0.0155	
					Lead Compounds	9.8e-07	4.29e-06	4.29e-06	
					Manganese compounds	7.45e-07	3.26e-06	3.26e-06	
					Mercury Compounds	5.1e-07	2.23e-06	2.23e-06	
					Methane	0.00441	0.0193	0.0193	
					Naphthalene	1.2e-06	5.24e-06	5.24e-06	
					Nickel compounds	4.12e-06	1.8e-05	1.8e-05	
					Nitrogen Oxides	0.196	0.859	0.859	
					Nitrous Oxide	0.000441	0.00193	0.00193	
					Particulate Matter	0.0149	0.0653	0.0653	
					PM < 2.5 micron	0.0149	0.0653	0.0653	
					PM < 10 micron	0.0149	0.0653	0.0653	
					Polycyclic organic matter	1.69e-07	7.42e-07	7.42e-07	
					Selenium compounds	4.71e-08	2.06e-07	2.06e-07	
					Sulfur Dioxide	0.00118	0.00515	0.00515	
					Toluene	6.67e-06	2.92e-05	2.92e-05	
					Volatile Organic Compounds	0.0108	0.0472	0.0472	
		EQUI 99	Null	KC-9 MAH	1,4-Dichlorobenzene (para-)	5.74e-06	2.52e-05	2.52e-05	
					Arsenic compounds	9.57e-07	4.19e-06	4.19e-06	
					Benzene	1.01e-05	4.4e-05	4.4e-05	
					Beryllium Compounds	5.74e-08	2.52e-07	2.52e-07	
					Cadmium compounds	5.27e-06	2.31e-05	2.31e-05	
					Carbon Dioxide	571	2,500	2,500	
					Carbon Dioxide Equivalent	571	2,503	2,503	
					Carbon Monoxide	0.4	1.76	1.76	
					Chromium compounds	6.7e-06	2.94e-05	2.94e-05	
					Cobalt compounds	4.02e-07	1.76e-06	1.76e-06	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 99	Null	KC-9 MAH	Formaldehyde	0.000359	0.00157	0.00157	
					Hexane	0.00862	0.0377	0.0377	
					Lead Compounds	2.39e-06	1.05e-05	1.05e-05	
					Manganese compounds	1.82e-06	7.97e-06	7.97e-06	
					Mercury Compounds	1.24e-06	5.45e-06	5.45e-06	
					Methane	0.0108	0.0472	0.0472	
					Naphthalene	2.92e-06	1.28e-05	1.28e-05	
					Nickel compounds	1.01e-05	4.4e-05	4.4e-05	
					Nitrogen Oxides	0.48	2.1	2.1	
					Nitrous Oxide	0.00108	0.00472	0.00472	
					Particulate Matter	0.0364	0.159	0.159	
					PM < 2.5 micron	0.0364	0.159	0.159	
					PM < 10 micron	0.0364	0.159	0.159	
					Polycyclic organic matter	4.14e-07	1.81e-06	1.81e-06	
					Selenium compounds	1.15e-07	5.03e-07	5.03e-07	
					Sulfur Dioxide	0.00287	0.0126	0.0126	
					Toluene	1.63e-05	7.13e-05	7.13e-05	
					Volatile Organic Compounds	0.0263	0.115	0.115	
		EQUI 100	Null	Rendering MAU	1,4-Dichlorobenzene (para-)	3.56e-06	1.56e-05	1.56e-05	
					Arsenic compounds	5.94e-07	2.6e-06	2.6e-06	
					Benzene	6.24e-06	2.73e-05	2.73e-05	
					Beryllium Compounds	3.56e-08	1.56e-07	1.56e-07	
					Cadmium compounds	3.27e-06	1.43e-05	1.43e-05	
					Carbon Dioxide	354	1,551	1,551	
					Carbon Dioxide Equivalent	354	1,552	1,552	
					Carbon Monoxide	0.25	1.09	1.09	
					Chromium compounds	4.16e-06	1.82e-05	1.82e-05	
					Cobalt compounds	2.49e-07	1.09e-06	1.09e-06	
					Formaldehyde	0.000223	0.000976	0.000976	
					Hexane	0.00535	0.0234	0.0234	
					Lead Compounds	1.48e-06	6.5e-06	6.5e-06	
					Manganese compounds	1.13e-06	4.94e-06	4.94e-06	
					Mercury Compounds	7.72e-07	3.38e-06	3.38e-06	
					Methane	0.00668	0.0292	0.0292	
					Naphthalene	1.81e-06	7.93e-06	7.93e-06	
					Nickel compounds	6.24e-06	2.73e-05	2.73e-05	
					Nitrogen Oxides	0.297	1.3	1.3	
					Nitrous Oxide	0.000668	0.00292	0.00292	
					Particulate Matter	0.0226	0.0989	0.0989	
					PM < 2.5 micron	0.0226	0.0989	0.0989	
					PM < 10 micron	0.0226	0.0989	0.0989	
					Polycyclic organic matter	2.57e-07	1.12e-06	1.12e-06	
					Selenium compounds	7.13e-08	3.12e-07	3.12e-07	
					Sulfur Dioxide	0.00178	0.0078	0.0078	
					Toluene	1.01e-05	4.42e-05	4.42e-05	
					Volatile Organic Compounds	0.0163	0.0715	0.0715	
		EQUI 102	Null	Hog Cut Space Heater #1	1,4-Dichlorobenzene (para-)	4.71e-06	2.06e-05	2.06e-05	
					Arsenic compounds	7.84e-07	3.44e-06	3.44e-06	
					Benzene	8.24e-06	3.61e-05	3.61e-05	
					Beryllium Compounds	4.71e-08	2.06e-07	2.06e-07	
					Cadmium compounds	4.31e-06	1.89e-05	1.89e-05	
					Carbon Dioxide	468	2,048	2,048	
					Carbon Dioxide Equivalent	468	2,050	2,050	
					Carbon Monoxide	0.33	1.44	1.44	
					Chromium compounds	5.49e-06	2.4e-05	2.4e-05	
					Cobalt compounds	3.29e-07	1.44e-06	1.44e-06	
					Formaldehyde	0.000294	0.00129	0.00129	
					Hexane	0.00706	0.0309	0.0309	
					Lead Compounds	1.96e-06	8.59e-06	8.59e-06	
					Manganese compounds	1.49e-06	6.53e-06	6.53e-06	
					Mercury Compounds	1.02e-06	4.47e-06	4.47e-06	
					Methane	0.00882	0.0386	0.0386	
					Naphthalene	2.39e-06	1.05e-05	1.05e-05	
					Nickel compounds	8.24e-06	3.61e-05	3.61e-05	
					Nitrogen Oxides	0.39	1.72	1.72	
					Nitrous Oxide	0.000882	0.00386	0.00386	
					Particulate Matter	0.0298	0.131	0.131	
					PM < 2.5 micron	0.0298	0.131	0.131	
					PM < 10 micron	0.0298	0.131	0.131	
					Polycyclic organic matter	3.39e-07	1.48e-06	1.48e-06	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 102	Null	Hog Cut Space Heater #1	Selenium compounds	9.41e-08	4.12e-07	4.12e-07	
					Sulfur Dioxide	0.00235	0.0103	0.0103	
					Toluene	1.33e-05	5.84e-05	5.84e-05	
					Volatile Organic Compounds	0.0216	0.0945	0.0945	
		EQUI 103	Null	Hog Cut Space Heater #2	1,4-Dichlorobenzene (para-)	4.71e-06	2.06e-05	2.06e-05	
					Arsenic compounds	7.84e-07	3.44e-06	3.44e-06	
					Benzene	8.24e-06	3.61e-05	3.61e-05	
					Beryllium Compounds	4.71e-08	2.06e-07	2.06e-07	
					Cadmium compounds	4.31e-06	1.89e-05	1.89e-05	
					Carbon Dioxide	468	2,048	2,048	
					Carbon Dioxide Equivalent	468	2,050	2,050	
					Carbon Monoxide	0.33	1.44	1.44	
					Chromium compounds	5.49e-06	2.4e-05	2.4e-05	
					Cobalt compounds	3.29e-07	1.44e-06	1.44e-06	
					Formaldehyde	0.000294	0.00129	0.00129	
					Hexane	0.00706	0.0309	0.0309	
					Lead Compounds	1.96e-06	8.59e-06	8.59e-06	
					Manganese compounds	1.49e-06	6.53e-06	6.53e-06	
					Mercury Compounds	1.02e-06	4.47e-06	4.47e-06	
					Methane	0.00882	0.0386	0.0386	
					Naphthalene	2.39e-06	1.05e-05	1.05e-05	
					Nickel compounds	8.24e-06	3.61e-05	3.61e-05	
					Nitrogen Oxides	0.39	1.72	1.72	
					Nitrous Oxide	0.000882	0.00386	0.00386	
					Particulate Matter	0.0298	0.131	0.131	
					PM < 2.5 micron	0.0298	0.131	0.131	
					PM < 10 micron	0.0298	0.131	0.131	
					Polycyclic organic matter	3.39e-07	1.48e-06	1.48e-06	
					Selenium compounds	9.41e-08	4.12e-07	4.12e-07	
					Sulfur Dioxide	0.00235	0.0103	0.0103	
					Toluene	1.33e-05	5.84e-05	5.84e-05	
					Volatile Organic Compounds	0.0216	0.0945	0.0945	
		EQUI 104	Null	Dry Rm #5 Desiccant Unit Conditioner #5-1	1,4-Dichlorobenzene (para-)	2.79e-06	1.22e-05	1.22e-05	
					Arsenic compounds	4.65e-07	2.04e-06	2.04e-06	
					Benzene	4.88e-06	2.14e-05	2.14e-05	
					Beryllium Compounds	2.79e-08	1.22e-07	1.22e-07	
					Cadmium compounds	2.56e-06	1.12e-05	1.12e-05	
					Carbon Dioxide	277	1,214	1,214	
					Carbon Dioxide Equivalent	277	1,215	1,215	
					Carbon Monoxide	0.2	0.86	0.86	
					Chromium compounds	3.25e-06	1.43e-05	1.43e-05	
					Cobalt compounds	1.95e-07	8.55e-07	8.55e-07	
					Formaldehyde	0.000174	0.000764	0.000764	
					Hexane	0.00418	0.0183	0.0183	
					Lead Compounds	1.16e-06	5.09e-06	5.09e-06	
					Manganese compounds	8.83e-07	3.87e-06	3.87e-06	
					Mercury Compounds	6.04e-07	2.65e-06	2.65e-06	
					Methane	0.00523	0.0229	0.0229	
					Naphthalene	1.42e-06	6.21e-06	6.21e-06	
					Nickel compounds	4.88e-06	2.14e-05	2.14e-05	
					Nitrogen Oxides	0.232	1.02	1.02	
					Nitrous Oxide	0.000523	0.00229	0.00229	
					Particulate Matter	0.0177	0.0774	0.0774	
					PM < 2.5 micron	0.0177	0.0774	0.0774	
					PM < 10 micron	0.0177	0.0774	0.0774	
					Polycyclic organic matter	2.01e-07	8.8e-07	8.8e-07	
					Selenium compounds	5.58e-08	2.44e-07	2.44e-07	
					Sulfur Dioxide	0.00139	0.00611	0.00611	
					Toluene	7.9e-06	3.46e-05	3.46e-05	
					Volatile Organic Compounds	0.0128	0.056	0.056	
		EQUI 105	Null	QPP Animal Welfare & Handling -MAU-1	1,4-Dichlorobenzene (para-)	2.77e-06	1.21e-05	1.21e-05	
					Arsenic compounds	4.61e-07	2.02e-06	2.02e-06	
					Benzene	4.84e-06	2.12e-05	2.12e-05	
					Beryllium Compounds	2.77e-08	1.21e-07	1.21e-07	
					Cadmium compounds	2.54e-06	1.11e-05	1.11e-05	
					Carbon Dioxide	275	1,205	1,205	
					Carbon Dioxide Equivalent	275	1,206	1,206	
					Carbon Monoxide	0.19	0.85	0.85	
					Chromium compounds	3.23e-06	1.41e-05	1.41e-05	
					Cobalt compounds	1.94e-07	8.49e-07	8.49e-07	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 105	Null	QPP Animal Welfare & Handling -MAU-1	Formaldehyde	0.000173	0.000758	0.000758	
					Hexane	0.00415	0.0182	0.0182	
					Lead Compounds	1.15e-06	5.05e-06	5.05e-06	
					Manganese compounds	8.77e-07	3.84e-06	3.84e-06	
					Mercury Compounds	6e-07	2.63e-06	2.63e-06	
					Methane	0.00519	0.0227	0.0227	
					Naphthalene	1.41e-06	6.16e-06	6.16e-06	
					Nickel compounds	4.84e-06	2.12e-05	2.12e-05	
					Nitrogen Oxides	0.23	1.01	1.01	
					Nitrous Oxide	0.000519	0.00227	0.00227	
					Particulate Matter	0.0175	0.0768	0.0768	
					PM < 2.5 micron	0.0175	0.0768	0.0768	
					PM < 10 micron	0.0175	0.0768	0.0768	
					Polycyclic organic matter	1.99e-07	8.73e-07	8.73e-07	
					Selenium compounds	5.54e-08	2.42e-07	2.42e-07	
					Sulfur Dioxide	0.00138	0.00606	0.00606	
					Toluene	7.84e-06	3.44e-05	3.44e-05	
					Volatile Organic Compounds	0.0127	0.0556	0.0556	
		EQUI 106	Null	QPP Animal Welfare & Handling -MAU-2	1,4-Dichlorobenzene (para-)	2.77e-06	1.21e-05	1.21e-05	
					Arsenic compounds	4.61e-07	2.02e-06	2.02e-06	
					Benzene	4.84e-06	2.12e-05	2.12e-05	
					Beryllium Compounds	2.77e-08	1.21e-07	1.21e-07	
					Cadmium compounds	2.54e-06	1.11e-05	1.11e-05	
					Carbon Dioxide	275	1,205	1,205	
					Carbon Dioxide Equivalent	275	1,206	1,206	
					Carbon Monoxide	0.19	0.85	0.85	
					Chromium compounds	1.94e-07	8.5e-07	1.41e-05	
					Cobalt compounds	3.23e-06	1.41e-05	8.49e-07	
					Formaldehyde	0.000173	0.000758	0.000758	
					Hexane	0.00415	0.0182	0.0182	
					Lead Compounds	1.15e-06	5.05e-06	5.05e-06	
					Manganese compounds	8.77e-07	3.84e-06	3.84e-06	
					Mercury Compounds	6e-07	2.63e-06	2.63e-06	
					Methane	0.00519	0.0227	0.0227	
					Naphthalene	1.41e-06	6.16e-06	6.16e-06	
					Nickel compounds	4.84e-06	2.12e-05	2.12e-05	
					Nitrogen Oxides	0.231	1.01	1.01	
					Nitrous Oxide	0.000519	0.00227	0.00227	
					Particulate Matter	0.0175	0.0768	0.0768	
					PM < 2.5 micron	0.0175	0.0768	0.0768	
					PM < 10 micron	0.0175	0.0768	0.0768	
					Polycyclic organic matter	1.99e-07	8.73e-07	8.73e-07	
					Selenium compounds	5.54e-08	2.42e-07	2.42e-07	
					Sulfur Dioxide	0.00138	0.00606	0.00606	
					Toluene	7.84e-06	3.44e-05	3.44e-05	
					Volatile Organic Compounds	0.0127	0.0556	0.0556	
		EQUI 107	Null	Dehair MAU-KC146-1	1,4-Dichlorobenzene (para-)	4.71e-06	2.06e-05	2.06e-05	
					Arsenic compounds	7.84e-07	3.44e-06	3.44e-06	
					Benzene	8.24e-06	3.61e-05	3.61e-05	
					Beryllium Compounds	4.71e-08	2.06e-07	2.06e-07	
					Cadmium compounds	4.31e-06	1.89e-05	1.89e-05	
					Carbon Dioxide	468	2,048	2,048	
					Carbon Dioxide Equivalent	468	2,050	2,050	
					Carbon Monoxide	0.329	1.44	1.44	
					Chromium compounds	5.49e-06	2.4e-05	2.4e-05	
					Cobalt compounds	3.29e-07	1.44e-06	1.44e-06	
					Formaldehyde	0.000294	0.00129	0.00129	
					Hexane	0.00706	0.0309	0.0309	
					Lead Compounds	1.96e-06	8.59e-06	8.59e-06	
					Manganese compounds	1.49e-06	6.53e-06	6.53e-06	
					Mercury Compounds	1.02e-06	4.47e-06	4.47e-06	
					Methane	0.00882	0.0386	0.0386	
					Naphthalene	2.39e-06	1.05e-05	1.05e-05	
					Nickel compounds	8.24e-06	3.61e-05	3.61e-05	
					Nitrogen Oxides	0.392	1.72	1.72	
					Nitrous Oxide	0.000882	0.00386	0.00386	
					Particulate Matter	0.0298	0.131	0.131	
					PM < 2.5 micron	0.0298	0.131	0.131	
					PM < 10 micron	0.0298	0.131	0.131	
					Polycyclic organic matter	3.39e-07	1.48e-06	1.48e-06	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Dehair MAU-KC146-1	Selenium compounds	9.41e-08	4.12e-07	4.12e-07	
					Sulfur Dioxide	0.00235	0.0103	0.0103	
					Toluene	1.33e-05	5.84e-05	5.84e-05	
					Volatile Organic Compounds	0.0216	0.0945	0.0945	
		EQUI 108	Null	Machinery RM MAU-3	1,4-Dichlorobenzene (para-)	3.6e-06	1.58e-05	1.58e-05	
					Arsenic compounds	6.01e-07	2.63e-06	2.63e-06	
					Benzene	6.31e-06	2.76e-05	2.76e-05	
					Beryllium Compounds	3.6e-08	1.58e-07	1.58e-07	
					Cadmium compounds	3.3e-06	1.45e-05	1.45e-05	
					Carbon Dioxide	358	1,569	1,569	
					Carbon Dioxide Equivalent	359	1,570	1,570	
					Carbon Monoxide	0.25	1.11	1.11	
					Chromium compounds	4.21e-06	1.84e-05	1.84e-05	
					Cobalt compounds	2.52e-07	1.11e-06	1.11e-06	
					Formaldehyde	0.000225	0.000987	0.000987	
					Hexane	0.00541	0.0237	0.0237	
					Lead Compounds	1.5e-06	6.58e-06	6.58e-06	
					Manganese compounds	1.14e-06	5e-06	5e-06	
					Mercury Compounds	7.81e-07	3.42e-06	3.42e-06	
					Methane	0.00675	0.0296	0.0296	
					Naphthalene	1.83e-06	8.03e-06	8.03e-06	
					Nickel compounds	6.31e-06	2.76e-05	2.76e-05	
					Nitrogen Oxides	0.3	1.32	1.32	
					Nitrous Oxide	0.000675	0.00296	0.00296	
					Particulate Matter	0.0228	0.1	0.1	
					PM < 2.5 micron	0.0228	0.1	0.1	
					PM < 10 micron	0.0228	0.1	0.1	
					Polycyclic organic matter	2.6e-07	1.14e-06	1.14e-06	
					Selenium compounds	7.21e-08	3.16e-07	3.16e-07	
					Sulfur Dioxide	0.0018	0.00789	0.00789	
					Toluene	1.02e-05	4.47e-05	4.47e-05	
					Volatile Organic Compounds	0.0165	0.0724	0.0724	
		EQUI 109	Null	Machinery RM MAU-5	1,4-Dichlorobenzene (para-)	3.6e-06	1.58e-05	1.58e-05	
					Arsenic compounds	6.01e-07	2.63e-06	2.63e-06	
					Benzene	6.31e-06	2.76e-05	2.76e-05	
					Beryllium Compounds	3.6e-08	1.58e-07	1.58e-07	
					Cadmium compounds	3.3e-06	1.45e-05	1.45e-05	
					Carbon Dioxide	358	1,569	1,569	
					Carbon Dioxide Equivalent	359	1,570	1,570	
					Carbon Monoxide	0.252	1.11	1.11	
					Chromium compounds	4.21e-06	1.84e-05	1.84e-05	
					Cobalt compounds	2.52e-07	1.11e-06	1.11e-06	
					Formaldehyde	0.000225	0.000987	0.000987	
					Hexane	0.00541	0.0237	0.0237	
					Lead Compounds	1.5e-06	6.58e-06	6.58e-06	
					Manganese compounds	1.14e-06	5e-06	5e-06	
					Mercury Compounds	7.81e-07	3.42e-06	3.42e-06	
					Methane	0.00675	0.0296	0.0296	
					Naphthalene	1.83e-06	8.03e-06	8.03e-06	
					Nickel compounds	6.31e-06	2.76e-05	2.76e-05	
					Nitrogen Oxides	0.3	1.32	1.32	
					Nitrous Oxide	0.000675	0.00296	0.00296	
					Particulate Matter	0.0228	0.1	0.1	
					PM < 2.5 micron	0.0228	0.1	0.1	
					PM < 10 micron	0.0228	0.1	0.1	
					Polycyclic organic matter	2.6e-07	1.14e-06	1.14e-06	
					Selenium compounds	7.21e-08	3.16e-07	3.16e-07	
					Sulfur Dioxide	0.0018	0.00789	0.00789	
					Toluene	1.02e-05	4.47e-05	4.47e-05	
					Volatile Organic Compounds	0.0165	0.0724	0.0724	
		EQUI 110	Null	Pretreatment Space Heater #3	1,4-Dichlorobenzene (para-)	2.8e-06	1.23e-05	1.23e-05	
					Arsenic compounds	4.67e-07	2.04e-06	2.04e-06	
					Benzene	4.9e-06	2.15e-05	2.15e-05	
					Beryllium Compounds	2.8e-08	1.23e-07	1.23e-07	
					Cadmium compounds	2.57e-06	1.12e-05	1.12e-05	
					Carbon Dioxide	278	1,219	1,219	
					Carbon Dioxide Equivalent	279	1,220	1,220	
					Carbon Monoxide	0.196	0.859	0.859	
					Chromium compounds	3.27e-06	1.43e-05	1.43e-05	
					Cobalt compounds	1.96e-07	8.59e-07	8.59e-07	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Pretreatment Space Heater #3	Formaldehyde	0.000175	0.000767	0.000767	
					Hexane	0.0042	0.0184	0.0184	
					Lead Compounds	1.17e-06	5.11e-06	5.11e-06	
					Manganese compounds	8.87e-07	3.89e-06	3.89e-06	
					Mercury Compounds	6.07e-07	2.66e-06	2.66e-06	
					Methane	0.00525	0.023	0.023	
					Naphthalene	1.42e-06	6.24e-06	6.24e-06	
					Nickel compounds	4.9e-06	2.15e-05	2.15e-05	
					Nitrogen Oxides	0.233	1.02	1.02	
					Nitrous Oxide	0.000525	0.0023	0.0023	
					Particulate Matter	0.0177	0.0777	0.0777	
					PM < 2.5 micron	0.0177	0.0777	0.0777	
					PM < 10 micron	0.0177	0.0777	0.0777	
					Polycyclic organic matter	2.02e-07	8.83e-07	8.83e-07	
					Selenium compounds	5.6e-08	2.45e-07	2.45e-07	
					Sulfur Dioxide	0.0014	0.00613	0.00613	
					Toluene	7.94e-06	3.48e-05	3.48e-05	
					Volatile Organic Compounds	0.0128	0.0562	0.0562	
	Other Emission Unit	EQUI 17	EU089	Crax Grinding/ Truck Loadout Room Air	Particulate Matter	2.01	979	8.81	
					PM < 2.5 micron	2.01	344	8.81	
					PM < 10 micron	2.01	8.81	8.81	
					Volatile Organic Compounds	2.01	8.81	8.81	
		EQUI 68	EU031	Natural Smoke Generator 1	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	
					Carbon Monoxide	1.62	7.1	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0154	0.0675	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.021	0.092	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0675	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
		EQUI 69	EU032	Natural Smoke Generator 2	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	
					Carbon Monoxide	1.62	7.1	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0154	0.0675	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.021	0.092	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0675	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
	EQUI 71	EU088	Refined Products Machinery		Particulate Matter	2.16	2,769	9.47	
					PM < 2.5 micron	15.5	6,974	67.8	
					PM < 10 micron	15.6	7,025	68.3	
					Volatile Organic Compounds	0.89	129	3.88	
	EQUI 72	EU091	Refined Products Room Air		Particulate Matter	8.38	245	36.7	
					PM < 2.5 micron	8.38	36.7	36.7	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 Emission Unit	EQUI 72	EU091	Refined Products Room Air	PM < 10 micron	8.38	229	36.7	
					Volatile Organic Compounds	8.38	36.7	36.7	
		EQUI 76	EU095	Natural Smoke Generator 3	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	
					Carbon Monoxide	1.89	8.28	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0154	0.0675	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.021	0.092	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0675	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
		EQUI 77	EU096	Natural Smoke Generator 4	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	
					Carbon Monoxide	1.89	8.28	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0154	0.0675	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.021	0.092	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0675	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
		EQUI 78	EU097	Natural Smoke Generator 5	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	
					Carbon Monoxide	1.89	8.28	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0154	0.0675	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.021	0.092	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0675	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
		EQUI 79	EU098	Natural Smoke Generator 6	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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 Emission Unit	EQUI 79	EU098	Natural Smoke Generator 6	Carbon Monoxide	1.62	7.1	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0154	0.0675	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.021	0.092	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0675	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
		EQUI 80	EU099	Natural Smoke Generator 7	Acetaldehyde	0.039	0.171	0	
					Benzene	0.0291	0.127	0	
					Cadmium compounds	3.3e-07	1.45e-06	0	
					Carbon Dioxide	31	136	0	
					Carbon Dioxide Equivalent	31.4	138	0	
					Carbon Monoxide	1.62	7.1	0	
					Chromium compounds	1.5e-08	6.57e-08	0	
					Formaldehyde	0.0154	0.0675	0	
					Manganese compounds	2.55e-06	1.12e-05	0	
					Methane	0.00238	0.0104	0	
					Nickel compounds	2.1e-07	9.2e-07	0	
					Nitrogen Oxides	0.021	0.092	0	
					Nitrous Oxide	0.00119	0.00521	0	
					Particulate Matter	0.795	3.48	0	
					Phenol	0.0153	0.0675	0	
					PM < 2.5 micron	0.795	3.48	0	
					PM < 10 micron	0.795	3.48	0	
					Polycyclic organic matter	0.011	0.048	0	
					Toluene	0.011	0.048	0	
					Volatile Organic Compounds	0.66	2.89	0	
					Xylene (o-)	0.00303	0.0133	0	
		EQUI 101	Null	Hog Hair Hydrolyzer	Particulate Matter	4.43	19.4	1.11	
					PM < 2.5 micron	29.7	130	7.92	
					PM < 10 micron	29.9	131	7.97	
					Volatile Organic Compounds	3.18	13.9	0.417	
		EQUI 111	EU029	Bacon Bits Precooked Line	Particulate Matter	8.01	35.1	35.1	
					PM < 2.5 micron	8.01	35.1	35.1	
					PM < 10 micron	8.01	35.1	35.1	
					Volatile Organic Compounds	0.34	1.5	1.5	
Reciprocating IC Engine	Reciprocating IC Engine	EQUI 81	EU078	natural gas-fired emergency generator	1,4-Dichlorobenzene (para-)	1.51e-06	3.78e-07	3.78e-07	
					Arsenic compounds	2.52e-07	6.3e-08	6.3e-08	
					Benzene	2.65e-06	6.62e-07	6.62e-07	
					Beryllium Compounds	1.51e-08	3.78e-09	3.78e-09	
					Cadmium compounds	1.39e-06	3.47e-07	3.47e-07	
					Carbon Dioxide	150	658	658	
					Carbon Dioxide Equivalent	150	659	659	
					Carbon Monoxide	4.78	1.2	1.2	
					Chromium compounds	1.76e-06	4.41e-07	4.41e-07	
					Cobalt compounds	1.06e-07	2.65e-08	2.65e-08	
					Formaldehyde	9.45e-05	2.36e-05	2.36e-05	
					Hexane	0.00227	0.000567	0.000567	
					Manganese compounds	4.79e-07	1.2e-07	1.2e-07	
					Mercury Compounds	3.28e-07	8.19e-08	8.19e-08	
					Methane	0.00283	0.0124	0.0124	
					Naphthalene	7.69e-07	1.92e-07	1.92e-07	
					Nickel compounds	2.65e-06	6.62e-07	6.62e-07	
					Nitrogen Oxides	2.92	0.73	0.73	
					Nitrous Oxide	0.000283	0.00124	0.00124	
					Particulate Matter	0.0249	0.00624	0.00624	
					PM < 2.5 micron	0.0249	0.00624	0.00624	
					PM < 10 micron	0.0249	0.00624	0.00624	
					Polycyclic organic matter	1.09e-07	2.72e-08	2.72e-08	
					Selenium compounds	3.02e-08	7.56e-09	7.56e-09	
					Sulfur Dioxide	0.000756	0.000189	0.000189	

PTE by SI

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	Reciprocating IC Engine	EQUI 81	EU078	gas-fired emergency generator	Toluene	4.28e-06	1.07e-06	1.07e-06	
					Volatile Organic Compounds	0.038	0.00951	0.00951	
Treatment	131-Thermal Oxidizer	TREA 23	CE026 / EU087	Regenerative Thermal Oxidizer	1,4-Dichlorobenzene (para-)	9.41e-06	4.12e-05	4.12e-05	
					Arsenic compounds	1.57e-06	6.87e-06	6.87e-06	
					Benzene	1.65e-05	7.21e-05	7.21e-05	
					Beryllium Compounds	9.41e-08	4.12e-07	4.12e-07	
					Cadmium compounds	8.63e-06	3.78e-05	3.78e-06	
					Carbon Dioxide	935	4,096	4,096	
					Carbon Dioxide Equivalent	936	4,096	4,096	
					Carbon Monoxide	0.659	2.89	2.89	
					Chromium compounds	1.1e-05	4.81e-05	4.81e-05	
					Formaldehyde	0.000588	0.00258	0.00258	
					Hexane	0.0141	0.0618	0.0618	
					Lead Compounds	3.92e-06	1.72e-05	1.72e-05	
					Manganese compounds	2.98e-06	1.31e-05	1.31e-05	
					Mercury Compounds	2.04e-06	8.93e-06	8.93e-07	
					Methane	0.0176	0.0772	0.0772	
					Naphthalene	4.78e-06	2.1e-05	2.1e-05	
					Nickel compounds	1.65e-05	7.21e-05	7.21e-05	
					Nitrogen Oxides	0.784	3.44	3.44	
					Nitrous Oxide	0.00176	0.00772	0.00772	
					Particulate Matter	0.0596	0.261	0.261	
					PM < 2.5 micron	0.0596	0.261	0.261	
					PM < 10 micron	0.0596	0.261	0.261	
					Polycyclic organic matter	6.78e-07	2.97e-06	2.97e-06	
					Selenium compounds	1.88e-07	8.24e-07	8.24e-07	
					Sulfur Dioxide	0.00471	0.0206	0.0206	
					Toluene	2.67e-05	0.000117	0.000117	
					Volatile Organic Compounds	0.0431	0.189	0.189	

Relationships

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

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	Boiler	EQUI 3	EU044	Boiler #6	sends to	STRU 63	100	Stack/Vent	SV038	11/1/1999	Null	
		EQUI 4	EU001	Boiler #1	sends to	STRU 47	0	Stack/Vent	SV001	1/1/1992	Null	
						STRU 83	100	Stack/Vent	Null	3/5/2018	Null	
		EQUI 5	EU002	Boiler #2	sends to	STRU 47	0	Stack/Vent	SV001	1/1/1992	Null	
						STRU 83	100	Stack/Vent	Null	3/5/2018	Null	
		EQUI 6	EU003	Boiler #3	sends to	STRU 47	0	Stack/Vent	SV001	1/1/1992	Null	
						STRU 83	100	Stack/Vent	Null	3/5/2018	Null	
		EQUI 7	EU004	Boiler #4	sends to	STRU 47	0	Stack/Vent	SV001	1/1/1992	Null	
						STRU 83	100	Stack/Vent	Null	3/5/2018	Null	
		EQUI 8	EU005	Boiler #5	sends to	STRU 47	0	Stack/Vent	SV001	1/1/1992	Null	
						STRU 83	100	Stack/Vent	Null	3/5/2018	Null	
		EQUI 9	EU045	Boiler #7	sends to	STRU 64	100	Stack/Vent	SV039	11/1/1999	Null	
	Data Acquisition System	EQUI 37	DA001	Regenerative Thermal Oxidizer DAS	receives from	EQUI 1	Null	Parametric Monitor	MR001	8/1/2011	Null	
	Dryer/Oven, direct fired	EQUI 14	EU036	Scott Bone Dryer	is controlled by	TREA 23	0	131-Thermal Oxidizer	CE026 / EU087	3/1/2016	Null	
						TREA 33	0	050-Packed-Gas Absorption Column	CE044	3/1/2016	Null	
						TREA 46	100	053-Venturi Scrubber	Null	11/1/2018	Null	
					sends to	STRU 23	100	Stack/Vent	SV058	8/16/2011	Null	
		EQUI 56	EU006	Smoked Meat Oven #6 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 42	100	099-Other	CE034	1/27/2016	Null	
					sends to	STRU 11	100	Stack/Vent	SV003	1/1/1982	Null	
		EQUI 57	EU007	Smoked Meat Oven #7 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 43	100	099-Other	CE035	1/27/2016	Null	
					sends to	STRU 12	100	Stack/Vent	SV005	1/1/1982	Null	
		EQUI 58	EU008	Smoked Meat Oven #8 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 44	100	099-Other	CE036	1/27/2016	Null	
					sends to	STRU 13	100	Stack/Vent	SV007	1/1/1982	Null	
		EQUI 59	EU009	Smoked Meat Oven #9 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 45	100	099-Other	CE037	1/27/2016	Null	
					sends to	STRU 38	100	Stack/Vent	SV009	1/1/1982	Null	
		EQUI 60	EU010	Smoked Meat Oven #10 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 40	100	099-Other	CE032	1/1/1982	Null	
					sends to	STRU 39	100	Stack/Vent	SV011	1/1/1982	Null	
		EQUI 61	EU011	Smoked Meat Oven #11 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 41	100	099-Other	CE033	1/27/2016	Null	
					sends to	STRU 1	100	Stack/Vent	SV012	1/1/1982	Null	
		EQUI 62	EU012	Smoked Meat Oven #12 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 39	100	099-Other	CE043	1/27/2016	Null	
					sends to	STRU 40	100	Stack/Vent	SV013	1/1/1994	Null	
		EQUI 63	EU013	Smoked Meat Oven #1 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 34	100	099-Other	CE038	1/27/2016	Null	
					sends to	STRU 48	100	Stack/Vent	SV014	1/1/1982	Null	
		EQUI 64	EU014	Smoked Meat Oven #2 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 35	100	099-Other	CE039	1/27/2016	Null	
					sends to	STRU 49	100	Stack/Vent	SV015	1/1/1982	Null	
		EQUI 65	EU015	Smoked Meat Oven #3 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 36	100	099-Other	CE040	1/27/2016	Null	
					sends to	STRU 50	100	Stack/Vent	SV016	1/1/1982	Null	
		EQUI 66	EU016	Smoked Meat Oven #4 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 37	100	099-Other	CE041	1/27/2016	Null	
					sends to	STRU 51	100	Stack/Vent	SV017	1/1/1982	Null	

Relationships

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

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	Dryer/Oven, direct fired	EQUI 67	EU017	Smoked Meat Oven #5 with Recirculated Natural Wood and Liquid Smoke	is controlled by	TREA 38	100	099-Other	CE042	1/27/2016	Null	
					sends to	STRU 52	100	Stack/Vent	SV018	1/1/1982	Null	
	Dryer/Oven, indirect fired	EQUI 113	Null	Dupps Blood Dryer	is controlled by	TREA 23	0	131-Thermal Oxidizer	CE026 / EU087	11/1/2018	Null	
						TREA 33	0	050-Packed-Gas Absorption Column	CE044	11/1/2018	Null	
						TREA 46	100	053-Venturi Scrubber	Null	11/1/2018	Null	
					sends to	STRU 23	100	Stack/Vent	SV058	3/1/2016	Null	
		EQUI 117	Null	AFO Fire Braising Unit	sends to	STRU 91	50	Stack/Vent	Null	12/31/2025	Null	
						STRU 92	50	Stack/Vent	Null	12/31/2025	Null	
		EQUI 118	Null	Smoke Generator	is controlled in parallel by	TREA 39	50	099-Other	CE043	2/15/2020	Null	
						TREA 40	50	099-Other	CE032	2/15/2020	Null	
					sends to	STRU 39	50	Stack/Vent	SV011	2/15/2020	Null	
						STRU 40	50	Stack/Vent	SV013	2/15/2020	Null	
		EQUI 119	Null	Smoke Generator	is controlled in parallel by	TREA 42	50	099-Other	CE034	12/15/2020	Null	
						TREA 44	50	099-Other	CE036	12/15/2020	Null	
					sends to	STRU 11	50	Stack/Vent	SV003	12/15/2020	Null	
						STRU 13	50	Stack/Vent	SV007	12/15/2020	Null	
		EQUI 120	Null	Smoke Generator	is controlled in parallel by	TREA 34	34	099-Other	CE038	12/15/2020	Null	
						TREA 36	33	099-Other	CE040	12/15/2020	Null	
						TREA 38	33	099-Other	CE042	12/15/2020	Null	
					sends to	STRU 48	34	Stack/Vent	SV014	12/15/2020	Null	
						STRU 50	33	Stack/Vent	SV016	12/15/2020	Null	
						STRU 52	33	Stack/Vent	SV018	12/15/2020	Null	
	Incinerator	EQUI 123	Null	Hog Hair Singer #2	sends to	STRU 44	100	Stack/Vent	SV047	9/1/1993	Null	
	Loading-Unloading Equipment	EQUI 18	EU090	Crax Storage Room Air	is controlled by	TREA 25	100	050-Packed-Gas Absorption Column	CE030	7/9/2013	Null	
					sends to	STRU 2	100	Stack/Vent	SV059	7/9/2013	Null	
	Other Combustion	EQUI 73	EU092	Refined Products MAU 1	sends to	STRU 5	100	Stack/Vent	SV062	7/9/2013	Null	
		EQUI 74	EU093	Refined Products MAU 2	sends to	STRU 6	100	Stack/Vent	SV063	7/9/2013	Null	
		EQUI 75	EU094	Refined Products MAU 3	sends to	STRU 7	100	Stack/Vent	SV064	7/9/2013	Null	
		EQUI 90	Null	KC13 Unit	sends to	STRU 68	100	Stack/Vent	Null	9/22/2008	Null	
		EQUI 91	Null	MP4	sends to	STRU 69	100	Stack/Vent	Null	1/13/2009	Null	
		EQUI 92	Null	Dehair MAU-KC146-2	sends to	STRU 70	100	Stack/Vent	Null	5/17/2017	Null	
		EQUI 93	Null	MAU #4	sends to	STRU 71	100	Stack/Vent	Null	5/18/2009	Null	
		EQUI 94	Null	Rendering Air MAH #2	sends to	STRU 20	100	Stack/Vent	SV037	5/1/2003	Null	
		EQUI 95	Null	Old Boiler Room MAU	sends to	STRU 72	100	Stack/Vent	Null	12/1/2000	Null	
		EQUI 96	Null	Hog Hair Singer #1	sends to	STRU 56	100	Stack/Vent	SV029	7/15/2011	Null	
		EQUI 98	Null	Pretreatment Space Heater #1	sends to	STRU 73	100	Stack/Vent	Null	11/1/2000	Null	
		EQUI 99	Null	KC-9 MAH	sends to	STRU 17	100	Stack/Vent	SV034	5/18/2006	Null	
		EQUI 100	Null	Rendering MAU	sends to	STRU 19	100	Stack/Vent	SV036	4/10/2013	Null	
		EQUI 102	Null	Hog Cut Space Heater #1	sends to	STRU 74	100	Stack/Vent	Null	5/1/1991	Null	

Relationships

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

SI Category Equipment	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	
	Other Combustion	EQUI 103	Null	Hog Cut Space Heater #2	sends to	STRU 75	100	Stack/Vent	Null	5/1/1991	Null	
		EQUI 104	Null	Dry Rm #5 Desiccant Unit Conditioner #5-1	sends to	STRU 76	100	Stack/Vent	Null	10/1/2017	Null	
		EQUI 105	Null	QPP Animal Welfare & Handling -MAU-1	sends to	STRU 77	100	Stack/Vent	Null	10/1/2017	Null	
		EQUI 106	Null	QPP Animal Welfare & Handling -MAU-2	sends to	STRU 78	100	Stack/Vent	Null	10/1/2017	Null	
		EQUI 107	Null	Dehair MAU-KC146-1	sends to	STRU 79	100	Stack/Vent	Null	6/1/2017	Null	
		EQUI 108	Null	Machinery RM MAU-3	sends to	STRU 80	100	Stack/Vent	Null	6/1/2013	Null	
		EQUI 109	Null	Machinery RM MAU-5	sends to	STRU 81	100	Stack/Vent	Null	6/1/2013	Null	
		EQUI 110	Null	Pretreatment Space Heater #3	sends to	STRU 82	100	Stack/Vent	Null	11/1/1996	Null	
	Other Emission Unit	EQUI 17	EU089	Crax Grinding/Truck Loadout Room Air	is controlled by	TREA 24	0	053-Venturi Scrubber	CE029	7/9/2013	Null	
						TREA 25	0	050-Packed-Gas Absorption Column	CE030	7/9/2013	Null	
					sends to	STRU 2	100	Stack/Vent	SV059	7/9/2013	Null	
		EQUI 68	EU031	Natural Smoke Generator 1	is controlled in parallel by	TREA 42	50	099-Other	CE034	1/27/2016	Null	
						TREA 43	50	099-Other	CE035	1/27/2016	Null	
					sends to	STRU 11	50	Stack/Vent	SV003	1/1/1982	Null	
						STRU 12	50	Stack/Vent	SV005	1/1/1982	Null	
		EQUI 69	EU032	Natural Smoke Generator 2	is controlled in parallel by	TREA 43	33.4	099-Other	CE035	1/27/2016	Null	
						TREA 44	33.3	099-Other	CE036	1/27/2016	Null	
						TREA 45	33.3	099-Other	CE037	1/27/2016	Null	
					sends to	STRU 12	33.4	Stack/Vent	SV005	8/5/1999	Null	
						STRU 13	33.3	Stack/Vent	SV007	8/5/1999	Null	
						STRU 38	33.3	Stack/Vent	SV009	8/5/1999	Null	
		EQUI 71	EU088	Refined Products Machinery	is controlled by	TREA 23	0	131-Thermal Oxidizer	CE026 / EU087	3/1/2016	Null	
						TREA 31	100	053-Venturi Scrubber	CE027	3/1/2016	Null	
						TREA 33	Null	050-Packed-Gas Absorption Column	CE044	3/1/2016	Null	
					sends to	STRU 23	100	Stack/Vent	SV058	7/9/2013	Null	
		EQUI 72	EU091	Refined Products Room Air	is controlled by	TREA 26	100	050-Packed-Gas Absorption Column	CE031	7/9/2013	Null	
					sends to	STRU 3	50	Stack/Vent	SV060	7/9/2013	Null	
						STRU 4	50	Stack/Vent	SV061	7/9/2013	Null	
		EQUI 76	EU095	Natural Smoke Generator 3	is controlled in parallel by	TREA 40	33.4	099-Other	CE032	6/9/2025	Null	
						TREA 41	33.3	099-Other	CE033	6/9/2025	Null	
						TREA 45	33.3	099-Other	CE037	6/9/2025	Null	
					sends to	STRU 1	33.4	Stack/Vent	SV012	6/9/2025	Null	
						STRU 38	33.3	Stack/Vent	SV009	6/9/2025	Null	
						STRU 39	33.3	Stack/Vent	SV011	6/9/2025	Null	
		EQUI 77	EU096	Natural Smoke Generator 4	is controlled in parallel by	TREA 37	50	099-Other	CE041	1/27/2016	Null	
						TREA 38	50	099-Other	CE042	1/27/2016	Null	
					sends to	STRU 51	50	Stack/Vent	SV017	1/27/2016	Null	
						STRU 52	50	Stack/Vent	SV018	1/27/2016	Null	
		EQUI 78	EU097	Natural Smoke Generator 5	is controlled in parallel by	TREA 35	33.3	099-Other	CE039	6/9/2025	Null	

Relationships

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

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SI Category Equipment	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	
	Other Emission Unit	EQUI 78	EU097	Natural Smoke Generator 5	is controlled in parallel by	TREA 36	33.3	099-Other	CE040	6/9/2025	Null	
						TREA 37	33.4	099-Other	CE041	2/4/2026	Null	
					sends to	STRU 49	33.3	Stack/Vent	SV015	6/9/2025	Null	
						STRU 50	33.3	Stack/Vent	SV016	6/9/2025	Null	
						STRU 51	33.4	Stack/Vent	SV017	2/4/2026	Null	
		EQUI 79	EU098	Natural Smoke Generator 6	is controlled in parallel by	TREA 34	50	099-Other	CE038	1/27/2016	Null	
						TREA 35	50	099-Other	CE039	1/27/2016	Null	
					sends to	STRU 48	50	Stack/Vent	SV014	1/27/2016	Null	
						STRU 49	50	Stack/Vent	SV015	2/4/2026	Null	
		EQUI 80	EU099	Natural Smoke Generator 7	is controlled in parallel by	TREA 39	50	099-Other	CE043	1/27/2016	Null	
						TREA 41	50	099-Other	CE033	1/27/2016	Null	
					sends to	STRU 1	50	Stack/Vent	SV012	1/27/2016	Null	
						STRU 40	50	Stack/Vent	SV013	1/27/2016	Null	
		EQUI 101	Null	Hog Hair Hydrolyzer	is controlled by	TREA 23	0	131-Thermal Oxidizer	CE026 / EU087	8/12/2005	Null	
						TREA 33	100	050-Packed-Gas Absorption Column	CE044	4/10/2017	Null	
					sends to	STRU 23	100	Stack/Vent	SV058	8/12/2005	Null	
		EQUI 111	EU029	Bacon Bits Precooked Line	sends to	STRU 10	100	Stack/Vent	SV050	11/2/2005	Null	
	Reciprocating IC Engine	EQUI 81	EU078	natural gas-fired emergency generator	sends to	STRU 16	100	Stack/Vent	SV021	10/13/2017	Null	
Treatment	053-Venturi Scrubber	TREA 24	CE029	Crax Grinding/Truck Loadout Room Air Venturi Scrubber	is controlled in series by	TREA 25	100	050-Packed-Gas Absorption Column	CE030	7/9/2013	Null	
		TREA 31	CE027	Refined Products Machinery Venturi Scrubber	is controlled in series by	TREA 23	100	131-Thermal Oxidizer	CE026 / EU087	3/1/2016	Null	
						TREA 33	100	050-Packed-Gas Absorption Column	CE044	3/1/2016	Null	
		TREA 46	Null	New Dupps Blood Dryer Venturi Scrubber	is controlled in series by	TREA 23	100	131-Thermal Oxidizer	CE026 / EU087	11/1/2018	Null	
						TREA 33	100	050-Packed-Gas Absorption Column	CE044	11/1/2018	Null	
	131-Thermal Oxidizer	TREA 23	CE026 / EU087	Regenerative Thermal Oxidizer	is monitored by	EQUI 1	Null	Parametric Monitor	MR001	8/1/2011	Null	
					sends to	EQUI 37	Null	Data Acquisition System	DA001	8/1/2011	Null	

PMs

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

Subject Item ID	Delta Designation	Description	Manufacturer	Model	Serial Number	Parameter Monitored	Bypass Capability? (parametric)	Install Date (parametric)	
EQUI 1	MR001	TREA 23 Combustion Chamber Temperature	Null	Null	Null	Temperature	Null	8/1/2011	

DAS

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

Subject Item ID	Delta Designation	Description	Manufacturer	Model	Serial Number	Primary or Backup? (DASs)	Install Date (DASs)	
EQUI 37	DA001	Regenerative Thermal Oxidizer DAS	Allen Bradly	custom	custom	Primary	8/1/2011	

Building

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

Subject Item ID	Delta Designation	Description	Height	Units (height)	Length	Units (length)	Width	Units (width)	
STRU 84	Null	Building A	85.17	feet	1,700.3	feet	1,060.6	feet	
STRU 85	Null	Building B	37.67	feet	228.7	feet	81.2	feet	
STRU 86	Null	Building C	19	feet	52.6	feet	30.25	feet	
STRU 87	Null	Building D	30.83	feet	216.4	feet	122.2	feet	
STRU 88	Null	Building E	18.08	feet	49.3	feet	28.3	feet	

Stack/Vents

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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	SV012	Natural and Liquid Smoke Meat Oven #11 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 2	SV059	Crax Storage/Grinding/Loadout ...	56.8	6	Null	Null	32,000	80	Manufacturer	Upwards with no cap on stack/vent	
STRU 3	SV060	Refined Products Room Air Stack #1	56	6	Null	Null	106,819	80	Manufacturer	Upwards with no cap on stack/vent	
STRU 4	SV061	Refined Products Room Air Stack #2	56	6	Null	Null	106,819	80	Manufacturer	Upwards with no cap on stack/vent	
STRU 5	SV062	Refined Products MAU 1 Stack	36	1.25	Null	Null	48,000	175	Manufacturer	Upwards with a cap on stack/vent	
STRU 6	SV063	Refined Products MAU 2 Stack	36	1.25	Null	Null	48,000	175	Manufacturer	Upwards with a cap on stack/vent	
STRU 7	SV064	Refined Products MAU 3 Stack	36	1.25	Null	Null	24,000	175	Manufacturer	Upwards with a cap on stack/vent	
STRU 10	SV050	Bacon Bits Line (EU 029/CE 025)	60	1.5	Null	Null	8,000	85	Estimate	Upwards with a cap on stack/vent	
STRU 11	SV003	Natural and Liquid Smoke Meat Oven #6 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 12	SV005	Natural and Liquid Smoke Meat Oven #7 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 13	SV007	Natural and Liquid Smoke Meat Oven #8 S	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 14	SV019	Precooked Bacon Stack N/S Stack	52	1.5	Null	Null	3,000	120	Estimate	Upwards with a cap on stack/vent	
STRU 15	SV020	Precooked Bacon Stack E/W Stack	52	1.5	Null	Null	3,000	120	Estimate	Upwards with a cap on stack/vent	
STRU 16	SV021	Standby Generator Stack	50	0.38	Null	Null	255	400	Estimate	Upwards with a cap on stack/vent	
STRU 17	SV034	KC-9 Makeup Air Heater Stack	40.2	4.51	Null	Null	30,000	80	Estimate	Upwards with no cap on stack/vent	
STRU 19	SV036	Rendering Makeup Air Heater Stack 1	71	2.83	Null	Null	30,000	80	Estimate	Upwards with a cap on stack/vent	
STRU 20	SV037	Rendering Makeup Air Heater Stack 2	71	2.83	Null	Null	20,000	80	Estimate	Upwards with a cap on stack/vent	
STRU 21	SV042	RWO MAU (0.243 MMBtu/hr) Stack	60	1.25	Null	Null	2,000	170	Estimate	Upwards with a cap on stack/vent	
STRU 23	SV058	Regenerative Thermal Oxidizer Stack	75	4.5	Null	Null	56,000	120	Manufacturer	Upwards with no cap on stack/vent	
STRU 38	SV009	Natural and Liquid Smoke Meat Oven #9 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 39	SV011	Natural and Liquid Smoke Meat Oven #10 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 40	SV013	Natural and Liquid Smoke Meat Oven #12 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 44	SV047	Hog Singer #2 Stack	78.67	2.5	Null	Null	3,500	250	Estimate	Upwards with no cap on stack/vent	
STRU 46	SV049	Dock Area Room Air	30	2.5	Null	Null	40,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 47	SV001	Emergency Boiler Stack (Boilers 1-5)	85	8.75	Null	Null	31,743	450	Estimate	Upwards with a cap on stack/vent	
STRU 48	SV014	Prep Sausage Oven #1 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 49	SV015	Prep Sausage Oven #2 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 50	SV016	Prep Sausage Oven #3 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 51	SV017	Prep Sausage Oven #4 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 52	SV018	Prep Sausage Oven #5 Stack	41	1.5	Null	Null	4,000	130	Estimate	Upwards with a cap on stack/vent	
STRU 56	SV029	Hog Singer #1 Stack	72.7	3	Null	Null	13,500	460	Estimate	Upwards with a cap on stack/vent	
STRU 63	SV038	Boiler #6 Stack	30	2.33	Null	Null	35,000	450	Estimate	Upwards with a cap on stack/vent	
STRU 64	SV039	Boiler #7 Stack	30	2.33	Null	Null	35,000	450	Estimate	Upwards with a cap on stack/vent	
STRU 66	Null	Livestock Boiler #1 Stack	20	0.67	Null	Null	973	280	Estimate	Upwards with no cap on stack/vent	
STRU 67	Null	Livestock Boiler #2 Stack	20	0.67	Null	Null	973	280	Estimate	Upwards with no cap on stack/vent	
STRU 68	Null	KC13 Unit Stack	47.6	3.95	Null	Null	2,000	70	Estimate	Downward	

Stack/Vents

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

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 69	Null	MP4 Stack	29	5.64	Null	Null	20,000	70	Estimate	Downward	
STRU 70	Null	Dehair MAU-KC142-2 Stack	40.2	4.52	Null	Null	30,000	70	Estimate	Downward	
STRU 71	Null	MAU #4 Stack	40.2	4.52	Null	Null	30,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 72	Null	Old Boiler Room MAU Stack	28	6.77	Null	Null	52,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 73	Null	Pretreatment Space Heater #1 Stack	28	4.52	Null	Null	7,500	70	Estimate	Downward	
STRU 74	Null	Hog Cut Space Heater #1 Stack	34	4.12	Null	Null	40,000	70	Estimate	Downward	
STRU 75	Null	Hog Cut Space Heater #2 Stack	34	4.12	Null	Null	40,000	70	Estimate	Downward	
STRU 76	Null	Dry Rm Desiccant Unit Conditioner #5-1 Stack	62	1.59	Null	Null	40,000	150	Estimate	Upwards with no cap on stack/vent	
STRU 77	Null	QPP Animal Welfare & Handling - MAU-1 Stack	36	4	Null	Null	12,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 78	Null	QPP Animal Welfare & Handling - MAU-2 Stack	36	4	Null	Null	12,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 79	Null	Dehair MAU-KC146-1 Stack	40.2	4	Null	Null	30,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 80	Null	Machinery RM MAU-3 Stack	36	4	Null	Null	20,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 81	Null	Machinery RM MAU-5 Stack	36	4	Null	Null	20,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 82	Null	Pretreatment Space Heater #3 Stack	27	4	Null	Null	32,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 83	Null	Boiler 1-5 Economizer Stack	85	2	Null	Null	720	115	Estimate	Upwards with no cap on stack/vent	
STRU 91	Null	AFO Heat Braising Unit Stack 1	40.25	1.83	Null	Null	3,700	250	Manufacturer	Upwards with no cap on stack/vent	
STRU 92	Null	AFO Heat Braising Unit Stack 2	40.25	1.83	Null	Null	3,700	250	Manufacturer	Upwards with no cap on stack/vent	

Scrubbers

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

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	Min Pressure Drop (in. of water column)	Max Pressure Drop (in. of water column)	Min Liquid Flow Rate (gal/min)
050-Packed-Gas Adsorption Column	TREA 25	CE030	Crax Storage Room Air Packed-Gas Adsorption Column	SCP Inc. (2-SV24-PBS-32)	7/9/2013	Particulate Matter	100	85	No	Null	Other	Although the Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected control effici..	2	12	320
						PM < 2.5 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	2	12	320
						PM < 10 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	2	12	320
	TREA 26	CE031	Refined Products Room Air Packed-Gas Adsorption Column	SCP Inc. (RAS-100)	7/9/2013	Particulate Matter	100	85	No	Null	Other	Although the Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected control effici..	2	12	999.9
						PM < 2.5 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	2	12	999.9
						PM < 10 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	2	12	999.9
	TREA 33	CE044	Pre-RTO Packed Bed Adsorption Column	IES (Custom)	3/1/2016	Particulate Matter	100	85	No	Null	Other	Although the Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected control effici..	0.5	10.5	720
						PM < 2.5 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	0.5	10.5	720
						PM < 10 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	0.5	10.5	720
053-Venturi Scrubber	TREA 24	CE029	Crax Grinding/Truck Loadout Room Air Venturi Scrubber	SCP Inc. (2-SV24-PBS-32)	7/9/2013	Particulate Matter	100	94	No	Null	Other	Although the Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected control effici..	4	14	100
						PM < 2.5 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	4	14	100
						PM < 10 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	4	14	100
	TREA 31	CE027	Refined Products Machinery Venturi Scrubber	SCP Inc. (2-SV-PBS-12)	7/9/2013	Particulate Matter	100	94	No	Null	Other	Although the Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected control effici..	4	14	83
						PM < 2.5 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	4	14	83
						PM < 10 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	4	14	83
	TREA 46	Null	New Dupps Blood Dryer Venturi Scrubber	Integrated Environmental Services, Inc. (P-1513)	11/1/2018	Particulate Matter	100	94	No	Null	Other	Although the Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected control effici..	2	8	80
						PM < 2.5 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	2	8	80
						PM < 10 micron	100	84	Yes	Other	Mfr/ Vendor data	Null	2	8	80

Other Controls

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

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
099-Other	TREA 34	CE038	Oven #1 Exhaust Washer	Schroeter (Model #257-1211)	4/30/2012	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
	TREA 35	CE039	Oven #2 Exhaust Washer	Schroeter (Model #257-1211)	4/30/2012	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
	TREA 36	CE040	Oven #3 Exhaust Washer	Schroeter (Model #257-1211)	4/30/2012	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
	TREA 37	CE041	Oven #4 Exhaust Washer	Schroeter (Model #257-1211)	4/30/2012	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
	TREA 38	CE042	Oven #5 Exhaust Washer	Schroeter (Model #257-1211)	4/30/2012	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi

Other Controls

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)

Activity: IND20230001

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
099-Other	TREA 38	CE042	Oven #5 Exhaust Washer	Schroeter (Model #257-1211)	4/30/2012	Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=55 psi
	TREA 39	CE043	Oven #12 Exhaust Washer	IES (Custom)	4/30/2012	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
	TREA 40	CE032	Oven #10 Exhaust Washer	IES (Custom)	4/30/2006	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
	TREA 41	CE033	Oven #11 Exhaust Washer	IES (Custom)	4/30/2006	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
	TREA 42	CE034	Oven #6 Exhaust Washer	IES (Custom)	4/30/2006	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
	TREA 43	CE035	Oven #7 Exhaust Washer	IES (Custom)	4/30/2006	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi

Other Controls

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

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
099-Other	TREA 43	CE035	Oven #7 Exhaust Washer	IES (Custom)	4/30/2006	PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
	TREA 44	CE036	Oven #8 Exhaust Washer	IES (Custom)	4/30/2006	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
	TREA 45	CE037	Oven #9 Exhaust Washer	IES (Custom)	4/30/2006	Particulate Matter	100	94	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 2.5 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						PM < 10 micron	100	84	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	Yes	Water Flow Rate >=3.5 gal/min Water Pressure >=25 psi

Direct Flame Afterburners

AI ID (Name): 3926 (Hormel Foods Corporation - Austin Plant)
Activity: IND20230001

Subject Item Type	Subject Item ID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Efficiency Basis	Other Basis Explanation	TO Burner Capacity (MMBTU/hr)	Inlet Temp/Outlet Temp (°F)	TO Min Combustion Temperature (°F)	TO Residence Time (secs)	
131-Thermal Oxidizer	TREA 23	CE026 / EU087	Regenerative Thermal Oxidizer	Tann Corp/Langbein Engelbracht (TR 5096C)	8/1/2011	Particulate Matter	100	62	Other	Although Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected...	8	112/221	1,400	0.8	
						PM < 2.5 micron	100	62	Other	Although the Permittee has not listed the control equipment rule as a basis, this is still a good estimate f...	8	112/221	1,400	0.8	
						PM < 10 micron	100	62	Other	Although Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected...	8	112/221	1,400	0.8	
						Volatile Organic Compounds	100	97	Other	Although Permittee has not listed the control equipment rule as a basis, this is still a good estimate for expected...	8	112/221	1,400	0.8	

SI Id	Sequence	Requirement
TFAC 2	1240	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendices: Appendix A: Insignificant Activities; Appendix B: 40 CFR Pt. 63, Subp. ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines; Appendix C: 40 CFR Pt. 63 - General Provisions Appendix D: Industrial Hygiene Indoor Air Quality Testing Protocol. [Minn. R. 7007.0800, subp. 2(A) & (B)]
TFAC 2	1780	The Permittee must not have engines that meet subparagraph (1)(iii) under the definition of Nonroad Engine at 40 CFR 1068.30 in one location within the stationary source for more than 12 consecutive months. A location is any single site at a building, structure, facility, or installation. Any engine, or engines, that replaces an engine at a location and that is intended to perform the same or similar function as the engine it replaced will be included in calculating the consecutive time period. [40 CFR 1068.30]
TFAC 2	1790	For a nonroad engine that is excluded from any requirements of 40 CFR Part 1068 because it is a stationary engine, the Permittee may not move it or install it in any mobile equipment, except as allowed by the provisions of 40 CFR Part 1068. The Permittee may not circumvent or attempt to circumvent the residence-time requirements of subparagraph (2)(iii) of the Nonroad Engine definition at 40 CFR 1068.30. [40 CFR 1068.101(b)(3)]
TFAC 2	1800	The Permittee must conduct an inventory of all engines on-site that meet subparagraph (1)(iii) under the definition of Nonroad Engine at 40 CFR 1068.30, once each calendar quarter; inventories must not take place in consecutive months. This applies to nonroad engines that are owned by the Permittee, or rented and operated by the Permittee, or brought onsite and operated by a vendor or contractor. The inventory must include the following: 1) Date that the nonroad engine is inventoried. 2) Identification number. 3) Function of the nonroad engine (e.g. compressor, welder). 4) Location of the engine within the stationary source. 5) Statement that the nonroad engine has not been located in a single location for 12 consecutive months, and movement between locations has not been for purposes of circumvention of residence time requirements of subparagraph (2)(iii) under the definition of Nonroad Engine at 40 CFR 1068.30. [40 CFR 1068.30(nonrd engn)(1)(iii), Minn. R. 7007.0800, subps. 4-5]
TFAC 2	1810	A nonroad engine ceases to be a nonroad engine and becomes a new stationary engine if: 1. At any time, it meets the criteria specified in subparagraph (2)(iii) under the definition of Nonroad Engine in 40 CFR 1068.30. For example, a portable generator engine ceases to be a nonroad engine if it is used or will be used in a single specific location for 12 months or longer. If the Administrator or the Permitting authority determines that an engine will be or has been used in a single specific location for 12 months or longer, it ceased to be a nonroad engine when it was placed in that location. OR 2. It is otherwise regulated by a federal New Source Performance Standard promulgated under section 111 of the Clean Air Act (42 U.S.C. 7411). [40 CFR 1068.31(e)]
TFAC 2	4090	This permit establishes limits on the facility to keep it a minor source under New Source Review. The Permittee cannot make any change at the source that would make the source a major source under New Source Review until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments. [Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TFAC 2	4100	The Permittee must submit an annual report by the 31st of January. The report must describe the changes made at the Facility during the previous calendar year using the latest MPCA application forms. The report must include information for any new, modified, or replaced Subject Items. The report must document the VOC 12-month rolling sum calculations for the previous calendar year. The report must be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee must verify and certify that the Facility has maintained minor source status for New Source Review. [Minn. R. 7007.0800, subp. 2(A)]
TFAC 2	4110	Equipment Labeling: The Permittee must permanently affix a unique number to each emissions unit for tracking purposes. Each number must 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 must be maintained so that it is readable and visible at all times from a safe distance. If equipment is added, it must be given a new unique number; numbers from replaced or removed equipment must not be reused. [Minn. R. 7007.0800, subp. 2(A)]
TFAC 2	4120	Equipment Inventory: The Permittee must maintain a written list of all emissions units and control equipment on site. The Permittee must update the list to include any replaced, modified, or new equipment prior to making the change. The list must correlate the units to the Subject Item numbers used in this permit and must include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction must be the date the change was made for replaced, modified, or new equipment. [Minn. R. 7007.0800, subp. 2(A)]
TFAC 2	7400	The Permittee must comply with Minn. Stat. 116.385. The Permittee may not use trichloroethylene 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. 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 2	7420	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 2	7450	The Permittee must 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 must 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 2	7540	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 2	7550	The Permittee must at all times properly operate and maintain the facilities and systems of treatment and control and the appurtenances related to them that are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. [Minn. R. 7007.0800, subp. 16(J)]
TFAC 2	7560	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)]

SI Id	Sequence	Requirement
TFAC 2	7570	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 2	7580	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 2	7590	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 U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
TFAC 2	7600	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 2	7610	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
TFAC 2	7620	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit. [Minn. R. ch. 7017]
TFAC 2	7630	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 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 2	7640	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's follow up 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]
TFAC 2	7650	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 2	7660	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 2	7670	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 2	7680	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)]

SI Id	Sequence	Requirement
TFAC 2	7690	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 expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. 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 2	7770	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 2	7780	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]
TFAC 2	7790	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 2	7800	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 2	7810	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(B)(2)]
TFAC 2	7830	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]

SI Id	Sequence	Requirement
TFAC 2	7840	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 2	7860	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(D)]
TFAC 2	7870	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)]
TFAC 2	7890	The Permittee shall submit an application for permit reissuance : Due 180 calendar days before Permit Expiration Date. [Minn. R. 7007.0400, subp. 2]
TFAC 2	7900	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 2	7910	Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0085]
COMG 3	200	The Permittee must limit usage of wood smoked <= 368 tons per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. This is a total combined usage limit for the smoke generators in COMG 3. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 3	2500	Daily Recordkeeping. On each day of operation, the Permittee must calculate, record, and maintain a record of the total quantity of wood smoked in COMG 3. This must be based on material usage records. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 3	3770	Monthly Recordkeeping. By the 15th of the month, the Permittee must calculate and record the following: 1) The total wood smoked in the previous calendar month using the daily records; and 2) The 12-month rolling sum of wood smoked for the previous 12-month period by summing the monthly wood smoked data for the previous 12 months. [Minn. R. 7007.0800, subps. 4-5]
COMG 16	19000	Particulate Matter: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.81 lb/hr. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 16 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven within COMG 16 is tested twice before all other ovens have been tested once. 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 follow up 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. 7011.0715, subp. 1(A), Minn. R. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
COMG 16	19810	PM < 10 micron: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.81 lb/hr. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 16 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven within COMG 16 is tested twice before all other ovens have been tested once. 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
	19820	PM < 2.5 micron: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.81 lb/hr. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 16 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven within COMG 16 is tested twice before all other ovens have been tested once. 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
COMG 16	19830	Opacity: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to measure emissions. The first test is due by the date specified and all subsequent tests shall be completed every 60 months thereafter by the set due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 9, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 16 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven within COMG 16 is tested twice before all other ovens have been tested once. 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 follow up 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. 7011.0610, subp. 1(A)(2), Minn. R. 7011.0715, subp. 1(A), Minn. R. 7017.2020, subp. 1]
		Carbon Monoxide: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.1013 lb CO/lb wood. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 10, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 16 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven within COMG 16 is tested twice before all other ovens have been tested once. 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 16	19840	

SI Id	Sequence	Requirement
COMG 18	19000	Particulate Matter: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.81 lb/hr. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 18 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven within COMG 18 is tested twice before all other ovens have been tested once. 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 follow up 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. 7011.0715, subp. 1(A), Minn. R. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
		PM < 10 micron: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.81 lb/hr. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 18 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven withing COMG 18 is tested twice before all other ovens have been testing once. 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 18	19810	

SI Id	Sequence	Requirement
COMG 18	19820	PM < 2.5 micron: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.81 lb/hr. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 18 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven within COMG 18 is tested twice before all other ovens have been tested once. 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
	19830	Opacity: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to measure emissions. The first test is due by the date specified and all subsequent tests shall be completed every 60 months thereafter by the set due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 9, or other method approved by MPCA in the performance test plan approval. Testing shall be completed on one of the COMG 18 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven within COMG 18 is tested twice before all other ovens have been tested once. 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 follow up 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. 7011.0610, subp. 1(A)(2), Minn. R. 7011.0715, subp. 1(A), Minn. R. 7017.2020, subp. 1]

SI Id	Sequence	Requirement
COMG 18	19840	Carbon Monoxide: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.1013 lb CO/lb wood.
		The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 10, or other method approved by MPCA in the performance test plan approval.
		Testing shall be completed on one of the COMG 18 ovens. A natural smoke cycle must occur during the performance test. Testing shall be completed on a rotating basis such that no single oven withing COMG 18 is tested twice before all other ovens have been tested once.
		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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 20	3570	Filterable Particulate Matter <= 0.4 pounds per million Btu heat input. The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0515, subp. 1]
COMG 20	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 20	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
COMG 20	3637	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
COMG 21	4	The Permittee shall limit Particulate Matter <= 2.68 pounds per hour 3-hour average. Compliance with this limit is shown by indoor air quality performance testing requirements located at EQUI 17 and EQUI 18. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 21	5	The Permittee shall limit PM < 10 micron <= 2.68 pounds per hour 3-hour average. Compliance with this limit is shown by indoor air quality performance testing requirements located at EQUI 17 and EQUI 18. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 21	6	The Permittee shall limit PM < 2.5 micron <= 2.68 pounds per hour 3-hour average. Compliance with this limit is shown by indoor air quality performance testing requirements located at EQUI 17 and EQUI 18. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 22	2	The Permittee shall limit Particulate Matter <= 3.0 pounds per hour 3-hour average. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 22	3	The Permittee shall limit PM < 10 micron <= 18.0 pounds per hour 3-hour average. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 22	4	The Permittee shall limit PM < 2.5 micron <= 18.0 pounds per hour 3-hour average. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 22	5	The Permittee shall limit Volatile Organic Compounds <= 0.99 pounds per hour 3-hour average. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
COMG 22	20000	Particulate Matter: The Permittee shall conduct a performance test due before 7/25/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined 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 first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 5 and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 22	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 7/25/2029 and every 12 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined 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 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
COMG 22	20030	PM < 2.5 micron: The Permittee shall conduct a performance test due before 7/25/2029 and every 12 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined 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 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
COMG 22	20080	Volatile Organic Compounds: The Permittee shall conduct a performance test due before 7/25/2029 and every 60 months thereafter to measure emissions. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 25A, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
		Recordkeeping: By the last day of each calendar month, the Permittee shall record the amount of natural gas combusted in the boilers during the previous calendar month. These records shall consist of purchase records, receipts, or fuel meter readings. [40 CFR 60.48c(g), Minn. R. 7011.0570]
		Filterable Particulate Matter <= 0.40 pounds per million Btu heat input The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0515, subp. 1]
		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]
EQUI 3	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 3	3637	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 3	4825	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 4	3570	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input. The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0515, subp. 1]
		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]
		Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
		The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 5	3570	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input. The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0515, subp. 1]
		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]
		Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
		The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 6	3570	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input. The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0515, subp. 1]
		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]
		Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
		The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 7	3570	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input. The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0515, subp. 1]
		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]
		Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
		The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 8	3570	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input. The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0515, subp. 1]
		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]
		Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
		The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
EQUI 9	3000	Recordkeeping: By the last day of each calendar month, the Permittee shall record the amount of natural gas combusted in the boilers during the previous calendar month. These records shall consist of purchase records, receipts, or fuel meter readings. [40 CFR 60.48c(g), Minn. R. 7011.0570]
EQUI 9	3570	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input The potential to emit from the unit is 0.0075 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.0515, subp. 1]
EQUI 9	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]
EQUI 9	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 9	3637	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 9	4825	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 14	2000	The Permittee must vent emissions from EQUI 14 in series to control equipment meeting the requirements of TREA 46, TREA 33, and TREA 23 whenever EQUI 14 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 14	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 14	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 14	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 14	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 17	2000	The Permittee must vent emissions from EQUI 17 in series to control equipment meeting the requirements of TREAs 24 and 25 whenever EQUI 17 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 17	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 17	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 17	19901	See additional requirements for EQUI 17 at STRU 2. [Minn. R. 7007.0800, subp. 2(A) & (B)]
EQUI 17	20000	Particulate Matter: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix D of this permit. The Permittee shall conduct the performance test to measure the PM ambient indoor air concentration in the Crax Grinding Room and Truck Loadout Room as identified in Appendix D, prior to venting to TREA 25. The results of the performance test will be used with the EQUI 18 performance test results to demonstrate compliance with the STRU 2 PM emission limit. Appendix D of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM emission rate based on the measured average PM concentration in the room air. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 5 and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
EQUI 17	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix E of this permit. The Permittee shall conduct the performance test to measure the PM10 ambient indoor air concentration in the Crax Grinding Room and Truck Loadout Room as identified in Appendix E, prior to venting to TREA 25. The results of the performance test will be used with the EQUI 18 performance test results to demonstrate compliance with the STRU 2 PM10 emission limit. Appendix E of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM10 emission rate based on the measured average PM10 concentration in the room air. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
		PM < 2.5 micron: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix E of this permit. The Permittee shall conduct the performance test to measure the PM2.5 ambient indoor air concentration in the Crax Grinding Room and Truck Loadout Room as identified in Appendix E, prior to venting to TREA 25. The results of the performance test will be used with the EQUI 18 performance test results to demonstrate compliance with the STRU 2 PM2.5 emission limit. Appendix E of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM2.5 emission rate based on the measured average PM2.5 concentration in the room air. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 17	20030	

SI Id	Sequence	Requirement
EQUI 18	2000	The Permittee must vent emissions from EQUI 18 to control equipment meeting the requirements of TREA 25 whenever EQUI 18 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 18	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 18	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 18	20000	Particulate Matter: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix E of this permit. The Permittee shall conduct the performance test to measure the PM ambient indoor air concentration in the Crax Grinding Room and Truck Loadout Room as identified in Appendix E, prior to venting to TREA 25. The results of the performance test will be used with the EQUI 17 performance test results to demonstrate compliance with the STRU 2 PM emission limit. Appendix E of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM emission rate based on the measured average PM concentration in the room air. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 5 and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
EQUI 18	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix E of this permit. The Permittee shall conduct the performance test to measure the PM10 ambient indoor air concentration in the Crax Grinding Room and Truck Loadout Room as identified in Appendix E, prior to venting to TREA 25. The results of the performance test will be used with the EQUI 17 performance test results to demonstrate compliance with the STRU 2 PM10 emission limit. Appendix E of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM10 emission rate based on the measured average PM10 concentration in the room air. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
	20030	PM < 2.5 micron: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix E of this permit. The Permittee shall conduct the performance test to measure the PM2.5 ambient indoor air concentration in the Crax Grinding Room and Truck Loadout Room as identified in Appendix E, prior to venting to TREA 25. The results of the performance test will be used with the EQUI 17 performance test results to demonstrate compliance with the STRU 2 PM2.5 emission limit. Appendix E of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM2.5 emission rate based on the measured average PM2.5 concentration in the room air. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 18	20041	See additional requirements for EQUI 18 at STRU 2. [Minn. R. 7007.0800, subp. 2(A) & (B)]

SI Id	Sequence	Requirement
EQUI 56	2000	The Permittee must vent emissions from EQUI 56 to control equipment meeting the requirements of TREA 42 whenever EQUI 56 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 56	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 56	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 56	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 56	3530	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 57	3000	The Permittee must vent emissions from EQUI 57 to control equipment meeting the requirements of TREA 43 whenever EQUI 57 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 57	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 57	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 57	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 57	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 58	2000	The Permittee must vent emissions from EQUI 58 to control equipment meeting the requirements of TREA 44 whenever EQUI 58 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 58	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 58	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 58	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 58	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 59	3000	The Permittee must vent emissions from EQUI 59 to control equipment meeting the requirements of TREA 45 whenever EQUI 59 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 59	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 59	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 59	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 59	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 60	3000	The Permittee must vent emissions from EQUI 60 to control equipment meeting the requirements of TREA 40 whenever EQUI 60 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 60	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 60	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 60	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 60	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 61	3000	The Permittee must vent emissions from EQUI 61 to control equipment meeting the requirements of TREA 41 whenever EQUI 61 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 61	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]

SI Id	Sequence	Requirement
EQUI 61	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 61	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 61	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 62	3000	The Permittee must vent emissions from EQUI 62 to control equipment meeting the requirements of TREA 39 whenever EQUI 62 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 62	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 62	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 62	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 62	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 63	3000	The Permittee must vent emissions from EQUI 63 to control equipment meeting the requirements of TREA 34 whenever EQUI 63 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 63	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 63	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 63	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 63	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 64	3000	The Permittee must vent emissions from EQUI 64 to control equipment meeting the requirements of TREA 35 whenever EQUI 64 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 64	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 64	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 64	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 64	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 65	3000	The Permittee must vent emissions from EQUI 65 to control equipment meeting the requirements of TREA 36 whenever EQUI 65 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 65	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 65	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 65	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 65	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 66	3000	The Permittee must vent emissions from EQUI 66 to control equipment meeting the requirements of TREA 37 whenever EQUI 66 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 66	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 66	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 66	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 66	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
EQUI 67	2000	The Permittee must vent emissions from EQUI 67 to control equipment meeting the requirements of TREA 38 whenever EQUI 67 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 67	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
EQUI 67	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 67	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 67	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 68	3000	The Permittee must vent emissions from EQUI 68 to control equipment meeting the requirements of TREAs 42 and 43 whenever EQUI 68 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 68	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 68	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 69	3000	The Permittee must vent emissions from EQUI 69 to control equipment meeting the requirements of TREAs 43, 44 and 45 whenever EQUI 69 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 69	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 69	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 71	2000	The Permittee must vent emissions from EQUI 71 in series to control equipment meeting the requirements of TREAs 31, 33, and 23 whenever EQUI 71 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 71	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 71	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 72	2	The Permittee shall limit Particulate Matter <= 8.38 pounds per hour 3-hour average. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 72	3	The Permittee shall limit PM < 10 micron <= 8.38 pounds per hour 3-hour average. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 72	5	The Permittee shall limit PM < 2.5 micron <= 8.38 pounds per hour 3-hour average. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 72	2000	The Permittee must vent emissions from EQUI 72 to control equipment meeting the requirements of TREA 26 whenever EQUI 72 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 72	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 72	3690	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. [Minn. R. 7011.0715, subp. 1(A)]

SI Id	Sequence	Requirement
EQUI 72	20000	Particulate Matter: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix E of this permit. The Permittee shall conduct the performance test to measure the PM ambient indoor air concentration in the Refined Products Room (Dupps Processing Room) as identified in Appendix E, prior to venting to TREA 26. The results of the performance test will be used to demonstrate compliance with the EQUI 72 PM emission limit. Appendix E of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM emission rate based on the measured average PM concentration in the room air. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 5 and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 72	20020	PM < 10 micron: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix E of this permit. The Permittee shall conduct the performance test to measure the PM10 ambient indoor air concentration in the Refined Products Room (Dupps Processing Room) as identified in Appendix E, prior to venting to TREA 26. The results of the performance test will be used to demonstrate compliance with the EQUI 72 PM10 emission limit. Appendix E of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM10 emission rate based on the measured average PM10 concentration in the room air. The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
EQUI 72	20030	PM < 2.5 micron: The Permittee shall conduct a performance test due before 2/9/2029 and every 60 months thereafter to measure emissions. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using NIOSH Method 0501 and following the protocol located in Appendix E of this permit. The Permittee shall conduct the performance test to measure the PM2.5 ambient indoor air concentration in the Refined Products Room (Dupps Processing Room) as identified in Appendix E, prior to venting to TREA 26.
		The results of the performance test will be used to demonstrate compliance with the EQUI 72 PM2.5 emission limit. Appendix E of this permit includes an outline of the testing methodology. In addition to the standard information included, the performance test plan must include: -Test methods; -The method for determining room ventilation air flow rates; and -The calculation methodology for determining the PM2.5 emission rate based on the measured average PM2.5 concentration in the room air.
		The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 76	3000	The Permittee must vent emissions from EQUI 76 to control equipment meeting the requirements of TREAs 40, 41 and 45 whenever EQUI 76 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 76	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 76	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 77	3000	The Permittee must vent emissions from EQUI 77 to control equipment meeting the requirements of TREAs 37 and 38 whenever EQUI 77 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 77	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 77	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 78	3000	The Permittee must vent emissions from EQUI 78 to control equipment meeting the requirements of TREAs 35, 36 and 37 whenever EQUI 78 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 78	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 78	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 79	3000	The Permittee must vent emissions from EQUI 79 to control equipment meeting the requirements of TREAs 34 and 35 whenever EQUI 79 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 79	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 79	3690	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. [Minn. R. 7011.0715, subp. 1(A)]

SI Id	Sequence	Requirement
EQUI 80	3000	The Permittee must vent emissions from EQUI 80 to control equipment meeting the requirements of TREAs 39 and 41 whenever EQUI 80 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 80	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 80	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 81	2000	The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. ZZZZ, as follows: 40 CFR 63.6585(a); 40 CFR 63.6585(c); 40 CFR 63.6590(a)(1)(iii); 40 CFR 63.6595(a)(1); 40 CFR 63.6603(a); 40 CFR 63.6605; 40 CFR 63.6625(e)(3); 40 CFR 63.6625(f); 40 CFR 63.6625(h); 40 CFR 63.6625(j); 40 CFR 63.6640(a)-(b); 40 CFR 63.6640(e); 40 CFR 63.6640(f)(1); 40 CFR 63.6640(f)(2); 40 CFR 63.6640(f)(4);
		40 CFR 63.6645(a)(5); 40 CFR 63.6650(a); 40 CFR 63.6650(b); (introductory paragraph only) 40 CFR 63.6650(f); 40 CFR 63.6650(h)(1)-(3); 40 CFR 63.6650(i); 40 CFR 63.6655(a); 40 CFR 63.6655(d); 40 CFR 63.6655(e)(2)-(3); 40 CFR 66.6655(f)(2); 40 CFR 63.6660; 40 CFR 63.6665; 40 CFR 63.6675; 40 CFR pt. 63, subp. ZZZZ, Table 2d, item 5; 40 CFR pt. 63, subp. ZZZZ Table 6, item 9; 40 CFR pt. 63, subp. ZZZZ Table 7, item 4; and 40 CFR pt. 63, subp. ZZZZ Table 8. A copy of 40 CFR pt. 63, subp. ZZZZ is included in Appendix B. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three 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. 63, subp. ZZZZ, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.8150]

SI Id	Sequence	Requirement
		The Permittee must comply with all applicable requirements of 40 CFR pt. 63, subp. A as follows: 40 CFR 63.1; 40 CFR 63.2; 40 CFR 63.3; 40 CFR 63.4; 40 CFR 63.5; 40 CFR 63.6(a); and 40 CFR 63.6(b)(1)-(b)(4). A copy of 40 CFR pt. 63, subp. A is included in Appendix C. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than three 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. 63, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, subp. 1(B), Minn. R. 7017.1010 & 7017.2015, subp. 3, Minn. R. 7019.0100]
EQUI 81	2500	
EQUI 81	3520	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
EQUI 81	3535	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00059 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
EQUI 81	3540	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 81	3550	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, that allows calculation of potential emissions based on 500 operating hours per year. [Minn. R. 7007.0800, subps. 4-5]
EQUI 81	3560	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
EQUI 81	3565	Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of natural gas, certifying that the sulfur content does not exceed 0.0015 percent by weight. [Minn. R. 7007.0800, subps. 4-5]
EQUI 81	4560	If the emergency stationary engine operates for the purposes specified in 40 CFR 63.6640(f)(4)(ii), the Permittee must submit an annual report for each calendar year no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emission Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange CDX) (https://cdx.epa.gov/). However, if the reporting form 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 40 CFR 63.13 and emailed to the MPCA as directed in Section 2 of this permit for other compliance submittals. Beginning on February 26, 2025, submit the annual report electronically according to 40 CFR 63.6650(i). [40 CFR 63.6650(b), 40 CFR 63.6650(h), 40 CFR 63.6650(i), 40 CFR pt. 63, subp. ZZZZ(Table 7)(item 4), Minn. R. 7011.8150]
EQUI 101	2000	The Permittee must vent emissions from EQUI 101 in series to control equipment meeting the requirements of TREAs 33 and 23 whenever EQUI 101 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 101	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 101	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 111	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 111	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 113	2000	The Permittee must vent emissions from EQUI 113 in series to control equipment meeting the requirements of TREAs 46, 33, and 23 whenever EQUI 113 operates. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 113	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]

SI Id	Sequence	Requirement
EQUI 113	3460	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
EQUI 113	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 113	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 117	3570	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input. [Minn. R. 7011.0515, subp. 1]
EQUI 117	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]
EQUI 117	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 117	3637	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
EQUI 117	19000	Particulate Matter: The Permittee shall conduct a performance test due before 7/6/2031 and every 120 months thereafter to verify the emission factor of 1.34 lb/hr. The first test is due by the date specified above and all subsequent tests shall be completed every 120 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 Reference Methods 5 and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 117	19810	PM < 10 micron: Alternate Operating Scenario: The Permittee shall conduct a performance test due before 7/6/2031 and every 120 months thereafter to verify the emission factor of 1.34 lb/hr. This is to verify the combined emission factor of the braising and combustion portions of EQUI 117. The first test is due by the date specified above and all subsequent tests shall be completed every 120 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
EQUI 117	19820	PM < 2.5 micron: The Permittee shall conduct a performance test due before 7/6/2031 and every 120 months thereafter to verify the emission factor of 1.32 lb/hr.
		The first test is due by the date specified above and all subsequent tests shall be completed every 120 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 Reference Methods 201A and 202, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 117	19840	Carbon Monoxide: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 7.1 lb/hr.
		The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 10, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 117	19860	Sulfur Dioxide: The Permittee shall conduct a performance test due before 7/6/2026 and every 60 months thereafter to verify the emission factor of 0.86 lb SO ₂ /hr.
		The first test is due by the date specified above and all subsequent tests shall be completed every 60 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 Reference Methods 6C, 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 follow up 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. 7017.2020, subp. 1, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 118	3000	The Permittee must vent emissions from EQUI 118 to control equipment meeting the requirements of TREAs 39 and 40 whenever EQUI 118 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 118	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 118	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 119	3000	The Permittee must vent emissions from EQUI 119 to control equipment meeting the requirements of TREAs 42 and 44 whenever EQUI 119 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 119	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]

SI Id	Sequence	Requirement
EQUI 119	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
EQUI 120	3000	The Permittee must vent emissions from EQUI 120 to control equipment meeting the requirements of TREAs 34, 36 and 38 whenever EQUI 120 operates during the smoke cycle of the cooking process. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 120	3680	Opacity <= 20 percent opacity. [Minn. R. 7011.0715, subp. 1(B)]
EQUI 120	3690	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. [Minn. R. 7011.0715, subp. 1(A)]
TREA 23	500	The Permittee shall vent emissions from EQUI 14, EQUI 71, EQUI 101 and EQUI 113 to TREA 23 whenever EQUI 14, EQUI 71, EQUI 101 and EQUI 113 operate. The Permittee must document periods of non-operation of the control equipment TREA 23 whenever EQUI 14, EQUI 71, EQUI 101 and EQUI 113 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	2500	If the Permittee replaces TREA 23, the replacement control must meet or exceed the control efficiency requirements of TREA 23 as well as comply with all other requirements of TREA 23. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	2501	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 62 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	2502	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 62 percent control efficiency. [Title I Condition: 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	3000	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 62 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	19130	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds >= 97.0 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	19140	Temperature >= 1400 degrees Fahrenheit 3-hour rolling average at the combustion chamber outlet, unless a new limit is required to be set pursuant to Minn. R. 7017.2025, subp. 3. If a new minimum is required to be set it will be based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new limit must be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. If the 3-hour rolling average temperature is below the minimum temperature limit, the VOC emitted during that time must be considered uncontrolled until the average temperature is above the minimum temperature limit. This must be reported as a deviation. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	19170	Temperature Monitoring: The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device shall also calculate the three-hour rolling average combustion chamber temperature. Recorded values outside the range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.3(b)(4)(ii) and Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 23	19172	For periods when the thermal oxidizer is operated above the minimum combustion chamber temperature, the Permittee must use either one of the following when completing calculations as required elsewhere in this permit: a. The control efficiency limit specified in this permit for this equipment (97.0%); or b. The control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	19180	Daily Monitoring: The Permittee shall physically verify the operation of the temperature recording device 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. [40 CFR 64.3(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	19190	Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [40 CFR 64.7(b), Minn. R. 7017.0200]
TREA 23	19200	The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three hour rolling average temperatures for the combustion chamber. [40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 23	19210	Annual Calibration: The Permittee shall calibrate the temperature monitor at least once every 12 months and shall maintain a written record of the calibration and any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 23	19220	Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 23	19230	Annual Inspection: At least once per calendar year, the Permittee shall conduct an internal inspection of the control device that includes all operating systems of the control device. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 23	19250	Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum 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 thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken. [40 CFR 64.7(d), Minn. R. 7017.0200]
TREA 23	20000	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
TREA 23	20200	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. [Minn. R. 7011.0610, subp. 1(A)(1)]
TREA 23	20300	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
TREA 23	20400	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
TREA 23	20500	The Permittee must operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 24	16440	The Permittee must vent emissions from EQUI 17 to TREA 24 whenever EQUI 17 operates. The Permittee must document periods of non-operation of the control equipment TREA 24 whenever EQUI 17 is operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 24	16450	If the Permittee replaces TREA 24, the replacement control must meet or exceed the control efficiency requirements of TREA 24 as well as comply with all other requirements of TREA 24. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 24	17420	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter $\geq$ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 24	17430	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 24	17440	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 24	17450	The Permittee must operate and maintain the scrubber in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 24	17460	Daily Inspections: The Permittee shall do the following, once every 24 hours: 1). Read and record the scrubber liquid flow rate; and 2). Read and record the gas pressure drop across the scrubber. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 24	17470	Recordkeeping of Pressure Drop and Water Flow Rate: The Permittee shall record the time and date of each pressure drop reading and water flow rate reading, and whether or not the observed value was within the range specified in this permit. Recorded values outside any range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 24	17480	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop, water flow rate, and water supply pressure as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [40 CFR 64.7(b), Minn. R. 7017.0200]
TREA 24	17490	The Permittee shall calibrate the gauges at least once every 12 months and shall maintain a written record of any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 24	17500	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 24	17510	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded water flow rate is below the water flow rate limit; or - the recorded pressure drop is outside the required operating range; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate 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 scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for the scrubber. [40 CFR 64.7(d), Minn. R. 7017.0200]

SI Id	Sequence	Requirement
TREA 24	17580	Pressure Drop ≥ 4.0 and ≤ 14.0 inches of water, 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 follow up compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. If the recorded pressure drop is outside the required range, the emissions during that time must be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range must be reported as a deviation. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 24	17590	Water flow rate ≥ 100 gallons per minute, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. If the recorded water flow rate is below the Water Flow Rate Limit, the emissions during that time must be considered uncontrolled until the water flow rate is above the Water Flow Rate Limit. The period of time for which emissions are considered uncontrolled must be reported as a deviation. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 24	35750	Documentation of Need for Improved Monitoring: If the Permittee fails to achieve compliance with an emission limitation or standard for which the monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing pressure drop range or water flow rate, the Permittee shall promptly notify the MPCA and, if necessary, submit a permit amendment application to address the necessary monitoring change. [40 CFR 64.7(e), Minn. R. 7017.0200]
TREA 24	35760	As required by 40 CFR 64.9(a)(2), for the Semi-Annual Deviations Report required by this permit and/or the Notification of Deviations Endangering Human Health and the Environment required by this permit, as applicable, the Permittee shall include the following related to the monitoring identified as required by 40 CFR pt. 64: 1) Summary information on the number, duration, and cause of excursions or exceedances, as applicable, and the corrective action taken; and 2) Summary information on the number, duration, and cause for monitor downtime incidents. [40 CFR 64.9(a)(2), Minn. R. 7017.0200]
TREA 24	35770	The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, and other supporting information required to be maintained. The Permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR 64.9(b), Minn. R. 7017.0200]
TREA 25	16440	The Permittee must vent emissions from EQUIs 17 and 18 to TREA 25 whenever EQUIs 17 and 18 operate. The Permittee must document periods of non-operation of the control equipment TREA 25 whenever EQUIs 17 and 18 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 25	16450	If the Permittee replaces TREA 25, the replacement control must meet or exceed the control efficiency requirements of TREA 25 as well as comply with all other requirements of TREA 25. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 25	17420	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 85 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 25	17430	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 25	17440	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 25	17450	The Permittee must operate and maintain the scrubber in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 25	17460	Daily Inspections: The Permittee shall do the following, once every 24 hours: 1). Read and record the scrubber liquid flow rate; and 2). Read and record the gas pressure drop across the scrubber. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 25	17470	Recordkeeping of Pressure Drop and Water Flow Rate: The Permittee shall record the time and date of each pressure drop reading and water flow rate reading and whether or not the observed value was within the range specified in this permit. Recorded values outside any range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 25	17480	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop and water flow rate as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [40 CFR 64.7(b), Minn. R. 7017.0200]
TREA 25	17490	The Permittee shall calibrate the gauges at least once every 12 months and shall maintain a written record of any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 25	17500	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 25	17510	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded water flow rate is below the water flow rate limit; or - the recorded pressure drop is outside the required operating range; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate 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 scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for the scrubber. [40 CFR 64.7(d), Minn. R. 7017.0200]
TREA 25	17520	Pressure Drop $\geq$ 2.0 and $\leq$ 12.0 inches of water (Pressure Drop Range Limit) as determined during the 2/9/2024 performance test, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded pressure drop is outside the required range, the emissions during that time must be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range must be reported as a deviation. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 25	17530	Water flow rate $\geq$ 320 gallons per minute (Water Flow Rate Limit) as determined during the 2/9/2024 performance test, unless a new limit is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded water flow rate is below the Water Flow Rate Limit, the emissions during that time must be considered uncontrolled until the water flow rate is above the Water Flow Rate Limit. The period of time for which emissions are considered uncontrolled must be reported as a deviation. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 25	17540	Protocol for Resetting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM/PM10/PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be reset, the reset shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee must calculate the average pressure drop based on the average exhibited over all three compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The established Pressure Drop Range Limit shall be reset as follows: - if the 3-hour average pressure drop recorded during the test is within the established range, it shall not be reset and the established values remain the Pressure Drop Range Limit; or - if the 3-hour average pressure drop is below the minimum value of the established range, the new minimum value shall be reset to 50% of the average pressure drop from the test. The maximum value shall be decreased by the same amount to maintain the pressure drop range; or - if the 3-hour average pressure drop is above the maximum value of the established range, the new maximum value shall be reset as the average pressure drop from the test plus 10%. The minimum value shall be increased by the same amount to maintain the pressure drop range. The pressure drop range is equal to the maximum value (upper bound) minus the minimum value (lower bound). Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the follow up compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40
TREA 25	17550	Protocol for Resetting the Water Flow Rate Limit: The Permittee shall conduct performance testing to measure the PM/PM10/PM2.5 emission rate as required elsewhere in this permit. If the established Water Flow Rate Limit is to be reset, the reset shall be based on the water flow rate values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the water flow rate. The Permittee must calculate the average water flow rate for each individual compliant test run. Downtime of 15 minutes or more is not to be included as operating time. The Water Flow Rate Limit shall be reset as follows: - if the lowest 1-hour average water flow rate recorded during a compliant test run is between 100% and 110% of the current limit, it shall not be reset and the established Water Flow Rate Limit remains unchanged; or - if the lowest 1-hour average water flow rate recorded during a compliant test run is lower than the current limit, the limit shall be reset as the lowest 1-hour average water flow rate of a compliant test run; or - if the lowest 1-hour average water flow rate recorded during a compliant test run is 10% greater than the current limit, the limit shall be reset as the lowest 1-hour average water flow rate of a compliant test run. The new Water Flow Rate Limit shall be effective upon receipt of the follow up compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 25	17560	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-Setting the Pressure Drop Range Limit or the Protocol for Re-setting the Water Flow Rate Limit required by this permit. [Minn. R. 7007.1500, subp. 1]

SI Id	Sequence	Requirement
TREA 25	17570	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the follow up 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]
TREA 25	35750	Documentation of Need for Improved Monitoring: If the Permittee fails to achieve compliance with an emission limitation or standard for which the monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing pressure drop range or water flow rate, the Permittee shall promptly notify the MPCA and, if necessary, submit a permit amendment application to address the necessary monitoring change. [40 CFR 64.7(e), Minn. R. 7017.0200]
TREA 25	35760	As required by 40 CFR 64.9(a)(2), for the Semi-Annual Deviations Report required by this permit and/or the Notification of Deviations Endangering Human Health and the Environment required by this permit, as applicable, the Permittee shall include the following related to the monitoring identified as required by 40 CFR pt. 64: 1) Summary information on the number, duration, and cause of excursions or exceedances, as applicable, and the corrective action taken; and 2) Summary information on the number, duration, and cause for monitor downtime incidents. [40 CFR 64.9(a)(2), Minn. R. 7017.0200]
TREA 25	35770	The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, and other supporting information required to be maintained. The Permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [40 CFR 64.9(b), Minn. R. 7017.0200]
TREA 26	16440	The Permittee must vent emissions from EQUI 72 to TREA 26 whenever EQUI 72 operates. The Permittee must document periods of non-operation of the control equipment TREA 26 whenever EQUI 72 is operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 26	16450	If the Permittee replaces TREA 26, the replacement control must meet or exceed the control efficiency requirements of TREA 26 as well as comply with all other requirements of TREA 26. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 26	17420	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 85 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 26	17430	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 26	17435	Pressure Drop ≥ 2.0 and ≤ 12.0 inches of water (Pressure Drop Range Limit) as determined during the 5/13/2024 performance test, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded pressure drop is outside the required range, the emissions during that time must be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range must be reported as a deviation. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 26	17440	Water flow rate $\geq 1,000$ gallons per minute (Water Flow Rate Limit) as determined during the 5/13/2024 performance test, unless a new limit is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded water flow rate is below the Water Flow Rate Limit, the emissions during that time must be considered uncontrolled until the water flow rate is above the Water Flow Rate Limit. The period of time for which emissions are considered uncontrolled must be reported as a deviation. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 26	17445	Protocol for Resetting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM/PM10/PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be reset, the reset shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee must calculate the average pressure drop based on the average exhibited over all three compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The established Pressure Drop Range Limit shall be reset as follows: - if the 3-hour average pressure drop recorded during the test is within the established range, it shall not be reset and the established values remain the Pressure Drop Range Limit; or - if the 3-hour average pressure drop is above the maximum value of the established range, the new maximum value shall be reset as the average pressure drop from the test plus 10%. The minimum value shall be increased by the same amount to maintain the pressure drop range. The pressure drop range is equal to the maximum value (upper bound) minus the minimum value (lower bound). Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the follow up compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40
TREA 26	17450	Protocol for Resetting the Water Flow Rate Limit: The Permittee shall conduct performance testing to measure the PM/PM10/PM2.5 emission rate as required elsewhere in this permit. If the established Water Flow Rate Limit is to be reset, the reset shall be based on the water flow rate values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the water flow rate. The Permittee must calculate the average water flow rate for each individual compliant test run. Downtime of 15 minutes or more is not to be included as operating time. The Water Flow Rate Limit shall be reset as follows: - if the lowest 1-hour average water flow rate recorded during a compliant test run is between 100% and 110% of the current limit, it shall not be reset and the established Water Flow Rate Limit remains unchanged; or - if the lowest 1-hour average water flow rate recorded during a compliant test run is lower than the current limit, the limit shall be reset as the lowest 1-hour average water flow rate of a compliant test run; or - if the lowest 1-hour average water flow rate recorded during a compliant test run is 10% greater than the current limit, the limit shall be reset as the lowest 1-hour average water flow rate of a compliant test run. The new Water Flow Rate Limit shall be effective upon receipt of the follow up compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 26	17460	Daily Inspections: The Permittee shall do the following, once every 24 hours: 1). Read and record the scrubber liquid flow rate; and 2). Read and record the gas pressure drop across the scrubber. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 26	17470	Recordkeeping of Pressure Drop and Water Flow Rate: The Permittee shall record the time and date of each pressure drop reading and water flow rate reading, and whether or not the observed value was within the range specified in this permit. Recorded values outside any range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 26	17480	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop and water flow rate as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [40 CFR 64.7(b), Minn. R. 7017.0200]
TREA 26	17490	The Permittee shall calibrate the gauges at least once every 12 months and shall maintain a written record of any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 26	17500	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 26	17510	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded water flow rate is below the water flow rate limit; or - the recorded pressure drop is outside the required operating range; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate 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 scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for the scrubber. [40 CFR 64.7(d), Minn. R. 7017.0200]
TREA 26	17560	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-Setting the Pressure Drop Range Limit or the Protocol for Re-setting the Water Flow Rate Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
TREA 26	17570	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the follow up 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]
TREA 26	18000	The Permittee must operate and maintain the scrubber in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 31	16440	The Permittee must vent emissions from EQUI 71 whenever TREA 31 operates. The Permittee must document periods of non-operation of the control equipment TREA 31 whenever EQUI 71 is operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	16450	If the Permittee replaces TREA 31, the replacement control must meet or exceed the control efficiency requirements of TREA 31 as well as comply with all other requirements of TREA 31. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	17420	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter $\geq$ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	17430	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	17440	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 31	17445	Pressure Drop ≥ 4.0 and ≤ 14.0 inches of water (Pressure Drop Range Limit) as determined during the 7/25/2024 performance test, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded pressure drop is outside the required range, the emissions during that time must be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range must be reported as a deviation. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	17450	Water flow rate ≥ 83.0 gallons per minute (Water Flow Rate Limit) as determined during the 7/25/2024 performance test, unless a new limit is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded water flow rate is below the Water Flow Rate Limit, the emissions during that time must be considered uncontrolled until the water flow rate is above the Water Flow Rate Limit. The period of time for which emissions are considered uncontrolled must be reported as a deviation. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	17452	Protocol for Resetting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM/PM10/PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be reset, the reset shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee must calculate the average pressure drop based on the average exhibited over all three compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The established Pressure Drop Range Limit shall be reset as follows: - if the 3-hour average pressure drop recorded during the test is within the established range, it shall not be reset and the established values remain the Pressure Drop Range Limit; or - if the 3-hour average pressure drop is above the maximum value of the established range, the new maximum value shall be reset as the average pressure drop from the test plus 10%. The minimum value shall be increased by the same amount to maintain the pressure drop range. The pressure drop range is equal to the maximum value (upper bound) minus the minimum value (lower bound). Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the follow up compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40

SI Id	Sequence	Requirement
TREA 31	17456	Protocol for Resetting the Water Flow Rate Limit: The Permittee shall conduct performance testing to measure the PM/PM10/PM2.5 emission rate as required elsewhere in this permit. If the established Water Flow Rate Limit is to be reset, the reset shall be based on the water flow rate values recorded during the most recent MPCA approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the water flow rate. The Permittee must calculate the average water flow rate for each individual compliant test run. Downtime of 15 minutes or more is not to be included as operating time. The Water Flow Rate Limit shall be reset as follows: - if the lowest 1-hour average water flow rate recorded during a compliant test run is between 100% and 110% of the current limit, it shall not be reset and the established Water Flow Rate Limit remains unchanged; or - if the lowest 1-hour average water flow rate recorded during a compliant test run is lower than the current limit, the limit shall be reset as the lowest 1-hour average water flow rate of a compliant test run; or - if the lowest 1-hour average water flow rate recorded during a compliant test run is 10% greater than the current limit, the limit shall be reset as the lowest 1-hour average water flow rate of a compliant test run. The new Water Flow Rate Limit shall be effective upon receipt of the follow up compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7017.0205, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	17460	Daily Inspections: The Permittee shall do the following, once every 24 hours: 1). Read and record the scrubber liquid flow rate; and 2). Read and record the gas pressure drop across the scrubber. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	17470	Recordkeeping of Pressure Drop and Water Flow Rate: The Permittee shall record the time and date of each pressure drop reading and water flow rate reading, and whether or not the observed value was within the range specified in this permit. Recorded values outside any range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 31	17480	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop and water flow rate as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [40 CFR 64.7(b), Minn. R. 7017.0200]
TREA 31	17490	The Permittee shall calibrate the gauges at least once every 12 months and shall maintain a written record of any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 31	17500	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 31	17510	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded water flow rate is below the water flow rate limit; or - the recorded pressure drop is outside the required operating range; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate 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 scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for the scrubber. [40 CFR 64.7(d), Minn. R. 7017.0200]
TREA 31	17560	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-Setting the Pressure Drop Range Limit or the Protocol for Re-setting the Water Flow Rate Limit required by this permit. [Minn. R. 7007.1500, subp. 1]

SI Id	Sequence	Requirement
TREA 31	17570	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the follow up 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]
TREA 31	18000	The Permittee must operate and maintain the scrubber in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 33	16440	The Permittee must vent emissions from EQUI 101 to TREA 33 whenever EQUI 101 operates. The Permittee must document periods of non-operation of the control equipment TREA 33 whenever EQUI 101 is operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	16450	If the Permittee replaces TREA 33, the replacement control must meet or exceed the control efficiency requirements of TREA 33 as well as comply with all other requirements of TREA 33. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	17420	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter $\geq$ 85 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	17430	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	17440	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	17442	Pressure Drop $\geq$ 0.5 and $\leq$ 10.5 inches of water (Pressure Drop Range Limit) as determined during the 7/25/2024 performance test, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded pressure drop is outside the required range, the emissions during that time must be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range must be reported as a deviation. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	17446	Water flow rate $\geq$ 720 gallons per minute (Water Flow Rate Limit) as determined during the 7/25/2024 performance test, unless a new limit is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded water flow rate is below the Water Flow Rate Limit, the emissions during that time must be considered uncontrolled until the water flow rate is above the Water Flow Rate Limit. The period of time for which emissions are considered uncontrolled must be reported as a deviation. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 33	17450	Protocol for Resetting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM/PM10/PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be reset, the reset shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee must calculate the average pressure drop based on the average exhibited over all three compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The established Pressure Drop Range Limit shall be reset as follows: - if the 3-hour average pressure drop recorded during the test is within the established range, it shall not be reset and the established values remain the Pressure Drop Range Limit; or - if the 3-hour average pressure drop is below the minimum value of the established range, the new minimum value shall be reset to 50% of the average pressure drop from the test. The maximum value shall be decreased by the same amount to maintain the pressure drop range; or - if the 3-hour average pressure drop is above the maximum value of the established range, the new maximum value shall be reset as the average pressure drop from the test plus 10%. The minimum value shall be increased by the same amount to maintain the pressure drop range. The pressure drop range is equal to the maximum value (upper bound) minus the minimum value (lower bound). Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the follow up compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40
		Protocol for Resetting the Water Flow Rate Limit: The Permittee shall conduct performance testing to measure the PM/PM10/PM2.5 emission rate as required elsewhere in this permit. If the established Water Flow Rate Limit is to be reset, the reset shall be based on the water flow rate values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the water flow rate. The Permittee must calculate the average water flow rate for each individual compliant test run. Downtime of 15 minutes or more is not to be included as operating time. The Water Flow Rate Limit shall be reset as follows: - if the lowest 1-hour average water flow rate recorded during a compliant test run is between 100% and 110% of the current limit, it shall not be reset and the established Water Flow Rate Limit remains unchanged; or - if the lowest 1-hour average water flow rate recorded during a compliant test run is lower than the current limit, the limit shall be reset as the lowest 1-hour average water flow rate of a compliant test run; or - if the lowest 1-hour average water flow rate recorded during a compliant test run is 10% greater than the current limit, the limit shall be reset as the lowest 1-hour average water flow rate of a compliant test run. The new Water Flow Rate Limit shall be effective upon receipt of the follow up compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7017.2025, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	17451	

SI Id	Sequence	Requirement
TREA 33	17452	Recordkeeping of Pressure Drop and Water Flow Rate: The Permittee shall record the time and date of each pressure drop reading and water flow rate reading, and whether or not the observed value was within the range specified in this permit. Recorded values outside any range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	17460	Daily Inspections: The Permittee shall do the following, once every 24 hours: 1). Read and record the scrubber liquid flow rate; and 2). Read and record the gas pressure drop across the scrubber. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 33	17480	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop and water flow rate as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [40 CFR 64.7(b), Minn. R. 7017.0200]
TREA 33	17490	The Permittee shall calibrate the gauges at least once every 12 months and shall maintain a written record of any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 33	17500	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 33	17510	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded water flow rate is below the water flow rate limit; or - the recorded pressure drop is outside the required operating range; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate 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 scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for the scrubber. [40 CFR 64.7(d), Minn. R. 7017.0200]
TREA 33	17560	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-Setting the Pressure Drop Range Limit or the Protocol for Re-setting the Water Flow Rate Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
TREA 33	17570	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the follow up 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]
TREA 33	18000	The Permittee must operate and maintain the scrubber in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 34	17610	The Permittee must vent emissions from EQUIs 63, 79 and 120 to TREA 34 whenever EQUIs 63, 79 and 120 operate. The Permittee must document periods of non-operation of the control equipment TREA 34 whenever EQUIs 63, 79 and 120 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 34	17615	If the Permittee replaces TREA 34, the replacement control must meet or exceed the control efficiency requirements of TREA 34 as well as comply with all other requirements of TREA 34. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 34	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter $\geq$ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 34	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 34	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 34	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds $\geq$ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 34	27360	Water flow rate $\geq$ 3.5 gallons per minute as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 34	27370	Water pressure $\geq$ 55.0 psi (gauge) as determined during the 7/6/2021 performance test, for the pump, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water pressure at least once every 24 hours when in operation. If the recorded water pressure is below the minimum water pressure limit, the emissions during that time must be considered uncontrolled until the water pressure is once again above the minimum water pressure limit. The period of time for which the water pressure is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 34	27530	Recordkeeping of Water Flow Rate and Water Pressure: The Permittee must record the time and date of each water flow rate water pressure reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 34	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rate and water pressure are below the required rate; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rate and/or water pressure to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 34	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 34	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rate and water pressure as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 34	27565	The Permittee must calibrate or replace the flow rate and water pressure monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 34	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must 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 35	17610	The Permittee must vent emissions from EQUIs 64, 78, and 79 to TREA 35 whenever EQUIs 64, 78, and 79 operate. The Permittee must document periods of non-operation of the control equipment TREA 35 whenever EQUIs 64, 78, and 79 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 35	17615	If the Permittee replaces TREA 35, the replacement control must meet or exceed the control efficiency requirements of TREA 35 as well as comply with all other requirements of TREA 35. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 35	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 35	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 35	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 35	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds ≥ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 35	27360	Water flow rate ≥ 3.5 gallons per minute as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 35	27370	Water pressure ≥ 55.0 psi (gauge) as determined during the 7/6/2021 performance test, for the pump, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water pressure at least once every 24 hours when in operation. If the recorded water pressure is below the minimum water pressure limit, the emissions during that time must be considered uncontrolled until the water pressure is once again above the minimum water pressure limit. The period of time for which the water pressure is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 35	27530	Recordkeeping of Water Flow Rate and Water Pressure: The Permittee must record the time and date of each water flow rate and water pressure reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
		Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rate and water pressure are below the required rate; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rate and/or water pressure to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 35	27540	
TREA 35	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 35	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rate and water pressure as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 35	27565	The Permittee must calibrate or replace the flow rate and water pressure monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 35	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 36	17610	The Permittee must vent emissions from EQUIs 65, 78 and 120 to TREA 36 whenever TREA 36 operates. The Permittee must document periods of non-operation of the control equipment TREA 36 whenever EQUIs 65, 78 and 120 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 36	17615	If the Permittee replaces TREA 36, the replacement control must meet or exceed the control efficiency requirements of TREA 36 as well as comply with all other requirements of TREA 36. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 36	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 36	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 36	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 36	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds ≥ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 36	27360	Water flow rate $\geq$ 3.5 gallons per minute as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 36	27370	Water pressure $\geq$ 55.0 psi (gauge) as determined during the 7/6/2021 performance test, for the pump, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water pressure at least once every 24 hours when in operation. If the recorded water pressure is below the minimum water pressure limit, the emissions during that time must be considered uncontrolled until the water pressure is once again above the minimum water pressure limit. The period of time for which the water pressure is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 36	27530	Recordkeeping of Water Flow Rate and Water Pressure: The Permittee must record the time and date of each water flow rate and water pressure reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 36	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rate or water pressure is below the required rate; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rate and/or water pressure to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 36	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 36	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rate and water pressure as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 36	27565	The Permittee must calibrate or replace the flow rate and water pressure monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 36	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 37	17610	The Permittee must vent emissions from EQUIs 66, 77 and 78 to TREA 37 whenever EQUIs 66, 77 and 78 operate. The Permittee must document periods of non-operation of the control equipment TREA 37 whenever EQUIs 66, 77 and 78 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 37	17615	If the Permittee replaces TREA 37, the replacement control must meet or exceed the control efficiency requirements of TREA 37 as well as comply with all other requirements of TREA 37. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 37	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter $\geq$ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 37	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 37	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 37	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds $\geq$ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 37	27360	Water flow rate $\geq$ 3.5 gallons per minute as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 37	27370	Water pressure $\geq$ 55.0 psi (gauge) as determined during the 7/6/2021 performance test, for the pump, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water pressure at least once every 24 hours when in operation. If the recorded water pressure is below the minimum water pressure limit, the emissions during that time must be considered uncontrolled until the water pressure is once again above the minimum water pressure limit. The period of time for which the water pressure is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 37	27530	Recordkeeping of Water Flow Rate and Water Pressure: The Permittee must record the time and date of each water flow rate and water pressure reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 37	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rate and water pressure are below the required rate; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rate and/or water pressure to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
TREA 37	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 37	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rate and water pressure as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 37	27565	The Permittee must calibrate or replace the flow rate and water pressure monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 37	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 38	17610	The Permittee must vent emissions from EQUIs 67, 77, and 120 to TREA 38 whenever EQUIs 67, 77, and 120 operate. The Permittee must document periods of non-operation of the control equipment TREA 38 whenever EQUIs 67, 77, and 120 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 38	17615	If the Permittee replaces TREA 38, the replacement control must meet or exceed the control efficiency requirements of TREA 38 as well as comply with all other requirements of TREA 38. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 38	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 38	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 38	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 38	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds ≥ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 38	27360	Water flow rate ≥ 3.5 gallons per minute as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 38	27370	Water pressure $\geq$ 55.0 psi (gauge) as determined during the 7/6/2021 performance test, for the pump, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. The Permittee must record the water pressure at least once every 24 hours when in operation. If the recorded water pressure is below the minimum water pressure limit, the emissions during that time must be considered uncontrolled until the water pressure is once again above the minimum water pressure limit. The period of time for which the water pressure is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 38	27530	Recordkeeping of Water Flow Rate and Water Pressure: The Permittee must record the time and date of each water flow rate and water pressure reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 38	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rate and water pressure are below the required rate; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rate and/or water pressure to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 38	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 38	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rate and water pressure as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 38	27565	The Permittee must calibrate or replace the flow rate and water pressure monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 38	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 39	17610	The Permittee must vent emissions from EQUIs 62, 80, and 118 to TREA 39 whenever EQUIs 62, 80, and 118 operate. The Permittee must document periods of non-operation of the control equipment TREA 39 whenever EQUIs 62, 80, and 118 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 39	17615	If the Permittee replaces TREA 39, the replacement control must meet or exceed the control efficiency requirements of TREA 39 as well as comply with all other requirements of TREA 39. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 39	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter $\geq$ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 39	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 39	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 39	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds $\geq$ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 39	27360	Water flow rate $\geq$ 3.5 gallons per minute of make up water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Make up water is defined as municipal tap water added to the recirculated water stream. This includes municipal tap water that has been used previously in cooling tower processes. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 39	27370	Water flow rate $\geq$ 25.0 gallons per minute of recirculated water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Recirculated water is defined as water used within the scrubber to capture emissions that is recirculated to smoke/water interface with a pump. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 39	27530	Recordkeeping of Water Flow Rates: The Permittee must record the time and date of each water flow rate reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 39	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rates are below the required rates; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rates to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 39	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 39	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rates as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 39	27565	The Permittee must calibrate or replace the flow rate monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
TREA 39	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 40	17610	The Permittee must vent emissions from EQUIs 60, 76, and 118 to TREA 40 whenever EQUIs 60, 76, and 118 operate. The Permittee must document periods of non-operation of the control equipment TREA 40 whenever EQUIs 60, 76, and 118 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 40	17615	If the Permittee replaces TREA 40, the replacement control must meet or exceed the control efficiency requirements of TREA 40 as well as comply with all other requirements of TREA 40. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 40	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter $\geq$ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 40	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 40	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron $\geq$ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 40	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds $\geq$ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 40	27360	Water flow rate $\geq$ 3.5 gallons per minute of make up water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Make up water is defined as municipal tap water added to the recirculated water stream. This includes municipal tap water that has been used previously in cooling tower processes. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 40	27370	Water flow rate $\geq$ 25.0 gallons per minute of recirculated water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Recirculated water is defined as water used within the scrubber to capture emissions that is recirculated to smoke/water interface with a pump. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 40	27530	Recordkeeping of Water Flow Rates: The Permittee must record the time and date of each water flow rate reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 40	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rates are below the required rates; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rates to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 40	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 40	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rates as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 40	27565	The Permittee must calibrate or replace the flow rate monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 40	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 41	17610	The Permittee must vent emissions from EQUIs 61, 76, and 80 to TREA 41 whenever EQUIs 61, 76, and 80 operate. The Permittee must document periods of non-operation of the control equipment TREA 41 whenever EQUIs 61, 76, and 80 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 41	17615	If the Permittee replaces TREA 41 the replacement control must meet or exceed the control efficiency requirements of TREA 41 as well as comply with all other requirements of TREA 41. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 41	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 41	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 41	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 41	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds ≥ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 41	27360	Water flow rate $\geq$ 3.5 gallons per minute of make up water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Make up water is defined as municipal tap water added to the recirculated water stream. This includes municipal tap water that has been used previously in cooling tower processes. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 41	27370	Water flow rate $\geq$ 25.0 gallons per minute of recirculated water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Recirculated water is defined as water used within the scrubber to capture emissions that is recirculated to smoke/water interface with a pump. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 41	27530	Recordkeeping of Water Flow Rates: The Permittee must record the time and date of each water flow rate reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 41	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rates are below the required rates; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rates to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 41	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 41	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rates as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 41	27565	The Permittee must calibrate or replace the flow rate monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 41	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must 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 42	17610	The Permittee must vent emissions from EQUIs 56, 68, and 119 to TREA 42 whenever EQUIs 56, 68, and 119 operate. The Permittee must document periods of non-operation of the control equipment TREA 42 whenever EQUIs 56, 68, and 119 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 42	17615	If the Permittee replaces TREA 42, the replacement control must meet or exceed the control efficiency requirements of TREA 42 as well as comply with all other requirements of TREA 42. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 42	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 42	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 42	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 42	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds ≥ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 42	27360	Water flow rate ≥ 3.5 gallons per minute of make up water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Make up water is defined as municipal tap water added to the recirculated water stream. This includes municipal tap water that has been used previously in cooling tower processes. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 42	27370	Water flow rate ≥ 25.0 gallons per minute of recirculated water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Recirculated water is defined as water used within the scrubber to capture emissions that is recirculated to smoke/water interface with a pump. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 42	27530	Recordkeeping of Water Flow Rates: The Permittee must record the time and date of each water flow rate reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 42	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rates are below the required rates; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rates to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 42	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 42	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rates as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 42	27565	The Permittee must calibrate or replace the flow rate monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 42	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 43	17610	The Permittee must vent emissions from EQUIs 57, 68, and 69 to TREA 43 whenever EQUIs 57, 68, and 69 operate. The Permittee must document periods of non-operation of the control equipment TREA 43 whenever EQUIs 57, 68, and 69 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 43	17615	If the Permittee replaces TREA 43, the replacement control must meet or exceed the control efficiency requirements of TREA 43 as well as comply with all other requirements of TREA 43 Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 43	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 43	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 43	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 43	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds ≥ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 43	27360	Water flow rate $\geq$ 3.5 gallons per minute of make up water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Make up water is defined as municipal tap water added to the recirculated water stream. This includes municipal tap water that has been used previously in cooling tower processes. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 43	27370	Water flow rate $\geq$ 25.0 gallons per minute of recirculated water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Recirculated water is defined as water used within the scrubber to capture emissions that is recirculated to smoke/water interface with a pump. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 43	27530	Recordkeeping of Water Flow Rates: The Permittee must record the time and date of each water flow rate reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 43	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rates are below the required rates; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rates to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 43	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 43	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rates as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 43	27565	The Permittee must calibrate or replace the flow rate monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 43	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must 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 44	17610	The Permittee must vent emissions from EQUIs 58, 69, and 119 to TREA 44 whenever EQUIs 58, 69, and 119 operate. The Permittee must document periods of non-operation of the control equipment TREA 44 whenever EQUIs 58, 69, and 119 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 44	17615	If the Permittee replaces TREA 44, the replacement control must meet or exceed the control efficiency requirements of TREA 44 as well as comply with all other requirements of TREA 44. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 44	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 44	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 44	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 44	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds ≥ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 44	27360	Water flow rate ≥ 3.5 gallons per minute of make up water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Make up water is defined as municipal tap water added to the recirculated water stream. This includes municipal tap water that has been used previously in cooling tower processes. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 44	27370	Water flow rate ≥ 25.0 gallons per minute of recirculated water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Recirculated water is defined as water used within the scrubber to capture emissions that is recirculated to smoke/water interface with a pump. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 44	27530	Recordkeeping of Water Flow Rates: The Permittee must record the time and date of each water flow rate reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
		Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rates are below the required rates; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rates to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 44	27540	
TREA 44	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 44	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rates as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 44	27565	The Permittee must calibrate or replace the flow rate monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 44	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 45	17610	The Permittee must vent emissions from EQUIs 59, 69 and 76 to TREA 45 whenever EQUI 59, 69 and 76 operate. The Permittee must document periods of non-operation of the control equipment TREA 45 whenever EQUIs 59, 69 and 76 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 45	17615	If the Permittee replaces TREA 45, the replacement control must meet or exceed the control efficiency requirements of TREA 45 as well as comply with all other requirements of TREA 45. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 45	27320	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 45	27330	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 45	27340	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 45	27350	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Volatile Organic Compounds ≥ 95 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
TREA 45	27360	Water flow rate $\geq$ 3.5 gallons per minute of make up water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Make up water is defined as municipal tap water added to the recirculated water stream. This includes municipal tap water that has been used previously in cooling tower processes. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 45	27370	Water flow rate $\geq$ 25.0 gallons per minute of recirculated water as determined during the 7/6/2021 performance test, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. Recirculated water is defined as water used within the scrubber to capture emissions that is recirculated to smoke/water interface with a pump. The Permittee must record the water flow rate at least once every 24 hours when in operation. If the recorded flow rate is below the minimum flow rate limit, the emissions during that time must be considered uncontrolled until the flow rate is once again above the minimum flow rate limit. The period of time for which the flow rate is below the minimum limit must be reported as a deviation, as defined by Minn. R. 7007.0100, subp. 8a. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 45	27530	Recordkeeping of Water Flow Rates: The Permittee must record the time and date of each water flow rate reading, and whether or not the recorded values were within the ranges specified in this permit. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 45	27540	Corrective Actions: The Permittee must take corrective action as soon as possible if any of the following occur: - the recorded flow rates are below the required rates; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions must return the water flow rates to within the permitted range(s), 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 Operation and Maintenance (O & M) Plan for the scrubber. The Permittee must keep a record of the type and date of any corrective action taken for each scrubber. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 45	27550	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee must inspect the control equipment components. The Permittee must maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
TREA 45	27560	Monitoring Equipment: The Permittee must install and maintain the necessary monitoring equipment for measuring and recording water flow rates as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 45	27565	The Permittee must calibrate or replace the flow rate monitors at least once every 12 months and must maintain a written record of any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 45	27570	The Permittee must operate and maintain the scrubber in accordance with the O & M Plan. The Permittee must 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 46	16440	The Permittee must vent emissions from EQUI 14 and EQUI 113 to TREA 46 whenever EQUI 14 and EQUI 113 operate. The Permittee must document periods of non-operation of the control equipment TREA 46 whenever EQUI 14 and EQUI 113 are operating. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	16450	If the Permittee replaces TREA 46, the replacement control must meet or exceed the control efficiency requirements of TREA 46 as well as comply with all other requirements of TREA 46. Prior to making such a change, the Permittee must apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee must 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. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	17420	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter ≥ 94 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	17430	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	17440	The Permittee must operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron ≥ 84 percent control efficiency. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	17445	Pressure Drop ≥ 2.0 and ≤ 8.0 inches of water, 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 follow up compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. If the recorded pressure drop is outside the required range, the emissions during that time must be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range must be reported as a deviation. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	17448	Water flow rate ≥ 80.0 gallons per minute, unless a new limit 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 limit shall be implemented upon receipt of the follow up compliance letter granting preliminary approval. The limit is final upon issuance of a permit amendment incorporating the change. If the recorded water flow rate is below the Water Flow Rate Limit, the emissions during that time must be considered uncontrolled until the water flow rate is above the Water Flow Rate Limit. The period of time for which emissions are considered uncontrolled must be reported as a deviation. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	17460	Daily Inspections: The Permittee shall do the following, once every 24 hours: 1). Read and record the scrubber liquid flow rate; and 2). Read and record the gas pressure drop across the scrubber. [40 CFR 64.3, 40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	17470	Recordkeeping of Pressure Drop and Water Flow Rate: The Permittee shall record the time and date of each pressure drop reading, water flow rate reading, and water supply pressure reading, and whether or not the observed value was within the range specified in this permit. Recorded values outside any range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [40 CFR 64.9(b), Minn. R. 7017.0200, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TREA 46	17480	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop, water flow rate, and water supply pressure as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored scrubber is in operation. [40 CFR 64.7(b), Minn. R. 7017.0200]
TREA 46	17490	The Permittee shall calibrate the gauges at least once every 12 months and shall maintain a written record of any action resulting from the calibration. [40 CFR 64.3, Minn. R. 7017.0200]

SI Id	Sequence	Requirement
TREA 46	17501	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [40 CFR 64.3, Minn. R. 7017.0200]
TREA 46	17510	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded water flow rate is below the water flow rate limit; or - the recorded pressure drop is outside the required operating range; or - the scrubber or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop and/or water flow rate 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 scrubber. The Permittee shall keep a record of the type and date of any corrective action taken for the scrubber. [40 CFR 64.7(d), Minn. R. 7017.0200]
TREA 46	18000	The Permittee must operate and maintain the scrubber in accordance with the Operation and Maintenance (O & M) Plan. The Permittee must keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]

TSD Attachment 3

CAM Plan

Hormel Foods Corporation

December 2017

CAM Submittal
Hormel Foods Corporation
December 2017

I. Background

A. Emission Unit

Description:	Hog Hair Hydrolizer
Identification:	EQUI101
APCD ID:	TREA23, Regenerative Thermal Oxidizer TREA33, Packed-Gas Adsorption Column
Facility:	Austin, Minnesota

B. Applicable Regulation, Emissions Limit, and Monitoring Requirements

Regulation: Title I Condition: To limit potential PM, PM₁₀, PM_{2.5} and VOC emissions to less than major source levels as defined by 40 CFR 52.21; Minn. R. 7007.3000; meets requirements of Minn. R. 7011.0715, subp. 1(A)

Emissions Limits:

Emission limits are at the stack vent level. Below are the limits for STRU23.

Particulate Matter (PM):	3.0 lb/hr
PM ₁₀ :	18.0 lb/hr
PM _{2.5} :	18.0 lb/hr
VOC:	0.99 lb/hr

Monitoring Requirements: Regenerative thermal oxidizer (TREA23) combustion chamber temperature, quarterly control equipment inspections; and annual burner inspections.

Packed-gas adsorption column (TREA33) pressure differential, water flow rate and quarterly inspections.

C. Control Technology:

Regenerative Thermal Oxidizer, Packed-Gas Adsorption Column

II. Monitoring Approach:

The key elements of the monitoring approach are presented in the table below:

Regenerative Thermal Oxidizer (TREA23)

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
I. Indicator Measurement Approach	Combustion chamber temperature	Work practice	Work practice	Work practice
	The combustion chamber temperature is monitored with a temperature probe.	Inspection and maintenance of the burner as recommended by the manufacturer.	Quarterly control equipment component inspections.	Calibration or replacement of the gauges.
II. Indicator Range	A deviation is defined as temperature readings less than 1350 deg F. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as failure to perform annual inspection.	A deviation is defined as failure to perform inspection quarterly or at the frequency prescribed by the manufacturer.	A deviation is defined as failure to calibrate or replace the gauges at least once every 12 months.
Performance Criteria a. Data Representativeness	The sensor is located in the incinerator chamber as in integral part of the design. The minimum tolerance of the temperature probe is ± 2.5 deg C or ± 4.5 deg F.	Not applicable	Not applicable	Not applicable
b. Verification of Operational Status	Not applicable	Not applicable	Not applicable	Not applicable
c. QA/QC Practices and Criteria	Calibration or replacement of the temperature monitoring device shall be done at least once a year.	Not applicable	Not applicable	Not applicable
d. Monitoring Frequency	Measured continuously. "Continuous" or continuously" means to measure and record at least one data point in every 15-minute block time interval starting on the hour.	Annual inspection of the burner.	Inspection of the control equipment components quarterly or at the frequency prescribed by the manufacturer.	Calibrate or replace the gauges once every 12 months.

Data Collection Procedures	Shall maintain on site a record of the temperature in the combustion chamber when the thermal oxidizer is in operation. The record may be in the form of electronic computer files or in the form of a chart recording.	Record results of annual inspection.	Record results quarterly or at the frequency prescribed by the manufacturer.	Record any action resulting from the calibration or replacement.
Averaging Period	3-Hour Rolling Average.	Not applicable	Not applicable	Not applicable

Packed-Gas Adsorption Column (TREA33)

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Work practice
I. Indicator Measurement Approach	Pressure Differential	Water Flow Rate	Work practice	Work practice
II. Indicator Range	A deviation is defined as pressure differential less than 0.5 inches wc. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as a water flow rate less than 500 gal/min. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as failure to perform inspection quarterly or at the frequency prescribed by the manufacturer.	A deviation is defined as failure to calibrate or replace the gauges at least once every 12 months.
Performance Criteria				
a. Data Representativeness	Not applicable	Not applicable	Not applicable	Not applicable
b. Verification of Operational Status	The monitoring equipment must be in use and properly maintained when TREA33 is in operation	The monitoring equipment must be in use and properly maintained when TREA33 is in operation	Not applicable	Not applicable
c. QA/QC Practices and Criteria	Not applicable	Not applicable	Not applicable	Not applicable
d. Monitoring Frequency	Instantaneous. The pressure differential is recorded once each day when in operation.	Instantaneous. The water flow rate is recorded once each day when in operation.	Inspection of the control equipment components quarterly or at the frequency prescribed by the manufacturer.	Calibrate or replace the gauges once every 12 months.
Data Collection Procedures	The operator records the pressure drop and whether or not the reading was within the range specified once per day when in operation.	The operator records the water flow rate and whether or not the reading was within the range specified once per day when in operation.	Record results quarterly or at the frequency prescribed by the manufacturer.	Record any action resulting from the calibration or replacement.
Averaging Period	No average is taken.	No average is taken	Not applicable	Not applicable

III. Basis and Implementation

The proposed monitoring approach is based on the currently applicable requirements.

The data listed in the monitoring approach is already addressed in the current permit and the facility air pollution control equipment maintenance plan.

IV. Rationale for Selection of Indicator Ranges

The incinerator chamber temperature was selected because it is indicative of a thermal incinerator operation. If the chamber decreases significantly, complete combustion may not occur.

The work practice comprised of an annual inspection and tuning of the incinerator burner was selected because an inspection verifies equipment integrity and periodic tuning will maintain proper burner operation and efficiency.

Indicator specified minimum values for the pressure differential and water flow rate for the packed-gas adsorption column have been developed based on the manufacturer's design operating guidelines.

CAM Submittal
Hormel Foods Corporation
December 2017

I. Background

A. Emission Unit

Description:	Blood Dryer
Identification:	EQUI15
APCD ID:	TREA23, Regenerative Thermal Oxidizer TREA27, Venturi Scrubber TREA33, Packed-Gas Adsorption Column
Facility:	Austin, Minnesota

B. Applicable Regulation, Emissions Limit, and Monitoring Requirements

Regulation: Title I Condition: To limit potential PM, PM₁₀, PM_{2.5} and VOC emissions to less than major source levels as defined by 40 CFR 52.21; Minn. R. 7007.3000; meets requirements of Minn. R. 7011.0715, subp. 1(A)

Emissions Limits:

Emission limits are at the stack vent level. Below are the limits for STRU23.

Particulate Matter (PM):	3.0 lb/hr
PM ₁₀ :	18.0 lb/hr
PM _{2.5} :	18.0 lb/hr
VOC:	0.99 lb/hr

Monitoring Requirements: Regenerative thermal oxidizer (TREA23) combustion chamber temperature, quarterly control equipment inspections; and annual burner inspections.

Venturi scrubber (TREA31) pressure differential, water flow rate and quarterly inspections.

Packed-gas adsorption column (TREA33) pressure differential, water flow rate and quarterly inspections.

C. Control Technology:

Regenerative Thermal Oxidizer, Venturi Scrubber, Packed-Gas Adsorption Column

II. Monitoring Approach:

The key elements of the monitoring approach are presented in the table below:

Regenerative Thermal Oxidizer (TREA23)

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
I. Indicator Measurement Approach	Combustion chamber temperature	Work practice	Work practice	Work practice
	The combustion chamber temperature is monitored with a temperature probe.	Inspection and maintenance of the burner as recommended by the manufacturer.	Quarterly control equipment component inspections.	Calibration or replacement of the gauges.
II. Indicator Range	A deviation is defined as temperature readings less than 1350 deg F. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as failure to perform annual inspection.	A deviation is defined as failure to perform inspection quarterly or at the frequency prescribed by the manufacturer.	A deviation is defined as failure to calibrate or replace the gauges at least once every 12 months.
Performance Criteria a. Data Representativeness	The sensor is located in the incinerator chamber as in integral part of the design. The minimum tolerance of the temperature probe is ± 2.5 deg C or ± 4.5 deg F.	Not applicable	Not applicable	Not applicable
b. Verification of Operational Status	Not applicable	Not applicable	Not applicable	Not applicable
c. QA/QC Practices and Criteria	Calibration or replacement of the temperature monitoring device shall be done at least once a year.	Not applicable	Not applicable	Not applicable
d. Monitoring Frequency	Measured continuously. "Continuous" or continuously" means to measure and record at least one data point in every 15-minute block time interval starting on the hour.	Annual inspection of the burner.	Inspection of the control equipment components quarterly or at the frequency prescribed by the manufacturer.	Calibrate or replace the gauges once every 12 months.

Data Collection Procedures	Shall maintain on site a record of the temperature in the combustion chamber when the thermal oxidizer is in operation. The record may be in the form of electronic computer files or in the form of a chart recording.	Record results of annual inspection.	Record results quarterly or at the frequency prescribed by the manufacturer.	Record any action resulting from the calibration or replacement.
Averaging Period	3-Hour Rolling Average.	Not applicable	Not applicable	Not applicable

Venturi Scrubber (TREA27)

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
I. Indicator Measurement Approach	Pressure Differential	Water Flow Rate	Work practice	Work practice
II. Indicator Range	A deviation is defined as pressure differential less than 5 inches wc. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as a water flow rate less than 10 gal/min. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as failure to perform inspection quarterly or at the frequency prescribed by the manufacturer.	A deviation is defined as failure to calibrate or replace the gauges at least once every 12 months.
Performance Criteria				
a. Data Representativeness	Not applicable	Not applicable	Not applicable	Not applicable
b. Verification of Operational Status	The monitoring equipment must be in use and properly maintained when TREA27 is in operation	The monitoring equipment must be in use and properly maintained when TREA27 is in operation	Not applicable	Not applicable
c. QA/QC Practices and Criteria	Not applicable	Not applicable	Not applicable	Not applicable
d. Monitoring Frequency	Instantaneous. The pressure differential is recorded once each 24-hour period when in operation.	Instantaneous. The water flow rate is recorded once each 24-hour period when in operation.	Inspection of the control equipment components quarterly or at the frequency prescribed by the manufacturer.	Calibrate or replace the gauges once every 12 months.
Data Collection Procedures	The operator records the pressure drop and whether or not the reading was within the range specified once per 24-hour period when in operation.	The operator records the water flow rate and whether or not the reading was within the range specified once per 24-hour period when in operation.	Record results quarterly or at the frequency prescribed by the manufacturer.	Record any action resulting from the calibration or replacement.
Averaging Period	No average is taken	No average is taken	Not applicable	Not applicable

Packed-Gas Adsorption Column (TREA33)

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Work practice
I. Indicator Measurement Approach	Pressure Differential	Water Flow Rate	Work practice	Work practice
II. Indicator Range	A deviation is defined as pressure differential less than 0.5 inches wc. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as a water flow rate less than 500 gal/min. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as failure to perform inspection quarterly or at the frequency prescribed by the manufacturer.	A deviation is defined as failure to calibrate or replace the gauges at least once every 12 months.
Performance Criteria				
a. Data Representativeness	Not applicable	Not applicable	Not applicable	Not applicable
b. Verification of Operational Status	The monitoring equipment must be in use and properly maintained when TREA33 is in operation	The monitoring equipment must be in use and properly maintained when TREA33 is in operation	Not applicable	Not applicable
c. QA/QC Practices and Criteria	Not applicable	Not applicable	Not applicable	Not applicable
d. Monitoring Frequency	Instantaneous. The pressure differential is recorded once each day when in operation.	Instantaneous. The water flow rate is recorded once each day when in operation.	Inspection of the control equipment components quarterly or at the frequency prescribed by the manufacturer.	Calibrate or replace the gauges once every 12 months.
Data Collection Procedures	The operator records the pressure drop and whether or not the reading was within the range specified once per day when in operation.	The operator records the water flow rate and whether or not the reading was within the range specified once per day when in operation.	Record results quarterly or at the frequency prescribed by the manufacturer.	Record any action resulting from the calibration or replacement.
Averaging Period	No average is taken.	No average is taken	Not applicable	Not applicable

III. Basis and Implementation

The proposed monitoring approach is based on the currently applicable requirements.

The data listed in the monitoring approach is already addressed in the current permit and the facility air pollution control equipment maintenance plan.

IV. Rationale for Selection of Indicator Ranges

The incinerator chamber temperature was selected because it is indicative of a thermal incinerator operation. If the chamber decreases significantly, complete combustion may not occur.

The work practice comprised of an annual inspection and tuning of the incinerator burner was selected because an inspection verifies equipment integrity and periodic tuning will maintain proper burner operation and efficiency.

Indicator specified minimum values for the pressure differential and water flow rate for the venturi scrubber have been developed based on the manufacturer's design operating guidelines.

Indicator specified minimum values for the pressure differential and water flow rate for the packed-gas adsorption column have been developed based on the manufacturer's design operating guidelines.

CAM Submittal
Hormel Foods Corporation
December 2017

I. Background

A. Emission Unit

Description:	Refined Products Machinery
Identification:	EQUI71
APCD ID:	TREA23, Regenerative Thermal Oxidizer TREA31, Venturi Scrubber TREA33, Packed-Gas Adsorption Column
Facility:	Austin, Minnesota

B. Applicable Regulation, Emissions Limit, and Monitoring Requirements

Regulation:	Title I Condition: To limit potential PM, PM ₁₀ , PM _{2.5} and VOC emissions to less than major source levels as defined by 40 CFR 52.21; Minn. R. 7007.3000; meets requirements of Minn. R. 7011.0715, subp. 1(A)

Emissions Limits:

Particulate Matter (PM):	2.11 lb/hr
PM ₁₀ :	17.12 lb/hr
PM _{2.5} :	16.99 lb/hr
VOC:	0.99 lb/hr

Monitoring Requirements:	Regenerative thermal oxidizer (TREA23) combustion chamber temperature, quarterly control equipment inspections; and annual burner inspections.
	Venturi scrubber (TREA31) pressure differential, water flow rate and quarterly inspections.
	Packed-gas adsorption column (TREA33) pressure differential, water flow rate and quarterly inspections.

C. Control Technology:

Regenerative Thermal Oxidizer, Venturi Scrubber, Packed-Gas Adsorption Column

II. Monitoring Approach:

The key elements of the monitoring approach are presented in the table below:

Regenerative Thermal Oxidizer (TREA23)

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
I. Indicator Measurement Approach	Combustion chamber temperature	Work practice	Work practice	Work practice
	The combustion chamber temperature is monitored with a temperature probe.	Inspection and maintenance of the burner as recommended by the manufacturer.	Quarterly control equipment component inspections.	Calibration or replacement of the gauges.
II. Indicator Range	A deviation is defined as temperature readings less than 1350 deg F. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as failure to perform annual inspection.	A deviation is defined as failure to perform inspection quarterly or at the frequency prescribed by the manufacturer.	A deviation is defined as failure to calibrate or replace the gauges at least once every 12 months.
Performance Criteria a. Data Representativeness	The sensor is located in the incinerator chamber as in integral part of the design. The minimum tolerance of the temperature probe is ± 2.5 deg C or ± 4.5 deg F.	Not applicable	Not applicable	Not applicable
b. Verification of Operational Status	Not applicable	Not applicable	Not applicable	Not applicable
c. QA/QC Practices and Criteria	Calibration or replacement of the temperature monitoring device shall be done at least once a year.	Not applicable	Not applicable	Not applicable
d. Monitoring Frequency	Measured continuously. "Continuous" or continuously" means to measure and record at least one data point in every 15-minute block time interval starting on the hour.	Annual inspection of the burner.	Inspection of the control equipment components quarterly or at the frequency prescribed by the manufacturer.	Calibrate or replace the gauges once every 12 months.

Data Collection Procedures	Shall maintain on site a record of the temperature in the combustion chamber when the thermal oxidizer is in operation. The record may be in the form of electronic computer files or in the form of a chart recording.	Record results of annual inspection.	Record results quarterly or at the frequency prescribed by the manufacturer.	Record any action resulting from the calibration or replacement.
Averaging Period	3-Hour Rolling Average.	Not applicable	Not applicable	Not applicable

Venturi Scrubber (TREA31)

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
I. Indicator Measurement Approach	Pressure Differential	Water Flow Rate	Work practice	Work practice
II. Indicator Range	A deviation is defined as pressure differential less than 4 inches wc. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as a water flow rate less than 50 gal/min. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as failure to perform inspection quarterly or at the frequency prescribed by the manufacturer.	A deviation is defined as failure to calibrate or replace the gauges at least once every 12 months.
Performance Criteria				
a. Data Representativeness	Not applicable	Not applicable	Not applicable	Not applicable
b. Verification of Operational Status	The monitoring equipment must be in use and properly maintained when TREA31 is in operation	The monitoring equipment must be in use and properly maintained when TREA31 is in operation	Not applicable	Not applicable
c. QA/QC Practices and Criteria	Not applicable	Not applicable	Not applicable	Not applicable
d. Monitoring Frequency	Instantaneous. The pressure differential is recorded once each 24-hour period when in operation.	Instantaneous. The water flow rate is recorded once each 24-hour period when in operation.	Inspection of the control equipment components quarterly or at the frequency prescribed by the manufacturer.	Calibrate or replace the gauges once every 12 months.
Data Collection Procedures	The operator records the pressure drop and whether or not the reading was within the range specified once per 24-hour period when in operation.	The operator records the water flow rate and whether or not the reading was within the range specified once per 24-hour period when in operation.	Record results quarterly or at the frequency prescribed by the manufacturer.	Record any action resulting from the calibration or replacement.
Averaging Period	No average is taken	No average is taken	Not applicable	Not applicable

Packed-Gas Adsorption Column (TREA33)

	Indicator No. 1	Indicator No. 2	Indicator No. 3	Work practice
I. Indicator Measurement Approach	Pressure Differential	Water Flow Rate	Work practice	Work practice
II. Indicator Range	A deviation is defined as pressure differential less than 0.5 inches wc. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as a water flow rate less than 500 gal/min. Deviations trigger an inspection, corrective action, and a reporting requirement.	A deviation is defined as failure to perform inspection quarterly or at the frequency prescribed by the manufacturer.	A deviation is defined as failure to calibrate or replace the gauges at least once every 12 months.
Performance Criteria				
a. Data Representativeness	Not applicable	Not applicable	Not applicable	Not applicable
b. Verification of Operational Status	The monitoring equipment must be in use and properly maintained when TREA33 is in operation	The monitoring equipment must be in use and properly maintained when TREA33 is in operation	Not applicable	Not applicable
c. QA/QC Practices and Criteria	Not applicable	Not applicable	Not applicable	Not applicable
d. Monitoring Frequency	Instantaneous. The pressure differential is recorded once each day when in operation.	Instantaneous. The water flow rate is recorded once each day when in operation.	Inspection of the control equipment components quarterly or at the frequency prescribed by the manufacturer.	Calibrate or replace the gauges once every 12 months.
Data Collection Procedures	The operator records the pressure drop and whether or not the reading was within the range specified once per day when in operation.	The operator records the water flow rate and whether or not the reading was within the range specified once per day when in operation.	Record results quarterly or at the frequency prescribed by the manufacturer.	Record any action resulting from the calibration or replacement.
Averaging Period	No average is taken.	No average is taken	Not applicable	Not applicable

III. Basis and Implementation

The proposed monitoring approach is based on the currently applicable requirements.

The data listed in the monitoring approach is already addressed in the current permit and the facility air pollution control equipment maintenance plan.

IV. Rationale for Selection of Indicator Ranges

The incinerator chamber temperature was selected because it is indicative of a thermal incinerator operation. If the chamber decreases significantly, complete combustion may not occur.

The work practice comprised of an annual inspection and tuning of the incinerator burner was selected because an inspection verifies equipment integrity and periodic tuning will maintain proper burner operation and efficiency.

Indicator specified minimum values for the pressure differential and water flow rate for the venturi scrubber have been developed based on the manufacturer's design operating guidelines.

Indicator specified minimum values for the pressure differential and water flow rate for the packed-gas adsorption column have been developed based on the manufacturer's design operating guidelines.

TSD Attachment 4

Osceola Foods Stack Test Data

EMISSION TEST REPORT
for
Osceola Foods, LLC
on
Smoke Generator (RH09) and Scrubber
located in
Osceola, Iowa
October 22 and 23, 2015

Conducted by

Comprehensive Emission Services, Inc.
P.O. Box 910
Waukee, Iowa 50263
(515) 987-0200

Project No. 13915

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PREFACE

This report summarizes the results of the data collected for testing performed at the Osceola Foods, LLC plant in Osceola, Iowa. To the best of our knowledge, the data in this report are accurate and complete. Any questions concerning this report should be directed to Mr. Tim Titus or Mr. Doug Ostrander. They may be reached by phone at (515) 987-0200.

Doug Ostrander, QSTI
Test Leader

Tim Titus, QSTI
Reviewed by

November 6, 2015

INTRODUCTION

An emission test was conducted by Comprehensive Emission Services on the Smoke Generator (RH09) and Scrubber at the Osceola Foods, LLC plant in Osceola, Iowa. Method 5 with 202 backhalf particulate sampling runs; Method 9, Opacity runs; Method 320 (FTIR) runs and three Method 25A (VOC) runs were performed on this source. The testing was performed while wood or cobs were used in the units. The testing was performed on October 22 and 23, 2015.

Coordinating the field tests:

Tim Titus - Comprehensive Emission Services, Inc.
Larry Kjellsen - Osceola Foods, LLC
Coulter Wood - Hormel Foods Corporate Services, LLC

Conducting the field tests:

Jay Titus - Comprehensive Emission Services, Inc.
Ted Webb - Comprehensive Emission Services, Inc.
Taylor Dailey - Comprehensive Emission Services, Inc.
Mason Woltz - Comprehensive Emission Services, Inc.
Doug Ostrander - Comprehensive Emission Services, Inc.

The appendices to this report contain the following information and data:

Appendix A: Example Calculations
Appendix B: Laboratory Data Forms
Appendix C: Field Data Forms
Appendix D: Pretest Calibrations
Appendix E: Post-test Calibrations
Appendix F: Opacity Certification
Appendix G: CEM Data
Appendix H: Gas Protocols

SUMMARY OF RESULTS

Table 1 summarizes the test results for testing performed on the Smoke Generator (RH09) and Scrubber. Three Method 5 with 202 backhalf particulate sampling runs; three Method 9, Opacity runs; three Method 25A (VOC) runs and three Method 320 (FTIR) runs were performed on this source.

Table 1
Summary of Test Results
Smoke Generator (RH09) and Scrubber

Cobb	units	Run 1	Run 2	Run 3
PM Net Weight	g	0.3539	0.4658	0.4867
PM Emission	gr/dscf	0.0719	0.0822	0.1016
PM Emission Rate	lb/hr	0.26	0.34	0.35
Flow Rate	acfm	465	540	449
Flow Rate	dscfm	418	484	402
Isokinetics	%	99.6	99.1	101.0
Run Start Time	HH:MM	14:46	17:03	19:19
Run Stop Time	HH:MM	16:49	19:06	21:21
Date of Test	mm/dd/yr	10/22/15	10/22/15	10/22/15
Opacity	%	13.90	7.35	16.94
Run Start Time	HH:MM	14:35	15:38	17:03
Run Stop Time	HH:MM	15:35	16:38	18:03
Date of Test	mm/dd/yr	10/22/15	10/22/15	10/22/15
Formaldehyde Emissions	ppm	1.41	1.37	2.28
Formaldehyde Emission Rate	lb/hr	0.003	0.003	0.004
Ethylene Emissions	ppm	13.06	14.56	13.87
Ethylene Emission Rate	lb/hr	0.024	0.031	0.024
Ethane Emissions	ppm	25.14	30.36	23.74
Ethane Emission Rate	lb/hr	0.049	0.069	0.045
Acetaldehyde Emissions	ppm	14.67	14.15	11.44
Acetaldehyde Emission Rate	lb/hr	0.042	0.047	0.032
MeOH Emissions	ppm	23.10	30.19	26.32
MeOH Emission Rate	lb/hr	0.048	0.073	0.053
Acetic Acid Emissions	ppm	0.51	1.35	1.29
Acetic Acid Emission Rate	lb/hr	0.002	0.006	0.005
Phenol Emissions	ppm	0.13	0.13	0.13
Phenol Emission Rate	lb/hr	0.001	0.001	0.001
CH4 Emissions	ppm	244.31	269.64	199.79
CH4 Emission Rate	lb/hr	0.255	0.326	0.201
CO Emissions	ppm	1902.92	1964.51	1636.20
CO Emission Rate	lb/hr	3.469	4.146	2.868

Table 1 continued				
NO _x Emissions	ppm	3.41	3.58	1.87
NO _x Emission Rate	lb/hr	0.010	0.012	0.005
VOC Emissions	ppm	200.3	193.94	198.48
VOC Emission Rate	lb/hr	0.33	0.33	0.36
Flow Rate	dscfm	418	484	402
Run Start Time	HH:MM	14:45	17:01	19:19
Run Stop Time	HH:MM	16:49	19:06	21:17
Date of Test	mm/dd/yr	10/22/15	10/22/15	10/22/15

Table 2 summarizes the test results for testing performed on the Smoke Generator (RH09) and Scrubber. Two Method 5 with 202 backhalf particulate sampling runs; two Method 9, Opacity runs; two Method 25A (VOC) runs and two Method 320 (FTIR) runs were performed on this source.

Table 2
Summary of Test Results
Smoke Generator (RH09) and Scrubber

Wood	units	Run 1	Run 2
PM Net Weight	g	0.4530	0.4675
PM Emission	gr/dscf	0.1042	0.1014
PM Emission Rate	lb/hr	0.33	0.34
Flow Rate	acfm	410	446
Flow Rate	dscfm	372	390
Isokinetics	%	98.9	100.1
Run Start Time	HH:MM	11:02	13:07
Run Stop Time	HH:MM	13:03	15:10
Date of Test	mm/dd/yr	10/23/15	10/23/15
Opacity	%	16.77	16.52
Run Start Time	HH:MM	11:02	13:09
Run Stop Time	HH:MM	12:02	14:09
Date of Test	mm/dd/yr	10/23/15	10/23/15
Formaldehyde Emissions	ppm	1.14	2.86
Formaldehyde Emission Rate	lb/hr	0.002	0.005
Ethylene Emissions	ppm	10.40	10.79
Ethylene Emission Rate	lb/hr	0.017	0.018
Ethane Emissions	ppm	13.05	16.86
Ethane Emission Rate	lb/hr	0.023	0.031
Acetaldehyde Emissions	ppm	9.80	6.60
Acetaldehyde Emission Rate	lb/hr	0.025	0.018

Table 2 continued			
MeOH Emissions	ppm	15.96	34.90
MeOH Emission Rate	lb/hr	0.030	0.068
Acetic Acid Emissions	ppm	0.92	1.02
Acetic Acid Emission Rate	lb/hr	0.003	0.004
Phenol Emissions	ppm	0.13	0.13
Phenol Emission Rate	lb/hr	0.001	0.001
CH4 Emissions	ppm	173.06	221.35
CH4 Emission Rate	lb/hr	0.161	0.216
CO Emissions	ppm	1345.72	1647.12
CO Emission Rate	lb/hr	2.183	2.801
NO _x Emissions	ppm	2.50	4.56
NO _x Emission Rate	lb/hr	0.007	0.013
VOC Emissions	ppm	141.2	151.19
VOC Emission Rate	lb/hr	0.21	0.21
Flow Rate	dscfm	372	390
Run Start Time	HH:MM	10:46	13:13
Run Stop Time	HH:MM	13:01	15:09
Date of Test	mm/dd/yr	10/23/15	10/23/15

SAMPLING AND ANALYTICAL PROCEDURES

Sampling Procedures

Emissions were determined by U.S. Environmental Protection Agency (EPA) Methods 1, 2, 3, 4, 5, 202, 9, 25A and 320. These Methods are titled;

- Method 1 - "Sample and Velocity Traverse for Stationary Sources"
- Method 2 - "Determination of Stack Gas Velocity and Volumetric Flow Rate"
- Method 3 - "Gas Analysis for Carbon Dioxide, Oxygen, Excess Air and Dry Molecular Weight"
- Method 4 - "Determination for Moisture Content in Stack Gases"
- Method 5 - "Determination of Particulate Emissions from Stationary Sources"
- Method 202 - "Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources"
- Method 9 - "Visual Determination of the Opacity of Emissions From Stationary Sources"
- Method 25A - "Determination of total Gaseous Organic Concentration using a Flame Ionization Analyzer"
- Method 320 - "Vapor Phase Organic & Inorganic Emissions by Extractive FTIR"

These methods appear in detail in Title 40, Code of Federal Regulations (CFR), Part 60, Appendix A.

The Sampling Apparatus is shown in Figure 1 on Page 7. All equipment was calibrated at Comprehensive Emission Services' office prior to shipment to the test site.

Sampling Locations

The stack sampling point locations can be found along with the field data sheets in Appendix C.

Analytical Procedures

The particulate emission rate was determined following procedures detailed in EPA Methods 5 and 202.

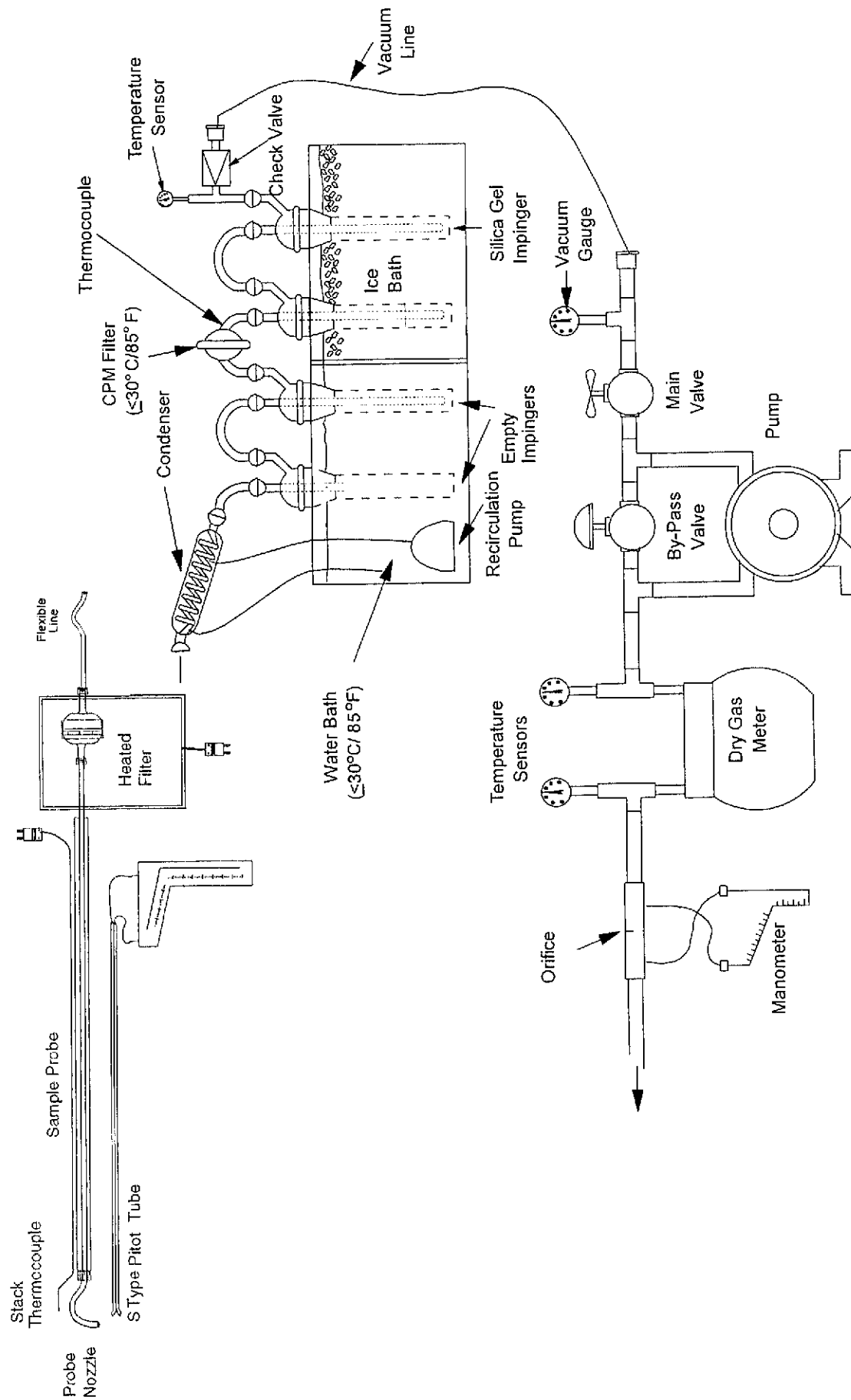


Figure 1. Schematic of Condensable Particulate Sampling Train

Table 3
Particulate Emission Results
Smoke Generator (RH09) and Scrubber

Parameters	Units	Run 1	Run 2	Run 3
PM Emissions				
Weight Collected	g	0.3539	0.4658	0.4867
Actual	gr/dscf	0.0719	0.0822	0.1016
Emission Rate	lb/hr	0.26	0.34	0.35
Stack Flow Rates				
Velocity	ft/min	592	688	571
Actual	acfm	465	540	449
Standard Conditions	dscfm	418	484	402
Sampling Results				
Isokinetics	%	99.6	99.1	101.0
Sample Volume	dscf	75.917	87.432	73.916
Ave. Stack Temperature	°F	87	88	88
Ave. ΔP	inches H ₂ O	0.0342	0.0442	0.0275
Ave. Square Root ΔP	inches H ₂ O	0.1690	0.1962	0.1628
Ave. ΔH	inches H ₂ O	1.32	1.78	1.28
Ave. Meter Temperature	°F	76.3	77.0	73.2
Oxygen	%	20.40	20.40	20.40
Carbon Dioxide	%	0.40	0.40	0.40
Moisture Collected	ml	148.0	160.0	146.0
Moisture	% H ₂ O	4.35	4.57	4.59
Sampling Time	minutes	120	120	120
Run Start Time	HH:MM	14:46	17:03	19:19
Run Stop Time	HH:MM	16:49	19:06	21:21
Date of Test	mm/dd/yr	10/22/15	10/22/15	10/22/15

Table 4
Particulate Emission Results
Smoke Generator (RH09) and Scrubber

Parameters	Units	Run 1	Run 2
PM Emissions			
Weight Collected	g	0.4530	0.4675
Actual	gr/dscf	0.1042	0.1014
Emission Rate	lb/hr	0.33	0.34
Stack Flow Rates			
Velocity	ft/min	522	567
Actual	acfm	410	446
Standard Conditions	dscfm	372	390
Sampling Results			
Isokinetics	%	98.9	100.1
Sample Volume	dscf	67.094	71.138
Ave. Stack Temperature	°F	82	92
Ave. ΔP	inches H ₂ O	0.0242	0.0275
Ave. Square Root ΔP	inches H ₂ O	0.1495	0.1603
Ave. ΔH	inches H ₂ O	1.13	1.27
Ave. Meter Temperature	°F	69.3	74.3
Oxygen	%	20.40	20.40
Carbon Dioxide	%	0.40	0.40
Moisture Collected	ml	92.0	139.0
Moisture	% H ₂ O	3.73	5.27
Sampling Time	minutes	120	120
Run Start Time	HH:MM	11:02	13:07
Run Stop Time	HH:MM	13:03	15:10
Date of Test	mm/dd/yr	10/23/15	10/23/15

Appendix A

Example Calculations

NOMENCLATURE

<u>Symbol</u>	<u>Description</u>
Q_a	Actual cubic feet per minute
A_s	Area of stack
B_{ws}	Percent water
C_p	Pitot tube calibration coefficient
C_{std}	Concentration of particulate dry basis, standard conditions
D_n	Diameter of nozzle
dscfm	Dry standard cubic feet per minute
g	Grams
gr/dscfm	Grains per dry standard cubic feet per minute
ID	Inside diameter of stack
M_d	Molecular weight, dry stack gas
M_s	Molecular weight, stack gas
Q_{std}	Stack flow rate, dry standard conditions
P_b	Barometric Pressure
P_s	Stack pressure
SP	Static pressure
T_m	Average meter temperature
T_s	Temperature of stack gas
V_i	Initial meter reading
V_f	Final meter reading
V_m	Volume meter, actual
$V_{m\ std}$	Volume meter, standard conditions
V_s	Average stack gas velocity
W_c	Total moisture collected
$W_{t\ gain}$	Total particulate matter collected
Y	Meter condition factor
θ	Sampling time
% H ₂ O	Percent moisture by volume
% CO ₂	Percent carbon dioxide by volume, dry
% O ₂	Percent oxygen by volume, dry
% I	Percent isokinetic
ΔH	Pressure drop across orifice meter
ΔP	Gas velocity pressure

PARTICULATE CALCULATION EQUATIONS

1. Volume of meter

$$V_m = (V_f - V_i) \times Y$$

$$V_m = (700.685 - 622.200) \times 1.005$$

$$V_m = 78.877 \text{ ft}^3$$

2. Volume of meter, standard conditions (68°, 29.92 in. Hg)

$$V_{m(std)} = \frac{17.65 \times V_m \times \left(P_b + \frac{\Delta H}{13.6} \right)}{T_m + 460}$$

$$V_{m(std)} = \frac{17.65 \times 78.877 \times \left(29.15 + \frac{1.32}{13.6} \right)}{76.3 + 460}$$

$$V_{m(std)} = 75.917 \text{ ft}^3$$

3. Percent moisture by volume

$$B_{ws} = \frac{100 \times 0.04707 \times W_c}{0.04707 \times W_c + V_{m(std)}}$$

$$B_{ws} = \frac{100 \times 0.04707 \times 148.0}{0.04707 \times 148.0 + 75.917}$$

$$B_{ws} = 4.35 \%$$

4. Molecular weight, dry stack gas

$$M_d = 0.16 \times \%CO_2 + 0.04 \times \%O_2 + 28.0$$

$$M_d = 0.16 \times 0.40 + 0.04 \times 20.40 + 28.0$$

$$M_d = 28.88$$

5. Molecular weight, stack gas

$$M_s = M_d \times \left(1 - \frac{B_{ws}}{100}\right) + 18 \times \left(\frac{B_{ws}}{100}\right)$$

$$M_s = 28.88 \times \left(1 - \frac{4.35}{100}\right) + 18 \times \left(\frac{4.35}{100}\right)$$

$$M_s = 28.41$$

6. Stack Pressure

$$P_s = P_b + \frac{SP}{13.6}$$

$$P_s = 29.15 + \frac{0.00}{13.6}$$

$$P_s = 29.15 \text{ inch Hg}$$

7. Velocity of stack gas

$$V_s = 60 \times 85.49 \times C_p \times \sqrt{\frac{T_s + 460}{P_s \times M_s}} \times (\sqrt{\Delta p})_{avg}$$

$$V_s = 60 \times 85.49 \times 0.84 \times \sqrt{\frac{587 + 460}{29.15 \times 28.15}} \times 0.1690$$

$$V_s = 592 \text{ ft/min}$$

8. Percent isokinetic

$$\%I = \frac{100 \times (T_s + 460) \times V_{m(std)}}{17.65 \times \theta \times V_s \times P_s \times \left(1 - \frac{B_{ws}}{100}\right) \times \pi \times \left(\frac{D_n}{24}\right)^2}$$

$$\%I = \frac{100 \times (87 + 460) \times 75.917}{17.65 \times 120 \times 592 \times 29.15 \times \left(1 - \frac{4.35}{100}\right) \times \pi \times \left(\frac{0.467}{24}\right)^2}$$

$$\%I = 99.6$$

9. Area of stack

$$A_s = \pi \times \left(\frac{ID}{24} \right)^2$$

$$A_s = \pi \times \left(\frac{12.00}{24} \right)^2$$

$$A_s = 0.79 \text{ ft}^2$$

10. Stack volumetric flow rate actual conditions

$$Q_a = V_s \times A_s$$

$$Q_a = 592 \times 0.79$$

$$Q_a = 465 \text{ acfm}$$

11. Stack volumetric flowrate, standard conditions (68°, 29.92 in.Hg)

$$Q_{std} = \frac{17.65 \times V_s \times A_s \times P_s \times \left(1 - \frac{B_{ws}}{100} \right)}{T_s + 460}$$

$$Q_{std} = \frac{17.65 \times 592 \times 0.79 \times 29.15 \times \left(1 - \frac{1.32}{100} \right)}{87 + 460}$$

$$Q_{std} = 418 \text{ dscfm}$$

12. Grains per dry standard cubic feet

$$C_{std} = \frac{15.43 \times Wt_{gain}}{V_{m(std)}}$$

$$C_{std} = \frac{15.43 \times 0.3539}{75.917}$$

$$C_{std} = 0.0719 \text{ gr/dscf}$$

13. Emission rate lb/hr

$$\frac{\text{lb}}{\text{hr}} = \frac{60 \times W_{\text{gain}} \times Q_{\text{std}}}{453.5924 \times V_{m(\text{std})}}$$

$$\frac{\text{lb}}{\text{hr}} = \frac{60 \times 0.3539 \times 418}{453.5924 \times 75.917}$$

$$\frac{\text{lb}}{\text{hr}} = 0.26 \text{ lb/hr}$$

Appendix B

Laboratory Data Forms

Project Number: 11915
 Plant Name: Oscorla Foods
 Date: 10-29-15
 Analysis Type: 5/20

RH09 C06

Run 1				
Type	Identification Number	Final Weight	Tare Weight	Net Weight
Filter	F3312	3.0644	2.8835	.1809
Probe Rinse	B6414A	64.2139	64.1931	.0208
Front Half Weight				.2017
Organic Container 2 Acetone Hexane	H559	4.3736	4.3506	.0230
Inorganic Container 1 H ₂ O	C5942	103.9511	103.8219	.1292
Total Net Weight				.3539
Run 2				
Type	Identification Number	Final Weight	Tare Weight	Net Weight
Filter	F3313	3.0385	2.8646	.1739
Probe Rinse	B6145A	75.2412	75.2092	.0320
Front Half Weight				.2059
Organic Container 2 Acetone Hexane	H560	4.3595	4.3377	.0218
Inorganic Container 1 H ₂ O	C5943	103.5806	103.3425	.2381
Total Net Weight				.4658
Run 3				
Type	Identification Number	Final Weight	Tare Weight	Net Weight
Filter	F3314	3.0636	2.8999	.1637
Probe Rinse	B6416A	64.1227	64.0790	.0437
Front Half Weight				.2074
Organic Container 2 Acetone Hexane	H561	4.3593	4.3331	.0262
Inorganic Container 1 H ₂ O	C5944	104.6038	104.3507	.2531
Total Net Weight				.4867

Identification

F = 3 inch filter P = 47mm filter B = 150ml Beaker

C = 250ml Beaker

D = 400ml Beaker

Date: 10-30-15

RH09-Cob

CES COMPREHENSIVE
EMISSION
SERVICES

Project Number: 11915
 Plant Name: Occola Foods
 Date: 10-29-15
 Analysis Type: MS/200

RH09 Wood

Run 1				
Type	Identification Number	Final Weight	Tare Weight	Net Weight
Filter	F 3321	3.0691	2.8838	.1853
Probe Rinse	B 6417A	67.2971	67.2769	.0202
Front Half Weight				.2055
Organic Container 2 Acetone Hexane	H 557	4.6281	4.6016	.0265
Inorganic Container 1 H ₂ O	C 5945	102.9105	102.6895	.2210
Total Net Weight				.4530
Run 2				
Type	Identification Number	Final Weight	Tare Weight	Net Weight
Filter	F 3322	3.0878	2.8630	.2248
Probe Rinse	B 6418A	66.8838	66.8637	.0201
Front Half Weight				.2449
Organic Container 2 Acetone Hexane	H 558	~~4.6586~~ 4.6281	4.6195	.0391
Inorganic Container 1 H ₂ O	C 5946	~~102.9435~~	102.7600	.1835
Total Net Weight				.4675
Run 3				
Type	Identification Number	Final Weight	Tare Weight	Net Weight
Filter				
Probe Rinse				
Front Half Weight				
Organic Container 2 Acetone Hexane				
Inorganic Container 1 H ₂ O				
Total Net Weight				

Identification

F = 3 inch filter P = 47mm filter B = 150ml Beaker

C = 250ml Beaker

D = 400ml Beaker

In desiccator:

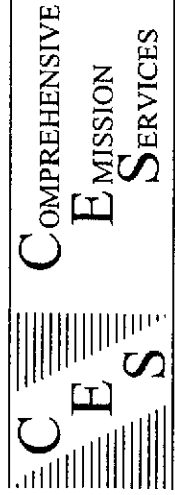
Time: 11:15

Date: 10-30-15

FINAL WEIGHT WEIGHING SHEET

RH09-Wood

Time	Date	Analyst	Run	Weighing (grams)					Average Final Weight	Tare Weight	Net Weight
				1	2	3	4	5			
F3321	11/02/15	TH		3.0692	3.0690				3.0691		
3322	11/04/15	TH		3.0878	3.0877				3.0878		
B6417A				67.2969	67.2973				67.2971		
6418A				66.8836	66.8839				66.8838		
H557				4.6282	4.6280				4.6281		
558				4.6587	4.6585				4.6586		
C5945				102.9103	102.9106				102.9105		
5946				102.9433	102.9436				102.9435		
Check Weight				100.0001	100.0001						
Check Weight				70.0001	70.0001						
Check Weight				5.0001	5.0001						
Check Weight											



In desiccator:

Time: 9:45

Date: 6-8-15

TARE WEIGHT WEIGHING SHEET

Time	3:00 pm	11:30					
Date	June 11, 2015	June 12, 2015					
Analyst	TJ	TJ					
ID No.	Weighing (grams)					Average	
	1	2	3	4	5		
F 3314	2.8998	2.8999				2.8999	
1 3315	2.9001	2.9001				2.9001	
✓ 3316	2.9093	2.9091				2.9092	
3317	2.8759	2.8759				2.8759	
3318	2.8676	2.8677				2.8677	
3319	2.8711	2.8711				2.8711	
3320	2.8822	2.8822				2.8822	
3321	2.8839	2.8837				2.8838	
3322	2.8629	2.8630				2.8630	
3323	2.8622	2.8624				2.8623	
3324	2.8575	2.8575				2.8575	
3325	2.8461	2.8461				2.8461	
Check Weight	5.0000	5.0000					

In desiccator:

Time: 9:30

Date: 5-27-15

TARE WEIGHT WEIGHING SHEET

Time	10:45	2 45				
Date	5-29-15	6-8-15				
Analyst	TD	TD				
ID No.	Weighing (grams)					Average
	1	2	3	4	5	
3302	2.8910	2.8910				2.8910
3303	2.8961	2.8901				2.8901
3304	2.8808	2.8809				2.8809
3305	2.8742	2.8746				2.8744
3306	2.8570	2.8573				2.8572
3307	2.8524	2.8528				2.8526
3308	2.8494	2.8499				2.8497
3309	2.8525	2.8528				2.8527
3310	2.8672	2.8673				2.8673
3311	2.8665	2.8669				2.8667
3312	2.8834	2.8836				2.8835
3313	2.8645	2.8646				2.8646
Check Weight	5.0000	5.0000				

In desiccator:

Time: 9:26

Date: 9-30-15

TARE WEIGHT WEIGHING SHEET

Time	3:40	10:00					
Date	10-14-15	10-15-15					
Analyst	TD	TD					
ID No.	Weighing (grams)					Average	
	1	2	3	4	5		
B 6410 A	76.5725	76.5723				76.5724	
I 6411 A	67.5816	67.5814				67.5815	
V 6412 A	65.0795	65.0792				65.0794	
6413 A	78.9898	78.9899				78.9899	
6414 A	64.1931	64.1930				64.1931	
6415 A	75.2092	75.2091				75.2092	
6416 A	64.0790	64.0790				64.0790	
6417 A	67.2769	67.2769				67.2769	
6418 A	66.8636	66.8637				66.8637	
6419 A	66.8871	66.8872				66.8872	
6420 A	66.9848	66.9851				66.9850	
6421 A	67.0458	67.0461				67.0460	
Check Weight	70.0000	70.0000					

In desiccator:

Time: 11:40

Date: June 23, 2015

TARE WEIGHT
WEIGHING SHEET

Time	9:28	13:15					
Date	6-23-15	7-8-15					
Analyst	MW	MW					
ID No.	Weighing (grams)						Average
	1	2	3	4	5		
H 555	4.5897	4.5897					4.5897
J 556	4.5982	4.5983					4.5983
✓ 557	4.6014	4.6017					4.6016
558	4.6193	4.6196					4.6195
559	4.3506	4.3505					4.3506
560	4.3376	4.3378					4.3377
561	4.3331	4.3330					4.3331
562	4.3421	4.3423					4.3422
563	4.3347	4.3348					4.3348
564	4.3416	4.3416					4.3416
565	4.3311	4.3312					4.3312
566	4.3203	4.3202					4.3203
Check Weight	5.0000	5.0000					

In desiccator:

Time: 14:45

Date: 9-10-15

TARE WEIGHT
WEIGHING SHEET

Time	13:35	9:06				
Date	9-14-15	9-16-15				
Analyst	J.T.	J.T.				
ID No.	Weighing (grams)					Average
	1	2	3	4	5	
C 59415	102.6893	102.6896				102.6895
I 59416	102.7597	102.7602				102.75600
J 59417	102.1259	102.1263				102.1261
W 59418	104.5732	104.5737				104.5735
59419	98.9847	98.9851				98.9849
5950	105.9337	105.9339				105.9338
5951	106.6760	106.6763				106.6762
5952	98.7355	98.7355				98.7355
5953	104.2759	104.2761				104.2760
5954	101.9315	101.9318				101.9317
5955	103.0749	103.0752				103.0751
5956	103.3915	103.3917				103.3916
Check Weight	100.0006	100.0006				

In desiccator:

Time: 9:45Date: 7-9-15TARE WEIGHT
WEIGHING SHEET

Time	10:55	9:45				
Date	7-13-19	7-14-19				
Analyst	J.T.	J.T.				
ID No.	Weighing (grams)					Average
	1	2	3	4	5	
C 5933	101.6112	101.6108				101.6110
✓ 5934	104.4223	104.4219				104.4221
✓ 5935	103.7596	103.7592				103.7594
5936	104.3970	104.3968				104.3969
5937	102.7363	102.7362				102.7363
5938	102.5159	102.5155				102.5157
5939	103.8831	103.8830				103.8831
5940	102.3863	102.3861				102.3862
5941	101.9906	101.9904				101.9905
5942	103.8220	103.8217				103.8219
5943	103.3426	103.3424				103.3425
5944	104.3507	104.3506				104.3507
Check Weight	100.0000	100.0000				

Appendix C

Field Data Forms

Run No. 1
Location: Osceola Foods(smoke generator RH09) *ceb*
Date: Oct. 22, 2015
Project # 13915

% Isokinetic= 99.6

Initial Meter Volume (Cubic Feet)= 622.200
Final Meter Volume (Cubic Feet)= 700.685
Meter Factor= 1.005
Final Leak Rate (cu Ft/min)= 0.002
Net meter Volume (Cubic Feet)= 78.877
Gas Volume (Dry Std Cubic Feet 68 Deg)= 75.917

Barometric Pressure (in Hg) = 29.15
Static Pressure (Inches H2O)= 0.00
Stack Pressure (in Hg)= 29.15

Percent Oxygen = 20.40
Percent Carbon Dioxide= 0.40
Moisture Collected(ml)= 148.0
Percent Water= 4.35

Average Meter Temperature (F)= 76.3
Average Delta H (in H2O)= 1.32
Average Delta P (inches H2O)= 0.0342
Average Stack Temp (F)= 87
Dry Molecular Weight= 28.88
Wet Molecular Weight= 28.41

Sampling Time (Minutes)= 120.0
Nozzle Diameter(Inches)= 0.467
Stack Round or Square= Round
Stack Dimention A (Inches)= 12.00

Stack Area (Square Feet) = 0.79
Pitot Coefficient= 0.84
Average Square Root of Delta P (inches H2O)= 0.1690

Stack Velocity (Actual, ft/min)= 592
Flow Rate (Actual, Cubic ft/min)= 465
Flow Rate (Std, Dry, Cubic ft/min 68 Deg)= 418

Particulate Loading - Front Half

Particulate Weight Net (g)= 0.2017
Paticulate Loading, Dry Std. 68 Deg (gr/scf)= 0.0410
Emission Rate (lb/hr)= 0.15

Particulate Loading - Total Catch Including Impingers

Particulate Weight Net (g)= 0.3539
Particulate Loading, Dry Std. 68 Deg (gr/scf)= 0.0719
Emission Rate (lb/hr)= 0.26
Percent Impinger Catch= 43.01

Run No. 2
Location: Osceola Foods(smoke generator RH09) 206
Date: Oct. 22, 2015
Project # 13915

% Isokinetic= 99.1

Initial Meter Volume (Cubic Feet)= 701.200
Final Meter Volume (Cubic Feet)= 791.619
Meter Factor= 1.005
Final Leak Rate (cu Ft/min)= 0.001
Net meter Volume (Cubic Feet)= 90.871
Gas Volume (Dry Std Cubic Feet 68 Deg)= 87.432

Barometric Pressure (in Hg) = 29.15
Static Pressure (Inches H2O)= 0.00
Stack Pressure (in Hg)= 29.15

Percent Oxygen = 20.40
Percent Carbon Dioxide= 0.40
Moisture Collected(ml)= 160.0
Percent Water= 4.57

Average Meter Temperature (F)= 77.0
Average Delta H (in H2O)= 1.78
Average Delta P (inches H2O)= 0.0442
Average Stack Temp (F)= 88
Dry Molecular Weight= 28.88
Wet Molecular Weight= 28.38

Sampling Time (Minutes)= 120.0
Nozzle Diameter(Inches)= 0.467
Stack Round or Square= Round
Stack Dimention A (Inches)= 12.00

Stack Area (Square Feet) = 0.79
Pitot Coefficient= 0.84
Average Square Root of Delta P (inches H2O)= 0.1962

Stack Velocity (Actual, ft/min)= 688
Flow Rate (Actual, Cubic ft/min)= 540
Flow Rate (Std, Dry, Cubic ft/min 68 Deg)= 484

Particulate Loading - Front Half

Particulate Weight Net (g)= 0.2059
Paticulate Loading, Dry Std. 68 Deg (gr/scf)= 0.0363
Emission Rate (lb/hr)= 0.15

Particulate Loading - Total Catch Including Impingers

Particulate Weight Net (g)= 0.4658
Particulate Loading, Dry Std. 68 Deg (gr/scf)= 0.0822
Emission Rate (lb/hr)= 0.34
Percent Impinger Catch= 55.80

Run No. 3
 Location: Osceola Foods(smoke generator RH09) 206
 Date: Oct. 22, 2015
 Project # 13915

% Isokinetic= 101.0

Initial Meter Volume (Cubic Feet)= 793.300
 Final Meter Volume (Cubic Feet)= 869.285
 Meter Factor= 1.005
 Final Leak Rate (cu Ft/min)= 0.001
 Net meter Volume (Cubic Feet)= 76.365
 Gas Volume (Dry Std Cubic Feet 68 Deg)= 73.916

Barometric Pressure (in Hg) = 29.15
 Static Pressure (Inches H2O)= 0.00
 Stack Pressure (in Hg)= 29.15

Percent Oxygen = 20.40
 Percent Carbon Dioxide= 0.40
 Moisture Collected(ml)= 146.0
 Percent Water= 4.59

Average Meter Temperature (F)= 73.2
 Average Delta H (in H2O)= 1.28
 Average Delta P (inches H2O)= 0.0275
 Average Stack Temp (F)= 88
 Dry Molecular Weight= 28.88
 Wet Molecular Weight= 28.38

Sampling Time (Minutes)= 120.0
 Nozzle Diameter(Inches)= 0.467
 Stack Round or Square= Round
 Stack Dimention A (Inches)= 12.00

Stack Area (Square Feet) = 0.79
 Pitot Coefficient= 0.84
 Average Square Root of Delta P (inches H2O)= 0.1628

Stack Velocity (Actual, ft/min)= 571
 Flow Rate (Actual, Cubic ft/min)= 449
 Flow Rate (Std, Dry, Cubic ft/min 68 Deg)= 402

Particulate Loading - Front Half

Particulate Weight Net (g)= 0.2074
 Paticulate Loading, Dry Std. 68 Deg (gr/scf)= 0.0433
 Emission Rate (lb/hr)= 0.15

Particulate Loading - Total Catch Including Impingers

Particulate Weight Net (g)= 0.4867
 Particulate Loading, Dry Std. 68 Deg (gr/scf)= 0.1016
 Emission Rate (lb/hr)= 0.35
 Percent Impinger Catch= 57.39

Run No. 1
 Location: Osceola Foods(smoke generator RH09) wood
 Date: Oct23,2015
 Project # 13915

% Isokinetic= 98.9

Initial Meter Volume (Cubic Feet)= 869.700
 Final Meter Volume (Cubic Feet)= 938.787
 Meter Factor= 1.005
 Final Leak Rate (cu Ft/min)= 0.005
 Net meter Volume (Cubic Feet)= 69.432
 Gas Volume (Dry Std Cubic Feet 68 Deg)= 67.094

Barometric Pressure (in Hg) = 28.90
 Static Pressure (Inches H2O)= 0.00
 Stack Pressure (in Hg)= 28.90

Percent Oxygen = 20.40
 Percent Carbon Dioxide= 0.40
 Moisture Collected(ml)= 92.0
 Percent Water= 3.73

Average Meter Temperature (F)= 69.3
 Average Delta H (in H2O)= 1.13
 Average Delta P (inches H2O)= 0.0242
 Average Stack Temp (F)= 82
 Dry Molecular Weight= 28.88
 Wet Molecular Weight= 28.47

Sampling Time (Minutes)= 120.0
 Nozzle Diameter(Inches)= 0.467
 Stack Round or Square= Round
 Stack Dimention A (Inches)= 12.00

Stack Area (Square Feet) = 0.79
 Pitot Coefficient= 0.84
 Average Square Root of Delta P (inches H2O)= 0.1495

Stack Velocity (Actual, ft/min)= 522
 Flow Rate (Actual, Cubic ft/min)= 410
 Flow Rate (Std, Dry, Cubic ft/min 68 Deg)= 372

Particulate Loading - Front Half

Particulate Weight Net (g)= 0.2055
 Paticulate Loading, Dry Std. 68 Deg (gr/scf)= 0.0473
 Emission Rate (lb/hr)= 0.15

Particulate Loading - Total Catch Including Impingers

Particulate Weight Net (g)= 0.4530
 Particulate Loading, Dry Std. 68 Deg (gr/scf)= 0.1042
 Emission Rate (lb/hr)= 0.33
 Percent Impinger Catch= 54.64

Run No. 2
 Location: Osceola Foods(smoke generator RH09) wood
 Date: Oct23,2015
 Project # 13915

% Isokinetic= 100.1

Initial Meter Volume (Cubic Feet)= 939.300
 Final Meter Volume (Cubic Feet)= 1013.223
 Meter Factor= 1.005
 Final Leak Rate (cu Ft/min)= 0.002
 Net meter Volume (Cubic Feet)= 74.293
 Gas Volume (Dry Std Cubic Feet 68 Deg)= 71.138

Barometric Pressure (in Hg) = 28.90
 Static Pressure (Inches H2O)= 0.00
 Stack Pressure (in Hg)= 28.90

Percent Oxygen = 20.40
 Percent Carbon Dioxide= 0.40
 Moisture Collected(ml)= 139.0
 Percent Water= 5.27

Average Meter Temperature (F)= 74.3
 Average Delta H (in H2O)= 1.27
 Average Delta P (inches H2O)= 0.0275
 Average Stack Temp (F)= 92
 Dry Molecular Weight= 28.88
 Wet Molecular Weight= 28.31

Sampling Time (Minutes)= 120.0
 Nozzle Diameter(Inches)= 0.467
 Stack Round or Square= Round
 Stack Dimention A (Inches)= 12.00

Stack Area (Square Feet) = 0.79
 Pitot Coefficient= 0.84
 Average Square Root of Delta P (inches H2O)= 0.1603

Stack Velocity (Actual, ft/min)= 567
 Flow Rate (Actual, Cubic ft/min)= 446
 Flow Rate (Std, Dry, Cubic ft/min 68 Deg)= 390

Particulate Loading - Front Half

Particulate Weight Net (g)= 0.2248
 Paticulate Loading, Dry Std. 68 Deg (gr/scf)= 0.0488
 Emission Rate (lb/hr)= 0.16

Particulate Loading - Total Catch Including Impingers

Particulate Weight Net (g)= 0.4675
 Particulate Loading, Dry Std. 68 Deg (gr/scf)= 0.1014
 Emission Rate (lb/hr)= 0.34
 Percent Impinger Catch= 51.91

C E S COMPREHENSIVE E MISSION S E R V I C E S

Project Number 13915
 Run Number 1
 Date 10-22-15
 Sample Type 5/202
 Plant Osceola Foods
 Location Smoke generator RH04 Cob

Project Leader Ted Webb
 Meter Operator Jay Titus
 Lab Person _____
 Support Personnel Mason Waltz
Taylor Dailey

Assumed Moisture % 0 Meter Number 87
 Minutes Per Point (min.) 10 Oven Number 200T
 Sampling Time (min.) 120 Umbilical Number 2001
 Meter Factor Y ~~0.982~~ 1.005 Pitot Number 3
 Meter ΔH @ 1.864 37 Probe Number 3
 Pitot Coefficient C_p 0.84 Probe Length 3'
 Stack Axis 1 (inch.) 12" Nozzle Type SS
 Stack Axis 2 (inch.) 12"
 Barometric Pressure (in. Hg) 29.15
 Static Pressure (in. H₂O) 0.00
 Nozzle Diameter (inch.) 0.467



Schematic of Testing Location

Initial Meter Volume (ft ³)	<u>622.200</u>
Final Meter Volume (ft ³)	<u>700.685</u>
Leak Rate Before	<u>.004</u> CFM@ <u>> 15</u> in. Hg
Leak Rate After	<u>.002</u> CFM@ <u>19</u> in. Hg
Pitot Leak Check	Before ☒ After ☐

RECOVERY DATA

Orsat

Trial	%CO ₂	%CO ₂ +%O ₂	%O ₂
1			
2			
3			
Avg			

Impingers

	Final	Initial	Difference
Impinger 1	<u>126</u>	<u>0</u>	<u>126</u>
Impinger 2	<u>1</u>	<u>0</u>	<u>1</u>
Impinger 3	<u>100</u>	<u>100</u>	<u>0</u>
Impinger 4	<u>778</u>	<u>757</u>	<u>21</u>
Condition/Color		Total	<u>148</u>

Notes: Saved as SG-R1

Filter Number: F 3312

Field Data Sheet

Run No. 1

Project No. 13915

Location RH04 6b

Date 10-22-19

Operator J.T, M.V, T.W & T.D,

Start Time 17:46

Stop Time 16:49

[illegible]

Notes

C E S COMPREHENSIVE E MISSION S ERVICES

Project Number 13915
Run Number 2
Date 10-22-15
Sample Type S1202
Plant Osceola Foods
Location Smoke generator RH09 Cob

Project Leader T.W.
Meter Operator J.J.
Lab Person _____
Support Personnel M.W.
T.D.

Assumed Moisture % 5.47 Meter Number 7
Minutes Per Point (min.) 10 Oven Number 2667
Sampling Time (min.) 120 Umbilical Number 2001
Meter Factor Y 1.005 Pitot Number 3
Meter $\Delta H@$ 1.837 Probe Number 3
Pitot Coefficient C_p 0.87 Probe Length 3'
Stack Axis 1 (inch.) 12" Nozzle Type SS
Stack Axis 2 (inch.) 12"
Barometric Pressure (in. Hg) 29.19
Static Pressure (in. H₂O) 0.00
Nozzle Diameter (inch.) 0.467

See
Run 1

Schematic of Testing Location

Initial Meter Volume (ft ³)	<u>701.200</u>
Final Meter Volume (ft ³)	<u>791.619</u>
Leak Rate Before	<u>.005</u> CFM@ <u>≥ 15</u> in. Hg
Leak Rate After	<u>.001</u> CFM@ <u>21</u> in. Hg
Pitot Leak Check	✓ Before ✓ After

RECOVERY DATA

Orsat

Trial	%CO ₂	%CO ₂ +%O ₂	%O ₂
1			
2			
3			
Avg			

Impingers

	Final	Initial	Difference
Impinger 1	<u>135</u>	<u>0</u>	<u>135</u>
Impinger 2	<u>0</u>	<u>0</u>	<u>0</u>
Impinger 3	<u>98</u>	<u>100</u>	<u>-2</u>
Impinger 4	<u>791</u>	<u>764</u>	<u>27</u>
Condition/Color		Total	<u>140</u>

Notes: Saved as 56R2

Filter Number: F 3313

Field Data Sheet

Run No. 2
Project No. 13915
Location RH09 C6b
Date 10-22-15
Operator J.T., T.W., M.V. & T.D.
Start Time 17:03
Stop Time 19:06

[illegible]

Notes:

C E S COMPREHENSIVE E MISSION S ERVICES

Project Number 13919
 Run Number 3
 Date 10-22-15
 Sample Type S/202
 Plant Oscologia Foods
 Location RH09 Colo

Project Leader T.W.
 Meter Operator J.P.
 Lab Person _____
 Support Personnel T.D.
M.W.

Assumed Moisture % 5 Meter Number 7
 Minutes Per Point (min.) 10 Oven Number 2647
 Sampling Time (min.) 120 Umbilical Number 2001
 Meter Factor Y 1.005 Pitot Number 3
 Meter $\Delta H@$ 1.84337 Probe Number 3
 Pitot Coefficient Cp 0.84 Probe Length 3'
 Stack Axis 1 (inch.) 12" Nozzle Type SS
 Stack Axis 2 (inch.) 12"
 Barometric Pressure (in. Hg) 29.19
 Static Pressure (in. H₂O) 0.00
 Nozzle Diameter (inch.) 0.467

See
Run 1

Schematic of Testing Location

Initial Meter Volume (ft ³)	<u>775.306</u>
Final Meter Volume (ft ³)	<u>869.285</u>
Leak Rate Before <u>.009</u> CFM@ <u>> 15</u> in. Hg	
Leak Rate After <u>.001</u> CFM@ <u>1</u> in. Hg	
Pitot Leak Check ☒ Before ☒ After	

RECOVERY DATA

Orsat

Trial	%CO ₂	%CO ₂ +%O ₂	%O ₂
1			
2			
3			
Avg			

Impingers

	Final	Initial	Difference
Impinger 1	<u>125</u>	<u>0</u>	<u>125</u>
Impinger 2	<u>2</u>	<u>0</u>	<u>2</u>
Impinger 3	<u>100</u>	<u>100</u>	<u>—</u>
Impinger 4	<u>917</u>	<u>898</u>	<u>19</u>
Condition/Color		Total	<u>146</u>

Notes: Saved as SGR3

Filter Number: F-3314

Field Data Sheet

Run No. 3
Project No. 13915
Location RH09 Cob
Date 10-22-15
Operator J. J., T. W., M. V. & T. D.
Start Time 19:19
Stop Time 21:21

Traverse Point	Sample Time (min)	Dry Gas Meter ft ³ Initial	Velocity Head ΔP in. H ₂ O	Stack Temp. °F	Dry Gas Meter Temp. °F		Orifice ΔH in H ₂ O	Pump VAC in. Hg	Oven Temp. °F	Exit Temp. °F	Probe Temp. °F	CPM Filter Temp °F
					Inlet	Outlet						
A1	10	793.300	.03	92	74	73	1.4	6	254	63	240	75
2	20	805.890	.03	94	75	71	1.4	6	269	64	244	75
3	30	812.710	.03	95	76	71	1.4	6	273	64	241	75
4	40	820.560	.04	96	77	71	1.8	8	272	59	241	74
5	50	826.330	.02	98	78	71	.92	5	264	54	259	74
6	1:00	830.249	.01	60	76	71	.49	3	274	51	263	74
B1	10	834.250	.01	55	74	70	.49	3	267	51	263	75
2	20		.03	91	74	70	1.4	6	267	49	263	74
3	30	846.850	.03	93	76	70	1.4	6	257	48	261	74
4	40	859.630	.04	94	76	70	1.8	9	263	49	261	74
5	50	862.510	.03	94	76	70	1.4	6	268	51	259	74
6	1:00	869.285	.03	94	76	70	1.4	6	264	51	256	74

Notes¹

Preliminary Velocity

Plant Project No. 13915
Date 10-22-15
Location Smoke generator RH09 cor
Stack I.D. 12"
Pitot Cp 0.84
Static Pressure in H_2O _____
Barometer Pressure in. Hg 29.15
Start Time _____
Stop Time _____
Operators _____



SCHEMATIC OF TRAVERSE POINT LAYOUT

Final Pitot Leak Check at $\geq 3''$ H₂O P / F

Traverse Point Number	Velocity Head ΔP in. H ₂ O	Stack Temp. °F	Cyclonic Flow Determination	
			ΔP at 0° Reference	Angle Which Yields a Null ΔP
A1	.02	71		
2	.02	71		
3	.02	72		
4	.02	72		
5	.03	73		
6	.03	73		
B1	.03	73		
2	.03	74		
3	.03	74		
4	.03	74		
5	.03	75		
1	.02	75		

Notes: 103 73

[illegible]

EPA VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)
 Method 9 203A 203B Other

Company Name **Osceola Foods**
 Facility Name
 Street Address
 City **Osceola** State **IA** Zip

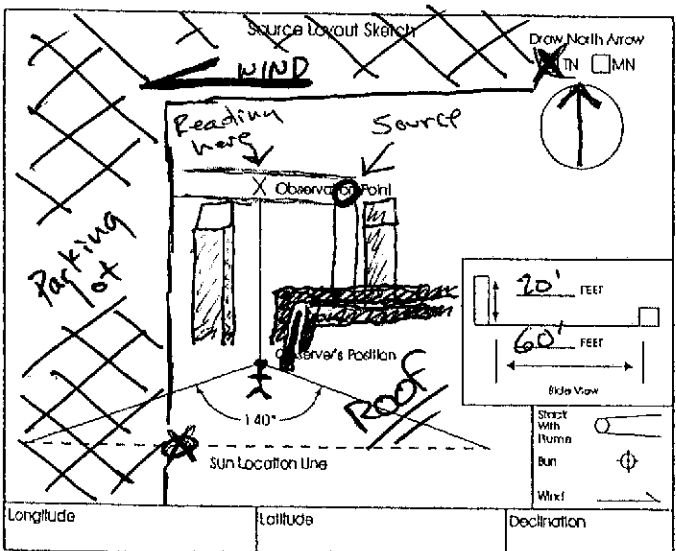
Process **Bacon Line smoker + cooler** Unit # **38** Operating Mode **Normal**
 Control Equipment **Scrubber** Operating Mode **Normal**

Describe Emission Point
30' tall round silver
stack on W side of plant
 Height of Emis. Pt. Start **50'** End **50'** Height of Emis. Pt. (rel. to Observ.) Start **20'** End **20'**
 Distance to Emis. Pt. Start **60'** End **60'** Direction to Emis. Pt. (Degrees) Start **NE** End **NE**

Vertical Angle to Obs. Pt. Start **20°** End **20°** Direction to Obs. Pt. (Degrees) Start **NE** End **NE**
 Distance and Direction to Observation Point from Emission Point Start **10' to the W** End **10' to the W**

Describe Emissions
 Start **white smoke** End **None**
 Emission Color Start **White** End **None** Attached ☒ Detached ☐ None ☐

Describe Plume Background
 Start **sky** End **sky**
 Background Color Start **blue/wh. *** End **white** Sky Conditions Start **pt. cloudy** End **overcast**
 Wind Speed Start **10-15** End **10-15** Wind Direction Start **E → W** End **E → W**
 Ambient Temp. Start **70** End **70** Wet Bulb Temp. RH Percent



Additional Information
opacity during "smoke cycle"
~~made smoke cycle observations~~

VEOF1.1

cob smoke RH09

13.9% opacity

Form Number **RUN 1** Page **1** of **1**
 Continued on VEO Form Number

Observation Date					Time Zone					Start Time					End Time				
Oct 27, 2015					C					14:35					15:35				
Mn	Sec	0	15	30	45	Mn	Sec	0	15	30	45	Mn	Sec	0	15	30	45		
1	15	10	10	15		1	20	20	10	15									
2	15	15	15	15		2	15	10	10	15									
3	10	15	15	15		3	15	15	15	15									
4	15	15	15	15		4	10	10	10	15									
5	15	15	20	15		5	15	15	15	15									
6	15	20	10	10		6	20	15	15	15									
7	15	10	20	20		7	15	20	20	15									
8	20	15	15	20		8	15	15	15	10									
9	20	15	15	20		9	15	15	15	20									
10	20	15	15	15		10	20	20	15	20									
11	10	15	15	15		11	10	10	10	15									
12	20	10	20	15		12	15	15	15	10									
13	15	15	20	20		13	10	10	10	10									
14	15	15	15	15		14	15	15	20	20									
15	10	10	15	15		15	20	15	15	15									
16	15	15	15	15		16	15	15	15	15									
17	15	20	10	15		17	20	15	15	15									
18	10	10	20	20		18	20	20	10	10									
19	20	15	15	15		19	10	20	20	15									
20	15	15	15	15		20	10	15	15	10									
21	15	20	20	10		21	15	15	15	10									
22	15	15	15	15		22	10	10	10	10									
23	20	15	10	15		23	10	10	10	15									
24	10	10	15	15		24	15	10	10	10									
25	10	15	15	15		25	10	5	5	10									
26	15	10	10	10		26	5	5	10	10									
27	15	15	20	10		27	5	5	5	5									
28	15	15	20	20		28	10	10	10	5									
29	10	15	15	20		29	10	10	0	0									
30	15	15	20	15		30	0	0	0	0									

Observer's Name (Print) **TAYLOR DAILEY**
 Observer's Signature **Taylor** Date **Oct 27, 2015**
 Organization **CES**
 Certified By **Aero Met** Date **10-1-2015**

EPA VISIBLE EMISSION OBSERVATION FORM 1

Method 9 (Circle One) 203A 203B Other: _____

Company Name Osceola Foods
 Facility Name _____
 Street Address _____
 City Osceola State IA Zip _____

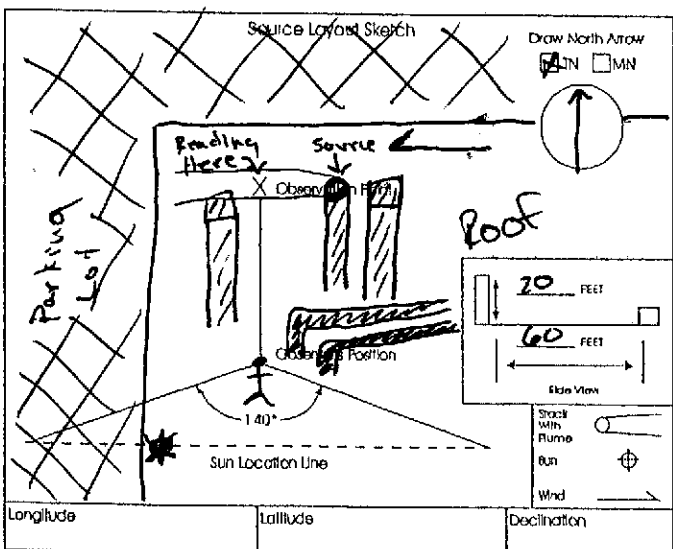
Process Bacon line smoker-cooker Unit # 38 Operating Mode Normal
 Control Equipment Scrubber Operating Mode Normal

Describe Emission Point
50' tall round silver stack on W side of plant
 Height of Emiss. Pt. Start 50' End 50' Height of Emiss. Pt. Rel. to Observer Start 20' End 20'
 Distance to Emiss. Pt. Start 60' End 60' Direction to Emiss. Pt. (Degrees) Start N End N

Vertical Angle to Obs. Pt. Start 20° End 20° Direction to Obs. Pt. (Degrees) Start N End N
 Distance and Direction to Observation Point from Emission Point Start 10' to W End 10' to W

Describe Emissions
 Start white smoke End _____
 Emission Color _____ Water Droplet Plume _____
 Start white End _____ Attached ☒ Detached ☐ None ☐

Describe Plume Background
 Start sky End sky
 Background Color _____ Sky Conditions _____
 Start white/blue End white Start overcast End overcast
 Wind Speed _____ Wind Direction _____
 Start 10-15 End 10-15 Start E→W End E→W
 Ambient Temp. _____ Wet Bulb Temp. _____
 Start 65 End 65 RH Percent _____



Additional Information
Smoke stopped for few mins then began again at the start of run 2

VEOF 1.1

cob smoke rho9
 7.35% opacity

Form Number Run 2 Page 1 of 1
 Continued on VEO Form Number _____

Observation Date					Time Zone					Start Time					End Time				
Oct 22, 2015					C					15:38					16:38				
Sec	0	15	30	45	Sec	0	15	30	45	Min	0	15	30	45					
1	10	10	5	10	1	0	0	0	0										
2	10	10	10	5	2	0	0	0	0										
3	10	15	15	15	3	0	0	0	0										
4	15	10	15	10	4	0	0	0	0										
5	15	15	20	20	5	0	0	0	0										
6	15	10	15	15	6	0	0	0	0										
7	15	20	20	15	7	0	0	0	0										
8	15	10	10	15	8	0	0	0	0										
9	15	15	10	15	9	0	0	0	0										
10	10	10	15	20	10	0	0	0	0										
11	10	15	10	10	11	0	0	0	0										
12	15	15	15	10	12	0	0	0	0										
13	15	10	20	15	13	0	0	0	0										
14	15	10	15	15	14	0	0	0	0										
15	15	20	20	15	15	0	0	0	0										
16	20	15	20	20	16	0	0	0	0										
17	15	20	15	15	17	0	0	0	0										
18	20	15	20	20	18	0	0	0	0										
19	15	15	10	15	19	0	0	0	0										
20	20	20	15	15	20	0	0	0	0										
21	15	10	10	10	21	0	0	0	0										
22	10	10	10	10	22	0	0	0	0										
23	10	5	5	5	23	0	5	5	5										
24	10	5	5	5	24	10	15	15	15										
25	5	5	0	0	25	20	15	20	20										
26	0	0	0	0	26	20	20	15	15										
27	0	0	0	0	27	15	15	15	20										
28	0	0	0	0	28	15	20	15	15										
29	0	0	0	0	29	15	15	15	15										
30	0	0	0	0	30	15	15	15	15										

Observer's Name (Print) TAYLOR DAILEY
 Observer's Signature Taylor Dailey Date Oct 22, 2015
 Organization CES
 Certified by AERO MET Date 10-1-15

EPA VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)
 Method Y 203A 203B Other: _____

Company Name Osceola Foods
 Facility Name _____
 Street Address _____
 City Osceola State IA Zip _____

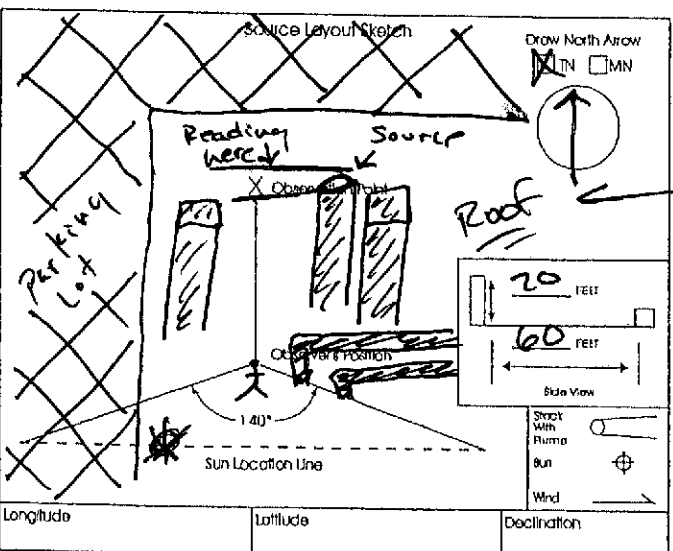
Process Bacon Line Smoker + cooler Unit # 38 Operating Mode Normal
 Control Equipment Scrubber Operating Mode Normal

Describe Emission Point
50' tall round silver stack
on W side of plant
 Height of Emiss. Pt. Start 50' End 50' Height of Emiss. Pt. to Observer Start 20' End 20'
 Distance to Emiss. Pt. Start 60' End 60' Direction to Emiss. Pt. (Degrees) Start N End N

Vertical Angle to Obs. Pt. Start 20° End 20° Direction to Obs. Pt. (Degrees) Start 2N End N
 Distance and Direction to Observation Point from Emission Point Start 10' W End 10' W

Describe Emissions
 Start white smoke End white smoke
 Emission Color Start white End white Water Droplet Plume Attached ☒ Detached ☐ None ☐

Describe Plume Background
 Start sky End sky Sky Conditions Start overcast End overcast
 Background Color Start white End white Wind Speed Start 5-10 End 5-10 Wind Direction Start E → W End E - W
 Ambient Temp. Start 65 End 65 Wet Bulb Temp. _____ RH Percent _____



Additional Information
"Smoke cycle" only
RH09 cob smoke

Form Number RUN 3 Page 1 of 1
 Continued on VEO Form Number _____

Observation Date		Time Zone				Start Time		End Time				Comments
10-22-15		C				17:03		18:03				
Min	Sec	0	15	30	45	Min	Sec	0	15	30	45	
1	15	15	20	15		1	20	20	20	20		cob
2	20	20	15	15		2	20	20	20	15		
3	20	15	20	20		3	15	20	20	20		
4	15	15	15	15		4	20	20	20	20		
5	20	15	20	10		5	20	20	20	15		
6	20	15	15	15		6	20	20	15	10		
7	20	20	15	15		7	20	15	20	20		
8	15	15	15	15		8	15	20	20	20		
9	15	20	20	15		9	20	20	20	20		
10	20	20	15	15		10	20	15	20	20		
11	10	20	15	20		11	15	15	15	20		
12	20	15	15	20		12	20	20	20	20		
13	20	15	20	20		13	20	15	20	20		
14	20	20	20	15		14	20	15	20	20		
15	15	15	15	15		15	20	20	20	20		
16	10	15	10	10		16	15	15	20	20		
17	15	15	15	15		17	20	15	15	20		
18	15	20	15	20		18	15	15	15	20		
19	15	10	15	20		19	20	20	20	20		
20	20	20	20	15		20	20	20	20	20		
21	20	20	10	20		21	20	20	20	20		
22	15	20	20	20		22	20	20	20	20		
23	15	15	15	20		23	15	15	20	20		
24	20	20	15	20		24	20	20	20	20		
25	20	15	20	15		25	20	20	20	20		
26	15	15	20	20		26	20	20	20	20		
27	20	20	20	20		27	10	10	5	5		
28	20	20	20	20		28	5	0	0	0		
29	20	20	15	20		29	0	0	0	0		
30	20	20	20	20		30	0	0	0	0		

Observer's Name (Print) TAYLOR DAILEY
 Observer's Signature Taylor Date 10-22-15
 Organization CES
 Certified by AEROMET Date 10-1-15

16.94 % opacity

C E S COMPREHENSIVE E MISSION S ERVICES

Project Number 13915 Project Leader TW
 Run Number 1 Meter Operator TW
 Date 10-23-15 Lab Person _____
 Sample Type 5/202 Support Personnel mw
 Plant Oscoda Foods TD
 Location Smoke Generator R109 dark wood

Assumed Moisture % 5 Meter Number 7
 Minutes Per Point (min.) 10 Oven Number _____
 Sampling Time (min.) 120 Umbilical Number _____
 Meter Factor Y 1.005 Pitot Number _____
 Meter $\Delta H@$ 1.837 Probe Number _____
 Pitot Coefficient Cp 0.84 Probe Length _____
 Stack Axis 1 (inch.) 12" Nozzle Type _____
 Stack Axis 2 (inch.) 12"
 Barometric Pressure (in. Hg) 29.15
 Static Pressure (in. H₂O) 0.00
 Nozzle Diameter (inch.) 0.467

Schematic of Testing Location

Initial Meter Volume (ft ³)	<u>869.700</u>
Final Meter Volume (ft ³)	<u>938.737</u>
Leak Rate Before <u>.002</u> CFM@	> 15 in. Hg
Leak Rate After <u>.005</u> CFM@	in. Hg
Pitot Leak Check ☒ Before	☒ After

RECOVERY DATA

Orsat

Trial	%CO ₂	%CO ₂ +%O ₂	%O ₂
1			
2			
3			
Avg			

Impingers

	Final	Initial	Difference
Impinger 1	<u>71</u>	<u>0</u>	<u>71</u>
Impinger 2	<u>2</u>	<u>0</u>	<u>2</u>
Impinger 3	<u>102</u>	<u>100</u>	<u>2</u>
Impinger 4	<u>896</u>	<u>879</u>	<u>17</u>
Condition/Color		Total	<u>92</u>

Notes:

Filter Number: F 3321

Field Data Sheet

Run No _____

Project No. 13915

Location RH09 Wood

Date 5-23-15

Operator TW

Start Time 1102-1202

Stop Time 12:03 - 13:03

[illegible]

Notes:

C E S COMPREHENSIVE E MISSION S E RVICES

Project Number 13915
 Run Number 2
 Date 10-23-15
 Sample Type 5/202
 Plant OSCOOLA FOODS
 Location Smoke Generator wood

Project Leader T.W
 Meter Operator TW
 Lab Person _____
 Support Personnel MW
TD

Assumed Moisture % 5 Meter Number 7
 Minutes Per Point (min.) 10 Oven Number _____
 Sampling Time (min.) 120 Umbilical Number _____
 Meter Factor Y 1.005 Pitot Number _____
 Meter $\Delta H@$ 1.837 Probe Number _____
 Pitot Coefficient Cp .84 Probe Length _____
 Stack Axis 1 (inch.) 12" Nozzle Type _____
 Stack Axis 2 (inch.) 12"
 Barometric Pressure (in. Hg) 28.9
 Static Pressure (in. H₂O) 0
 Nozzle Diameter (inch.) .467

Schematic of Testing Location

Initial Meter Volume (ft ³)	<u>939.360</u>
Final Meter Volume (ft ³)	<u>1013.223</u>
Leak Rate Before <u>0.000</u> CFM@ _____	≥ 15 in. Hg
Leak Rate After <u>0.002</u> CFM@ <u>_____</u>	in. Hg
Pitot Leak Check <u>✓</u> Before <u>✓</u>	After _____

RECOVERY DATA

Orsat

Trial	%CO ₂	%CO ₂ +%O ₂	%O ₂
1			
2			
3			
Avg			

Impingers

	Final	Initial	Difference
Impinger 1	<u>115</u>	<u>0</u>	<u>115</u>
Impinger 2	<u>1</u>	<u>0</u>	<u>1</u>
Impinger 3	<u>100</u>	<u>100</u>	<u>—</u>
Impinger 4	<u>761</u>	<u>738</u>	<u>23</u>
Condition/Color		Total	<u>139</u>

Notes:

Filter Number: F3322

Field Data Sheet

Run No 2

Project No. 13915

Location Smoky Gap Wood

Date 10-23-15

Operator tw

Start Time 13:09 14:09

Stop Time 14:10 15:10

[illegible]

Notes

Preliminary Velocity

Plant Project No. 13915
 Date 10-23-15
 Location Ritog wood
 Stack I.D. _____
 Pitot Cp .84
 Static Pressure in H₂O 0
 Barometer Pressure in. Hg 28.9
 Start Time _____
 Stop Time _____
 Operators _____

SCHEMATIC OF TRAVERSE POINT LAYOUT

Final Pitot Leak Check at $\geq 3''$ H₂O P / F

Traverse Point Number	Velocity Head ΔP in. H ₂ O	Stack Temp. °F	Cyclonic Flow Determination	
			ΔP at 0° Reference	Angle Which Yields a Null ΔP
A1	.02	89		
2	.03	89		
3	.03	89		
4	.03	90		
5	.05	92		
6	.01	92		
B1	.03	82		
2	.03	90		
3	.02	92		
4	.04	92		
5	.02	93		
6	.02	90		

Traverse Point Number	Velocity Head ΔP in. H ₂ O	Stack Temp. °F	Cyclonic Flow Determination	
			ΔP at 0° Reference	Angle Which Yields a Null ΔP

Notes:

EPA VISIBLE EMISSION OBSERVATION FORM 1

Method (Check One)
 Method 9 ☒ 203A ☐ 203B ☐ Other _____

Company Name **Osceola Foods**
 Facility Name _____
 Street Address _____
 City **Osceola** State **IA** Zip _____

Process **Bacon line smoking + cooking** Unit # **EU38** Operating Mode **Normal**
 Control Equipment **Scrubber** Operating Mode **Normal**

Describe Emission Point
50' tall silver stack on W side of plant
 Height of Emis. Pt. Start **50'** End **50'** Height of Emis. Pt. Rel. to Observer Start **50'** End **50'**
 Distance to Emis. Pt. Start **150'** End **150'** Direction to Emis. Pt. (Degrees) Start **NE** End **NE**

Vertical Angle to Obs. Pt. Start **25** End **25** Direction to Obs. Pt. (Degrees) Start **NE** End **NE**
 Distance and Direction to Observation Point (from Emission Point) Start **10' N of stack** End **10' N of stack**

Describe Emissions
 Start **white smoke** End **white smoke**
 Emission Color Start **white** End **white** Water Droplet Plume Attached ☒ Detached ☐ None ☐

Describe Plume Background
 Start **sky** End **sky**
 Background Color Start **white** End **white** Sky Conditions Start **overcast** End **overcast**
 Wind Speed Start **10-15** End **10-15** Wind Direction Start **S → N** End **S → N**
 Ambient Temp. Start **65** End **65** Wet Bulb Temp. _____ RH Percent _____

Source Layout Sketch

Draw North Arrow ☒ N ☐ MN

Longitude _____ Latitude _____ Declination _____

Additional Information
wood chip smoke
RHO9

Form Number **203A** Page **1** of **1**
 Continued on VEO Form Number _____

Observation Date					Time Zone					Start Time					End Time				
Oct 23, 2015					C					11:02					12:02				
Min	Sec	0	15	30	45	Min	Sec	0	15	30	45	Min	Sec	0	15	30	45		
1	0	0	0	0	0	1	20	15	15	20									
2	0	0	0	0	0	2	20	15	15	20									
3	0	0	0	0	0	3	20	10	15	25									
4	0	0	0	0	0	4	25	25	25	20									
5	0	0	0	0	0	5	20	20	15	20									
6	0	0	0	0	0	6	15	10	20	25									
7	0	0	0	0	0	7	25	20	20	25									
8	0	0	0	0	0	8	20	15	25	25									
9	0	0	0	0	0	9	25	25	20	20									
10	0	0	0	0	0	10	20	25	25	25									
11	0	0	0	0	0	11	25	20	25	20									
12	0	0	0	0	0	12	20	20	25	25									
13	0	0	0	0	0	13	25	20	20	20									
14	0	5	5	10		14	20	20	25	15									
15	10	15	15	20		15	20	20	20	25									
16	20	25	25	20		16	25	25	25	25									
17	25	25	20	20		17	25	25	25	20									
18	20	20	20	15		18	20	20	15	20									
19	15	20	25	25		19	20	25	25	25									
20	25	25	20	20		20	25	20	25	25									
21	25	25	25	25		21	25	25	20	20									
22	25	25	25	25		22	20	20	20	25									
23	25	25	25	25		23	25	25	25	25									
24	25	25	25	25		24	25	25	20	20									
25	25	20	20	20		25	20	25	25	25									
26	20	25	20	20		26	25	25	25	25									
27	15	15	20	20		27	25	25	25	25									
28	20	20	20	20		28	20	20	20	25									
29	15	15	20	15		29	25	25	25	25									
30	25	25	25	20		30	20	15	20	25									

Observer's Name (Print) **TAYLOR DAILEY**
 Observer's Signature **Taylor Dailey** Date **10-23-15**
 Organization **CES**
 Certified by **AeroMet** Date **10-1-15**

16.77% opacity

EPA VISIBLE EMISSION OBSERVATION FORM 1

Method Method 9 (Circle One)
 Method 9 203A 203B Other: _____

Company Name Osceola Foods
 Facility Name _____
 Street Address _____
 City Osceola State IA Zip _____

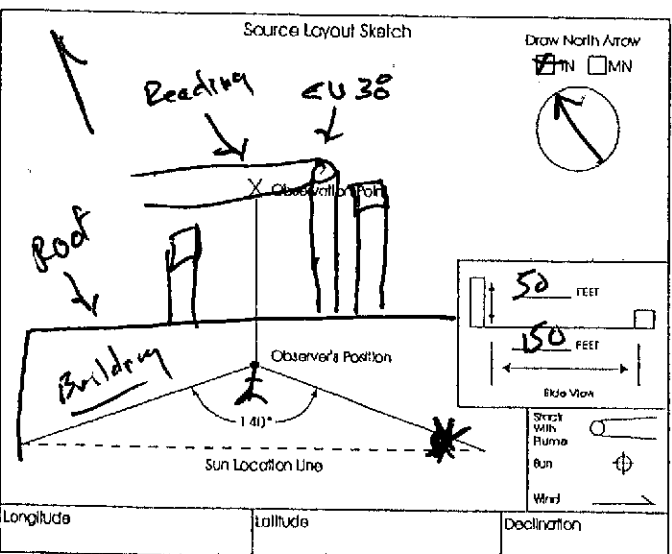
Process Bacon line smoke + cook Unit # E038 Operating Mode Normal
 Control Equipment Scrubber Operating Mode Normal

Describe Emission Point
50' tall silver stack on W side of plant
 Height of Emiss. Pt. Start 50' End 50' Height of Emiss. Pt. Rel. to Observer Start 50' End 50'
 Distance to Emiss. Pt. Start 150' End 150' Direction to Emiss. Pt. (Degrees) Start NE End NE

Vertical Angle to Obs. Pt. Start 25 End 25 Direction to Obs. Pt. (Degrees) Start NE End NE
 Distance and Direction to Observation Point from Emission Point Start 10' N of Stack End 10' N of Stack

Describe Emissions
 Start white smoke End white smoke
 Emission Color Start white End white Water Droplet Plume Attached ☒ Detached ☐ None ☐

Describe Plume Background
 Start sky End sky
 Background Color Start white End white Sky Conditions Start overcast End overcast
 Wind Speed Start 10-15 End 10-15 Wind Direction Start S → N End S → N
 Ambient Temp Start 65 End 65 Wet Bulb Temp _____ Lift Percent _____



Additional Information wood chip smoke
RH09

Form Number RUN 2 Page 1 of 1
 Continued on VEO Form Number _____

Observation Date		Time Zone				Start Time		End Time			
Oct 23, 2005		C				13:09		14:09			
Min	Sec	0	15	30	45	Min	Sec	0	15	30	45
1		0	0	0	0	1		25	25	25	25
2		0	0	0	0	2		25	25	25	20
3		0	0	0	0	3		20	20	25	25
4		0	0	5	5	4		25	25	25	20
5		15	15	25	25	5		25	20	25	25
6		25	20	20	25	6		20	25	25	25
7		25	25	25	20	7		25	25	20	20
8		20	25	25	25	8		25	15	20	25
9		20	20	20	25	9		25	25	25	25
10		25	25	25	25	10		20	25	25	20
11		25	25	20	20	11		25	25	25	25
12		20	25	20	15	12		25	25	20	25
13		20	15	25	25	13		20	20	20	20
14		25	25	25	25	14		25	25	25	15
15		20	20	25	20	15		25	25	20	25
16		25	20	25	25	16		20	15	15	15
17		25	25	20	25	17		15	10	10	10
18		25	25	25	25	18		10	15	20	20
19		15	20	25	25	19		20	15	15	10
20		20	25	25	15	20		10	10	5	5
21		20	15	15	20	21		5	0	0	0
22		20	25	25	25	22		0	0	0	0
23		25	25	25	20	23		0	0	0	0
24		20	20	25	25	24		0	0	0	0
25		20	20	25	25	25		0	0	0	0
26		15	15	20	20	26		0	0	0	0
27		20	15	25	25	27		0	0	0	0
28		25	25	20	25	28		0	0	0	0
29		25	20	20	15	29		0	0	0	0
30		20	25	20	20	30		0	0	0	0

Observer's Name (Print) TAYLOR DAILEY
 Observer's Signature Taylor Dailey Date _____
 Organization CES
 Certified by AEROMET Date 10-1-15

16.52% opacity

Appendix D

Pretest Calibrations

Meter Calibration

Operator	J.B	ORIFICES:	
Date	October 29, 2015	Orifice No. 1 Low	15
		K Factor	0.4170
Meter Number	7	Orifice No. 2 Mid	20
Previous Y Factor	1.005	K Factor	0.5341
		Orifice No. 3 High	23
		K Factor	0.6194

Meter Volume			ORIFICE 1 Low	ORIFICE 2 Mid	ORIFICE 3 High
	Final	Cubic Feet	233.858	239.534	245.306
	Initial	Cubic Feet	228.400	234.000	239.700
	Net	Cubic Feet	5.458	5.534	5.606

* must be greater than 5 cubic feet

Meter Temperature					
Inlet	Initial	Deg. F	59.0	60.0	61.0
	Final	Deg. F	60.0	61.0	62.0
Outlet	Initial	Deg. F	59.0	59.0	58.0
	Final	Deg. F	59.0	58.0	59.0
Avg. Meter Temp		Deg. F	59.3	59.5	60.0

Time	sec	600.0	480.0	420.0
Meter Delta H	inches H2O	0.90	1.50	2.00
Barometric Pressure	inches Hg	29.90	29.90	29.90

Room Temperature					
	Initial	Deg. F	59.0	60.0	60.0
	Final	Deg. F	60.0	60.0	61.0
Avg. Room Temperature		Deg. F	59.5	60.0	60.5

Pump Vacuum	inches Hg	21	21	19

Vcr (std)	dscf	5.470	5.603	5.682
Vm (std)	dscf	5.556	5.639	5.714
Y Factor (brackets)		0.985	0.993	0.994
Delta H@		1.665	1.730	1.722

+/- 2% Criteria			
Bracketing Percent of Y	0.63		0.37
	PASS		PASS

Average Y Factor	0.991	Must be between 0.98 and 1.02
Average Delta H@	1.706	

METER CALIBRATION WORK SHEET

Operator: JB

Meter I.D. 7

Date: Oct. 29, 2015

K Factor No. 1 0.4170

Previous Y Factor 1.005

K Factor No. 2 0.5341

Leak Check (P)

K Factor No. 3 0.6194

METER VOLUME	Units	1 Low	2 Mid	3 High
Final	ft ³	233.858	237.534	
Initial	ft ³	228.400	234.000	239.700
Meter Temperature				
INLET				
Initial	°F	59	60	61
Final	°F	60	61	62
OUTLET				
Initial	°F	59	59	58
Final	°F	59	58	59
Time	sec	600	480	420
Meter ΔH	in H ₂ O	0.90	1.50	2.00
Barometric Pressure	in. Hg	29.90	29.90	29.90
Room Temperature				
Initial	°F	59	60	60
Final	°F	60	60	61
Pump Vacuum	in. Hg	21	21	19

Appendix E

Post-test Calibrations

Meter Calibration

Operator	AG	ORIFICES:	
Date	July 8, 2015	Orifice No. 1 Low	15
		K Factor	0.4170
Meter Number	7	Orifice No. 2 Mid	20
Previous Y Factor	1.016	K Factor	0.5341
		Orifice No. 3 High	23
		K Factor	0.6194

Meter Volume			ORIFICE 1 Low	ORIFICE 2 Mid	ORIFICE 3 High
	Final	Cubic Feet	610.274	616.037	621.720
	Initial	Cubic Feet	604.900	610.500	616.100
	Net	Cubic Feet	5.374	5.537	5.620

* must be greater than 5 cubic feet

Meter Temperature

Inlet

Initial	Deg. F	69.0	70.0	70.0
Final	Deg. F	70.0	70.0	71.0

Outlet

Initial	Deg. F	69.0	70.0	70.0
Final	Deg. F	70.0	70.0	71.0

Avg. Meter Temp

Deg. F	69.5	70.0	70.5

Time	sec	600.0	480.0	420.0
Meter Delta H	inches H2O	0.91	1.50	2.10
Barometric Pressure	inches Hg	29.05	29.05	29.05

Room Temperature

Initial	Deg. F	69.0	69.0	70.0
Final	Deg. F	69.0	70.0	71.0

Avg. Room Temperature	Deg. F	69.0	69.5	70.5

Pump Vacuum	inches Hg	21	20	19

Vcr (std)	dscf	5.267	5.394	5.469

Vm (std)	dscf	5.213	5.374	5.458

Y Factor (brackets)		1.010	1.004	1.002

Delta H@		1.817	1.808	1.886

+/- 2% Criteria

Bracketing Percent of Y		0.50		0.34
		PASS		PASS

Average Y Factor	1.005	Must be between 0.98 and 1.02
Average Delta H@	1.837	

METER CALIBRATION WORK SHEET

Operator: AG

Meter I.D. 7

Date: 7/18/15

K Factor No. 1 0.4170

Previous Y Factor 1.016

K Factor No. 2 0.5341

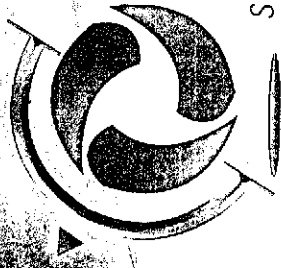
Leak Check (P)

K Factor No. 3 0.6194

METER VOLUME		Units	1 Low	2 Mid	3 High
Final		ft ³	610.274	616.037	621.720
Initial		ft ³	604.900	610.500	616.100
Meter Temperature					
INLET					
Initial		°F	69	70	70
Final		°F	70	70	71
OUTLET					
Initial		°F	69	70	70
Final		°F	70	70	71
Time		sec	600	480	420
Meter ΔH		in. H ₂ O	0.91	1.50	2.10
Barometric Pressure		in. Hg	29.05	29.05	29.05
Room Temperature					
Initial		°F	69	69	70
Final		°F	69	70	71
Pump Vacuum		in. Hg	21	20	19

Appendix F

Opacity Certification



AeroMet

Engineering, Inc.

Solutions for a Changing Environment

Certification of Visible Opacity Reading

Taylor Dailey

qualified to conduct EPA Method 9 Tests for visible opacity in accordance with the methods established for such qualification in 40 CFR Part 60 Appendix A.

Certification Date: April 02, 2015

Expiration Date: October 02, 2015

AeroMet Instructor: Josh Haslag

Appendix G

CEM Data

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191	Ethylene (100,3000) 191	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150c	Phenol 150c	CH4 wet	CO dry	CO2% dry	NOx NON
RUN 1_005	10/22/2015	14:45	4.38	2.44	14.75	20.94	15.80	13.57	1.07	-0.72	248.82	2193.87	0.59	1.49
RUN 1_005	10/22/2015	14:46	4.50	2.57	14.87	21.30	16.50	14.10	1.13	-0.77	255.34	2295.27	0.64	1.74
RUN 1_005	10/22/2015	14:47	4.63	2.67	14.81	21.77	16.85	14.59	1.26	-0.84	261.63	2390.47	0.65	1.77
RUN 1_005	10/22/2015	14:48	4.74	2.72	15.06	22.12	17.34	15.14	1.21	-0.84	267.96	2450.08	0.66	1.91
RUN 1_005	10/22/2015	14:49	4.84	2.65	15.27	22.66	17.98	15.69	1.20	-0.90	273.35	2521.92	0.69	2.12
RUN 1_005	10/22/2015	14:50	4.93	2.66	15.25	22.75	18.28	16.11	1.23	-0.96	276.03	2553.24	0.72	2.08
RUN 1_005	10/22/2015	14:51	5.03	2.83	15.22	23.16	18.68	16.64	1.17	-1.01	281.93	2637.29	0.76	2.18
RUN 1_005	10/22/2015	14:52	5.12	2.80	15.50	23.93	19.22	17.17	1.06	-0.97	288.10	2683.10	0.81	2.36
RUN 1_005	10/22/2015	14:53	5.16	2.77	15.58	24.08	19.37	17.61	0.99	-1.06	289.91	2732.77	0.82	2.44
RUN 1_005	10/22/2015	14:54	5.22	2.69	15.57	24.63	19.84	17.97	0.91	-1.08	294.85	2772.05	0.83	2.58
RUN 1_005	10/22/2015	14:55	5.29	2.64	15.43	24.82	19.90	18.65	0.85	-1.14	296.46	2818.65	0.83	2.73
RUN 1_005	10/22/2015	14:56	5.35	2.62	15.53	25.25	20.14	19.06	0.85	-1.19	298.78	2828.49	0.85	2.76
RUN 1_005	10/22/2015	14:57	5.42	2.64	15.47	25.52	20.18	19.47	0.80	-1.14	300.58	2868.94	0.88	2.89
RUN 1_005	10/22/2015	14:58	5.49	2.66	15.55	25.94	20.39	19.98	0.69	-1.19	304.00	2906.65	0.91	3.16
RUN 1_005	10/22/2015	14:59	5.54	2.59	15.57	26.12	20.49	20.30	0.73	-1.19	304.16	2914.65	0.91	3.11
RUN 1_005	10/22/2015	15:00	5.59	2.59	15.54	26.44	20.53	20.68	0.70	-1.30	306.51	2938.83	0.91	3.21
RUN 1_005	10/22/2015	15:01	5.65	2.51	15.48	26.79	20.68	21.21	0.63	-1.27	308.34	2957.63	0.91	3.41
RUN 1_005	10/22/2015	15:02	5.69	2.42	15.53	27.07	20.51	21.56	0.63	-1.35	310.73	2970.93	0.91	3.42
RUN 1_005	10/22/2015	15:03	5.73	2.35	15.56	27.38	20.68	21.98	0.64	-1.38	312.94	2992.59	0.94	3.59
RUN 1_005	10/22/2015	15:04	5.78	2.30	15.72	28.10	20.73	22.29	0.56	-1.38	315.97	3034.85	0.96	3.60
RUN 1_005	10/22/2015	15:05	5.83	2.29	15.72	28.15	20.55	22.61	0.56	-1.36	317.16	3029.04	0.95	3.76
RUN 1_005	10/22/2015	15:06	5.86	1.96	15.76	28.88	20.92	22.89	0.36	-1.47	319.43	3055.42	0.94	3.84
RUN 1_005	10/22/2015	15:07	5.88	2.05	15.81	29.19	21.07	23.39	0.34	-1.46	321.00	3038.03	0.94	4.00
RUN 1_005	10/22/2015	15:08	5.90	1.98	15.83	29.53	20.87	23.74	0.36	-1.50	322.87	3057.26	0.94	4.17
RUN 1_005	10/22/2015	15:09	5.95	1.93	16.07	30.09	21.56	23.96	0.30	-1.56	327.87	3078.58	0.98	4.20
RUN 1_005	10/22/2015	15:10	5.99	1.94	16.18	30.30	21.39	24.35	0.24	-1.70	327.74	3098.32	0.99	4.28
RUN 1_005	10/22/2015	15:11	6.02	1.92	16.25	30.59	21.34	24.69	0.16	-1.65	329.54	3077.84	0.98	4.36
RUN 1_005	10/22/2015	15:12	6.05	1.99	16.23	30.84	21.56	24.92	0.22	-1.72	330.73	3088.67	0.97	4.39
RUN 1_005	10/22/2015	15:13	6.09	1.97	16.35	31.24	21.69	25.27	0.22	-1.84	334.26	3083.07	0.96	4.57
RUN 1_005	10/22/2015	15:14	6.11	1.80	16.49	31.55	21.64	25.51	0.18	-1.76	334.64	3079.78	0.96	4.54
RUN 1_005	10/22/2015	15:15	6.13	1.88	16.61	32.33	21.89	25.81	0.17	-1.78	338.05	3092.53	0.97	4.69
RUN 1_005	10/22/2015	15:16	6.16	1.74	16.72	32.52	21.76	26.22	0.20	-1.86	338.45	3097.46	0.99	4.88
RUN 1_005	10/22/2015	15:17	6.18	1.74	16.63	32.80	21.57	26.29	0.09	-1.86	338.41	3102.41	0.98	4.92
RUN 1_005	10/22/2015	15:18	6.20	1.72	16.71	32.97	21.72	26.58	0.14	-1.90	340.05	3091.09	0.97	5.07
RUN 1_005	10/22/2015	15:19	6.23	1.71	16.86	33.46	21.88	26.93	0.11	-1.92	341.03	3090.55	0.97	5.05

Spectrum	Date	Time	H2O%(40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150c	Phenol 150c	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 1_005	10/22/2015	14:45	4.38	2.44	14.75	20.94	15.80	13.57	1.07	-0.72	248.82	2193.87	0.59	1.49
RUN 1_005	10/22/2015	15:20	6.25	1.61	16.87	33.49	21.97	26.98	0.13	-1.96	341.28	3057.47	0.97	5.24
RUN 1_005	10/22/2015	15:21	6.25	1.63	16.97	33.76	21.90	27.21	0.09	-1.95	342.85	3068.13	0.98	5.31
RUN 1_005	10/22/2015	15:22	6.28	1.65	17.22	34.26	22.20	27.53	0.08	-2.04	345.53	3050.34	0.99	5.22
RUN 1_005	10/22/2015	15:23	6.30	1.60	17.40	34.88	22.28	27.75	0.07	-2.09	348.56	3053.39	0.99	5.33
RUN 1_005	10/22/2015	15:24	6.29	1.62	17.55	35.19	22.52	27.90	0.09	-2.16	350.57	3037.04	0.99	5.47
RUN 1_005	10/22/2015	15:25	6.32	1.69	17.58	35.34	22.53	28.09	0.09	-2.16	350.73	3044.35	0.97	5.55
RUN 1_005	10/22/2015	15:26	6.31	1.51	17.69	35.65	22.62	28.30	0.07	-2.08	353.44	3030.75	0.96	5.65
RUN 1_005	10/22/2015	15:27	6.32	1.52	17.97	36.11	23.02	28.50	0.11	-2.17	355.04	3021.55	0.98	5.72
RUN 1_005	10/22/2015	15:28	6.32	1.49	18.13	36.51	23.21	28.68	0.05	-2.12	356.54	2999.33	0.99	5.81
RUN 1_005	10/22/2015	15:29	6.27	1.38	17.64	35.31	22.46	28.48	0.13	-2.03	345.38	2882.21	1.00	6.13
RUN 1_005	10/22/2015	15:30	6.40	1.52	16.05	32.09	20.65	30.35	0.11	-2.34	312.61	2592.45	0.97	6.28
RUN 1_005	10/22/2015	15:31	6.61	1.41	14.21	28.28	17.21	31.89	0.44	-2.46	274.72	2263.55	0.92	6.28
RUN 1_005	10/22/2015	15:32	6.78	1.05	12.62	25.12	14.51	33.09	0.29	-2.40	241.32	1976.12	0.86	6.11
RUN 1_005	10/22/2015	15:33	6.35	0.94	6.11	12.62	2.15	27.82	0.42	-1.88	99.97	810.98	0.50	2.61
RUN 1_005	10/22/2015	15:34	4.97	0.69	3.26	6.42	0.82	13.22	0.73	-1.03	51.69	264.25	0.29	1.20
RUN 1_005	10/22/2015	15:35	5.83	0.76	11.72	23.58	14.57	27.58	-0.10	-2.25	216.78	1594.69	0.90	6.01
RUN 1_005	10/22/2015	15:36	6.55	0.72	13.37	27.41	11.90	32.65	0.12	-2.28	249.35	1644.33	0.88	5.88
RUN 1_005	10/22/2015	15:37	6.71	0.93	14.50	29.97	13.01	32.26	0.44	-2.14	275.95	1740.01	0.88	6.03
RUN 1_005	10/22/2015	15:38	6.73	0.91	15.32	31.49	13.84	31.88	0.35	-2.21	290.23	1858.25	0.87	6.01
RUN 1_005	10/22/2015	15:39	6.73	1.02	16.04	32.90	14.77	31.74	0.33	-2.14	304.17	1961.32	0.88	5.88
RUN 1_005	10/22/2015	15:40	6.72	1.17	16.44	33.85	15.47	31.60	0.38	-2.17	312.14	2082.38	0.90	5.91
RUN 1_005	10/22/2015	15:41	6.71	1.02	16.69	34.59	16.26	31.38	0.22	-2.14	318.64	2167.26	0.91	5.98
RUN 1_005	10/22/2015	15:42	6.70	1.02	17.02	35.18	17.04	31.35	0.16	-2.24	323.92	2276.86	0.91	6.10
RUN 1_005	10/22/2015	15:43	6.68	1.08	17.32	35.51	17.57	31.25	0.22	-2.14	328.25	2337.00	0.88	6.08
RUN 1_005	10/22/2015	15:44	6.67	1.11	17.61	36.22	18.31	31.24	0.20	-2.21	333.64	2401.98	0.89	5.98
RUN 1_005	10/22/2015	15:45	6.65	1.12	18.11	36.94	19.27	31.20	0.24	-2.30	339.35	2471.60	0.90	6.08
RUN 1_005	10/22/2015	15:46	6.63	1.14	18.32	37.14	19.66	31.19	0.21	-2.31	343.00	2507.19	0.91	6.11
RUN 1_005	10/22/2015	15:47	6.63	1.11	18.38	37.38	20.02	31.13	0.23	-2.36	344.79	2554.30	0.92	6.19
RUN 1_005	10/22/2015	15:48	6.63	1.23	18.64	37.72	20.57	31.20	0.20	-2.30	347.21	2583.41	0.92	6.37
RUN 1_005	10/22/2015	15:49	6.63	1.17	18.66	38.02	20.68	31.19	0.26	-2.34	348.05	2613.35	0.90	6.43
RUN 1_005	10/22/2015	15:50	6.63	1.22	18.91	38.32	21.38	31.28	0.28	-2.34	352.38	2629.94	0.90	6.45
RUN 1_005	10/22/2015	15:52	6.63	1.26	18.85	38.63	21.59	31.31	0.26	-2.34	354.72	2671.51	0.92	6.46
RUN 1_005	10/22/2015	15:53	6.63	1.13	18.87	38.53	21.79	31.36	0.31	-2.37	354.76	2675.79	0.92	6.51
RUN 1_005	10/22/2015	15:54	6.62	1.13	18.92	38.79	21.95	31.24	0.32	-2.52	355.35	2712.47	0.92	6.58

Spectrum	Date	Time	H2O%(40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Phenol 150C	CH4 wet	CO dry	CO2% dry	N2O-XON
RUN 1_005	10/22/2015	14:45	4.38	2.44	14.75	20.94	15.80	13.57	1.07	-0.72	248.82	2193.87	1.49
RUN 1_005	10/22/2015	15:55	6.63	1.28	19.01	38.83	22.46	31.37	0.09	-2.42	357.21	2710.41	6.73
RUN 1_005	10/22/2015	15:56	6.62	1.23	19.16	39.36	22.72	31.46	0.11	-2.47	358.45	2728.54	6.75
RUN 1_005	10/22/2015	15:57	6.62	1.32	19.27	39.45	23.21	31.49	0.11	-2.47	360.15	2730.76	6.72
RUN 1_005	10/22/2015	15:58	6.63	1.19	19.47	39.61	23.52	31.51	0.14	-2.49	360.76	2759.76	6.89
RUN 1_005	10/22/2015	15:59	6.59	1.34	14.02	27.18	14.90	32.05	0.35	-2.57	190.22	1575.09	4.14
RUN 1_005	10/22/2015	16:00	5.92	1.15	12.83	22.15	16.58	26.06	0.27	-2.10	167.20	1387.65	3.13
RUN 1_005	10/22/2015	16:01	6.68	1.39	16.32	27.82	16.29	34.22	0.56	-2.62	250.88	2062.32	4.44
RUN 1_005	10/22/2015	16:02	7.08	1.38	14.49	24.40	12.46	36.12	0.41	-2.69	214.06	1791.14	4.09
RUN 1_005	10/22/2015	16:03	7.32	1.33	12.70	20.71	9.03	37.66	0.49	-2.69	179.41	1524.62	3.89
RUN 1_005	10/22/2015	16:04	6.12	1.18	2.88	5.60	-6.14	26.25	0.66	-1.44	37.27	238.13	0.34
RUN 1_005	10/22/2015	16:05	4.73	0.87	1.24	2.41	-4.46	13.45	0.63	-0.76	15.95	104.38	0.21
RUN 1_005	10/22/2015	16:06	4.05	0.59	0.97	1.82	-2.46	8.21	0.61	-0.60	13.20	85.46	0.18
RUN 1_005	10/22/2015	16:07	3.68	0.53	0.96	1.61	-1.18	5.88	0.50	-0.58	14.50	94.91	0.20
RUN 1_005	10/22/2015	16:08	3.62	0.49	1.18	2.01	-0.19	4.71	0.46	-0.56	18.03	117.12	0.23
RUN 1_005	10/22/2015	16:09	3.51	0.56	1.45	2.33	0.61	4.41	0.58	-0.68	21.69	144.17	0.26
RUN 1_005	10/22/2015	16:10	3.31	0.46	1.40	2.41	0.76	4.27	0.51	-0.60	21.06	139.05	0.25
RUN 1_005	10/22/2015	16:11	3.15	0.40	1.43	2.50	1.01	4.08	0.47	-0.59	21.74	143.16	0.26
RUN 1_005	10/22/2015	16:12	3.05	0.34	1.07	1.78	0.21	3.90	0.40	-0.51	16.03	105.30	0.21
RUN 1_005	10/22/2015	16:13	3.00	0.28	1.09	1.71	0.38	3.68	0.41	-0.45	15.98	104.64	0.21
RUN 1_005	10/22/2015	16:14	2.95	0.36	0.98	1.76	0.29	3.34	0.43	-0.54	14.57	94.87	0.19
RUN 1_005	10/22/2015	16:15	2.90	0.47	0.92	1.39	0.19	3.16	0.45	-0.49	13.11	83.52	0.17
RUN 1_005	10/22/2015	16:16	2.75	0.36	0.85	1.36	0.23	2.84	0.48	-0.48	12.07	75.75	0.16
RUN 1_005	10/22/2015	16:17	2.67	0.24	0.92	1.49	0.62	2.60	0.43	-0.43	14.00	89.38	0.18
RUN 1_005	10/22/2015	16:18	2.56	0.24	0.94	1.62	0.80	2.74	0.39	-0.46	14.88	96.05	0.19
RUN 1_005	10/22/2015	16:19	2.53	0.28	0.95	1.79	0.65	2.84	0.39	-0.45	14.75	95.28	0.18
RUN 1_005	10/22/2015	16:20	2.48	0.26	0.79	1.55	0.47	2.82	0.44	-0.49	12.94	81.89	0.17
RUN 1_005	10/22/2015	16:21	2.42	0.24	0.82	1.47	0.45	2.65	0.41	-0.46	12.87	80.54	0.17
RUN 1_005	10/22/2015	16:22	2.41	0.22	0.99	1.62	0.94	2.81	0.32	-0.41	15.48	99.93	0.20
RUN 1_005	10/22/2015	16:23	2.38	0.22	0.92	1.54	0.76	2.87	0.38	-0.45	14.22	90.23	0.18
RUN 1_005	10/22/2015	16:24	2.33	0.15	0.67	1.20	0.25	2.81	0.45	-0.38	10.73	66.02	0.14
RUN 1_005	10/22/2015	16:25	2.32	0.23	0.87	1.47	0.66	2.54	0.40	-0.38	13.30	84.18	0.17
RUN 1_005	10/22/2015	16:26	2.28	0.13	0.78	1.34	0.53	2.62	0.40	-0.44	11.76	73.34	0.16
RUN 1_005	10/22/2015	16:27	2.23	0.16	0.66	1.17	0.16	2.44	0.43	-0.44	10.08	60.82	0.13
RUN 1_005	10/22/2015	16:28	2.19	0.19	0.69	1.27	0.37	2.34	0.38	-0.33	11.05	68.01	0.14

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150c	Phenol 150c	CH4 wet	CO dry	CO2% dry	1/yr dry	1/yr XON
RUN 1_005	10/22/2015	14:45	4.38	2.44	14.75	20.94	15.80	13.57	1.07	-0.72	248.82	2193.87	0.59	1.49	
RUN 1_005	10/22/2015	16:29	2.14	0.13	0.66	1.24	0.42	2.18	0.37	-0.34	10.73	65.86	0.14	-0.16	
RUN 1_005	10/22/2015	16:30	3.25	0.21	2.36	4.97	7.66	11.33	-0.05	-1.27	31.80	112.66	0.49	1.72	
RUN 1_005	10/22/2015	16:31	5.11	0.47	4.85	12.69	1.94	26.82	0.53	-2.08	81.33	229.71	0.39	1.88	
RUN 1_005	10/22/2015	16:32	5.86	0.50	7.00	17.05	1.86	29.65	0.65	-2.09	119.39	424.79	0.40	1.89	
RUN 1_005	10/22/2015	16:33	6.13	0.61	8.57	19.89	3.27	29.77	0.83	-2.15	144.83	751.78	0.42	2.22	
RUN 1_005	10/22/2015	16:34	6.26	0.76	9.96	22.02	4.87	29.44	0.77	-2.05	167.48	952.23	0.42	2.39	
RUN 1_005	10/22/2015	16:35	6.30	0.87	10.96	23.91	6.49	29.06	0.80	-2.07	186.53	1159.63	0.44	2.65	
RUN 1_005	10/22/2015	16:36	6.31	0.93	11.77	25.74	8.00	28.70	0.95	-2.05	203.45	1337.33	0.42	2.72	
RUN 1_005	10/22/2015	16:37	6.35	1.13	12.66	27.11	9.49	28.54	0.95	-2.16	219.60	1510.05	0.44	2.97	
RUN 1_005	10/22/2015	16:38	6.36	1.21	13.20	28.33	10.69	28.24	0.91	-2.07	230.17	1649.16	0.45	3.12	
RUN 1_005	10/22/2015	16:39	6.38	1.14	13.90	29.56	12.01	28.04	0.91	-2.16	241.88	1773.16	0.46	3.33	
RUN 1_005	10/22/2015	16:40	6.42	1.31	14.20	30.22	12.91	28.08	0.95	-2.10	250.70	1891.09	0.45	3.43	
RUN 1_005	10/22/2015	16:41	6.41	1.24	14.65	31.27	13.96	27.89	0.96	-2.12	260.39	1968.39	0.46	3.54	
RUN 1_005	10/22/2015	16:42	6.40	1.41	15.19	32.16	15.19	27.81	0.97	-2.13	269.86	2061.66	0.47	3.83	
RUN 1_005	10/22/2015	16:43	6.37	1.38	15.59	32.87	16.17	27.84	0.96	-2.14	276.49	2111.66	0.47	4.05	
RUN 1_005	10/22/2015	16:44	6.38	1.45	15.84	33.55	16.78	27.71	0.94	-2.18	281.79	2185.08	0.48	4.02	
RUN 1_005	10/22/2015	16:45	6.37	1.46	16.20	34.21	18.01	27.76	0.80	-2.21	290.19	2243.63	0.51	4.16	
RUN 1_005	10/22/2015	16:46	6.36	1.37	16.57	34.87	18.56	27.66	0.79	-2.19	298.04	2305.53	0.52	4.30	
RUN 1_005	10/22/2015	16:47	6.38	1.31	16.82	35.32	19.15	27.63	0.78	-2.19	304.13	2342.94	0.55	4.39	
RUN 1_005	10/22/2015	16:48	6.36	1.46	17.21	36.03	19.83	27.58	0.71	-2.23	311.85	2410.79	0.58	4.51	
RUN 1_005	10/22/2015	16:49	6.41	1.43	17.40	36.10	20.24	27.72	0.73	-2.31	316.22	2431.05	0.60	4.40	
Average Wet			5.44	1.33	12.35	23.77	13.87	21.84	0.48	-1.61	231.02				
Average Dry				1.41	13.06	25.14	14.67	23.10	0.51	0.13	244.31	1902.92	0.70	3.41	
DL			0.02	0.19	0.09	0.23	0.21	0.10	0.10	0.13	0.09	0.13	0.01	0.16	
Flow DSCFM															
418.0															
lb/hr				0.003	0.024	0.049	0.042	0.048	0.002	0.001	0.255	3.469		0.010	

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191	Ethylene (100,3000) 191	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 2_005	10/22/2015	17:01	6.36	1.41	18.78	38.63	25.61	24.46	0.80	-2.53	346.76	2672.60	0.76	5.42
RUN 2_005	10/22/2015	17:02	6.38	1.24	18.89	38.80	24.37	26.97	0.75	-2.59	347.61	2683.21	0.77	5.59
RUN 2_005	10/22/2015	17:03	6.40	1.36	19.04	39.36	24.39	28.07	0.76	-2.59	349.14	2707.08	0.79	5.57
RUN 2_005	10/22/2015	17:04	6.40	1.28	19.01	39.03	24.12	28.57	0.77	-2.68	348.67	2705.85	0.80	5.58
RUN 2_005	10/22/2015	17:05	6.39	1.25	19.04	39.38	24.30	28.78	0.67	-2.54	350.67	2726.34	0.80	5.67
RUN 2_005	10/22/2015	17:06	6.40	1.29	19.00	39.44	24.24	29.08	0.62	-2.60	351.29	2737.01	0.80	5.72
RUN 2_005	10/22/2015	17:08	6.39	1.25	19.06	39.55	24.38	29.28	0.62	-2.62	352.07	2744.17	0.79	5.64
RUN 2_005	10/22/2015	17:09	6.39	1.35	19.05	39.46	24.25	29.37	0.65	-2.70	352.41	2751.61	0.80	5.89
RUN 2_005	10/22/2015	17:10	6.41	1.23	19.14	39.67	24.52	29.52	0.56	-2.72	354.40	2768.96	0.82	5.81
RUN 2_005	10/22/2015	17:11	6.40	1.25	19.08	39.56	24.30	29.59	0.57	-2.68	353.47	2756.67	0.82	5.96
RUN 2_005	10/22/2015	17:12	6.39	1.34	19.20	39.70	24.34	29.74	0.57	-2.69	355.27	2754.48	0.82	5.96
RUN 2_005	10/22/2015	17:13	6.41	1.23	19.10	39.76	24.48	29.95	0.54	-2.78	355.59	2766.76	0.81	6.09
RUN 2_005	10/22/2015	17:14	6.43	1.33	19.16	39.79	24.39	30.26	0.55	-2.73	355.54	2763.65	0.81	5.95
RUN 2_005	10/22/2015	17:15	6.43	1.32	19.16	39.73	24.22	30.24	0.55	-2.80	356.22	2785.94	0.82	6.03
RUN 2_005	10/22/2015	17:16	6.46	1.32	19.05	39.62	24.37	30.41	0.45	-2.72	354.67	2781.72	0.83	6.01
RUN 2_005	10/22/2015	17:17	6.48	1.25	18.88	39.23	23.87	30.52	0.46	-2.72	353.37	2785.29	0.84	6.13
RUN 2_005	10/22/2015	17:18	6.50	1.29	18.97	39.28	23.96	30.57	0.50	-2.80	353.37	2776.34	0.83	6.05
RUN 2_005	10/22/2015	17:19	6.51	1.27	18.86	39.28	23.94	30.79	0.51	-2.83	352.63	2778.96	0.83	6.11
RUN 2_005	10/22/2015	17:20	6.52	1.29	18.87	39.36	23.90	30.83	0.44	-2.72	352.97	2759.99	0.82	6.03
RUN 2_005	10/22/2015	17:21	6.52	1.26	18.92	39.32	23.81	30.95	0.48	-2.79	353.54	2784.68	0.82	6.08
RUN 2_005	10/22/2015	17:22	6.55	1.34	18.86	39.28	23.87	31.14	0.48	-2.81	352.59	2765.71	0.83	6.04
RUN 2_005	10/22/2015	17:23	6.55	1.37	18.81	39.13	23.66	31.23	0.43	-2.80	351.72	2778.83	0.84	6.06
RUN 2_005	10/22/2015	17:24	6.55	1.34	18.87	39.19	23.80	31.33	0.46	-2.80	351.71	2755.26	0.83	6.10
RUN 2_005	10/22/2015	17:25	6.58	1.31	18.80	38.95	23.61	31.58	0.52	-2.91	349.72	2756.73	0.82	6.07
RUN 2_005	10/22/2015	17:26	6.58	1.38	18.72	38.92	23.38	31.57	0.61	-2.72	349.81	2747.54	0.81	6.12
RUN 2_005	10/22/2015	17:27	6.60	1.23	18.89	39.13	23.55	31.59	0.65	-2.75	350.97	2765.84	0.82	6.18
RUN 2_005	10/22/2015	17:28	6.60	1.29	18.68	38.85	23.25	31.70	0.69	-2.74	347.62	2735.48	0.83	6.09
RUN 2_005	10/22/2015	17:30	6.52	1.25	17.86	36.99	22.78	31.56	0.68	-2.59	332.19	2575.88	0.83	6.42
RUN 2_005	10/22/2015	17:31	6.72	1.59	15.87	33.07	20.05	33.04	0.81	-3.01	295.25	2268.18	0.80	6.15
RUN 2_005	10/22/2015	17:32	6.96	1.50	14.11	29.07	16.31	34.77	0.92	-3.09	257.65	1963.74	0.74	5.87
RUN 2_005	10/22/2015	17:33	7.57	1.53	12.32	25.43	12.33	36.54	0.89	-3.06	223.53	1699.25	0.70	5.56

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 19.1	Ethylene (100,3000) 19.1	Ethane (500) 191C	Acetaldehyde (1000) 19.1	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 2_005	10/22/2015	17:01	6.36	1.41	18.78	38.63	25.61	24.46	0.80	-2.53	346.76	2672.60	0.76	5.42
RUN 2_005	10/22/2015	17:34	6.96	1.32	3.49	8.23	-5.65	32.25	1.21	-2.18	56.47	333.73	0.22	0.97
RUN 2_005	10/22/2015	17:35	6.11	1.12	7.58	15.47	3.56	24.44	1.00	-1.68	118.77	879.08	0.51	3.51
RUN 2_005	10/22/2015	17:36	6.94	1.22	12.29	26.11	13.84	28.12	0.69	-2.67	218.34	1448.97	0.72	5.58
RUN 2_005	10/22/2015	17:37	7.42	1.26	14.05	29.65	11.95	33.46	0.90	-2.81	249.79	1536.99	0.72	5.42
RUN 2_005	10/22/2015	17:38	7.56	1.36	15.00	32.00	12.01	34.75	1.15	-2.83	267.15	1648.66	0.73	5.41
RUN 2_005	10/22/2015	17:39	7.58	1.33	15.61	33.16	12.55	34.84	1.22	-2.80	279.71	1765.59	0.75	5.36
RUN 2_005	10/22/2015	17:40	7.60	1.36	16.00	33.88	13.25	34.78	1.16	-2.84	288.56	1869.05	0.76	5.22
RUN 2_005	10/22/2015	17:41	7.56	1.44	16.26	34.33	13.66	34.68	1.17	-2.84	293.46	1962.92	0.77	5.23
RUN 2_005	10/22/2015	17:42	7.55	1.38	16.57	34.92	14.36	34.49	1.21	-2.75	301.03	2048.64	0.77	5.19
RUN 2_005	10/22/2015	17:43	7.55	1.34	16.74	34.99	14.91	34.33	1.22	-2.80	304.61	2128.13	0.77	5.14
RUN 2_005	10/22/2015	17:44	7.50	1.35	16.86	35.06	15.35	34.31	1.25	-2.77	309.37	2188.80	0.77	5.09
RUN 2_005	10/22/2015	17:45	7.49	1.38	17.00	34.97	15.70	34.13	1.25	-2.74	311.89	2261.63	0.79	5.20
RUN 2_005	10/22/2015	17:46	7.45	1.33	16.89	34.73	16.16	34.05	1.25	-2.79	313.92	2312.26	0.80	5.13
RUN 2_005	10/22/2015	17:47	7.44	1.39	16.89	34.39	15.96	34.19	1.20	-2.67	315.69	2368.86	0.78	5.01
RUN 2_005	10/22/2015	17:48	7.44	1.42	16.79	34.26	16.37	34.00	1.24	-2.61	317.92	2428.84	0.78	5.03
RUN 2_005	10/22/2015	17:49	7.45	1.39	16.51	33.54	15.99	34.11	1.35	-2.72	314.75	2461.99	0.77	5.02
RUN 2_005	10/22/2015	17:50	7.46	1.46	15.54	31.64	14.86	34.32	1.34	-2.68	296.11	2292.80	0.77	5.01
RUN 2_005	10/22/2015	17:51	7.43	1.44	15.40	31.10	14.25	34.18	1.33	-2.60	293.85	2330.36	0.76	5.08
RUN 2_005	10/22/2015	17:53	7.43	1.56	15.55	31.20	14.32	34.25	1.44	-2.65	297.50	2412.85	0.74	5.03
RUN 2_005	10/22/2015	17:54	7.41	1.50	15.66	31.30	14.46	34.12	1.41	-2.54	301.96	2523.06	0.75	4.99
RUN 2_005	10/22/2015	17:55	7.38	1.55	15.71	31.50	15.09	34.11	1.38	-2.53	305.41	2609.25	0.75	4.84
RUN 2_005	10/22/2015	17:56	7.36	1.56	15.68	31.38	14.83	34.24	1.37	-2.50	306.09	2699.73	0.74	4.90
RUN 2_005	10/22/2015	17:57	7.33	1.55	15.67	31.51	15.00	34.14	1.39	-2.56	309.13	2768.91	0.74	4.93
RUN 2_005	10/22/2015	17:58	7.32	1.57	15.79	31.76	15.24	34.11	1.36	-2.45	312.13	2855.20	0.75	4.92
RUN 2_005	10/22/2015	17:59	7.27	1.47	9.52	18.71	7.42	34.58	1.16	-2.70	127.09	1210.48	0.67	2.19
RUN 2_005	10/22/2015	18:00	6.92	1.30	13.13	22.27	10.80	31.05	1.20	-2.09	206.41	2023.01	1.29	2.81
RUN 2_005	10/22/2015	18:01	7.40	1.67	13.33	22.38	10.31	34.68	1.19	-2.71	212.92	2099.58	1.49	3.33
RUN 2_005	10/22/2015	18:02	7.76	1.72	11.84	19.60	6.25	38.10	1.40	-2.68	182.79	1818.16	1.56	3.14
RUN 2_005	10/22/2015	18:03	7.86	1.73	8.85	14.78	0.78	39.73	1.30	-2.75	124.17	1241.27	1.38	2.43
RUN 2_005	10/22/2015	18:04	6.80	1.50	2.21	4.83	-11.70	33.01	1.43	-1.69	28.51	224.35	0.35	0.03

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150c	Phenol 150c	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 2_005	10/22/2015	17:01	6.36	1.41	18.78	38.63	25.61	24.46	0.80	-2.53	346.76	2672.60	0.76	5.42
RUN 2_005	10/22/2015	18:05	5.56	1.23	1.25	2.74	-9.07	21.64	1.27	-1.12	15.33	118.84	0.21	-0.44
RUN 2_005	10/22/2015	18:06	4.78	1.01	0.94	1.98	-5.97	14.49	1.17	-0.85	12.94	98.36	0.18	-0.40
RUN 2_005	10/22/2015	18:07	4.28	0.98	1.02	1.95	-4.09	10.95	0.98	-0.77	14.37	110.71	0.19	-0.28
RUN 2_005	10/22/2015	18:08	3.93	0.85	0.82	1.59	-3.40	8.86	0.92	-0.65	12.07	89.66	0.17	-0.21
RUN 2_005	10/22/2015	18:09	3.65	0.78	0.94	1.59	-2.19	7.55	0.80	-0.62	14.21	106.80	0.19	-0.32
RUN 2_005	10/22/2015	18:10	3.46	0.70	0.89	1.71	-1.49	6.38	0.70	-0.55	14.32	108.31	0.19	-0.27
RUN 2_005	10/22/2015	18:11	3.29	0.68	0.91	1.68	-1.29	5.62	0.76	-0.62	14.00	104.90	0.19	-0.31
RUN 2_005	10/22/2015	18:12	3.17	0.68	1.14	1.91	-0.46	5.08	0.60	-0.53	17.30	129.20	0.22	-0.25
RUN 2_005	10/22/2015	18:13	3.06	0.58	0.98	1.61	-0.53	4.82	0.63	-0.53	15.04	113.62	0.19	-0.26
RUN 2_005	10/22/2015	18:25	2.43	0.42	1.03	1.65	0.17	4.00	0.59	-0.48	16.04	118.90	0.20	-0.08
RUN 2_005	10/22/2015	18:26	2.41	0.35	1.39	2.35	1.00	3.90	0.56	-0.50	22.28	169.06	0.25	0.03
RUN 2_005	10/22/2015	18:27	2.40	0.44	1.17	2.18	0.96	4.02	0.57	-0.57	20.35	154.60	0.24	0.10
RUN 2_005	10/22/2015	18:28	2.39	0.36	1.13	1.90	0.64	4.15	0.49	-0.50	18.16	139.12	0.22	-0.04
RUN 2_005	10/22/2015	18:29	2.37	0.37	1.36	2.26	0.86	4.17	0.54	-0.47	22.23	161.22	0.26	0.10
RUN 2_005	10/22/2015	18:30	3.22	0.65	1.62	3.41	7.93	6.16	0.23	-1.00	26.41	81.82	0.45	1.27
RUN 2_005	10/22/2015	18:31	4.88	1.06	3.43	8.91	3.73	16.97	0.92	-1.95	69.13	212.28	0.38	1.29
RUN 2_005	10/22/2015	18:32	6.00	1.10	5.83	14.49	-0.61	27.72	1.15	-2.12	116.57	434.15	0.38	1.18
RUN 2_005	10/22/2015	18:33	6.55	1.08	7.25	17.53	-1.37	31.20	1.34	-2.09	144.81	807.74	0.41	1.33
RUN 2_005	10/22/2015	18:34	6.80	1.05	8.46	19.85	-0.50	31.65	1.48	-1.91	168.14	1027.44	0.39	1.45
RUN 2_005	10/22/2015	18:35	7.01	1.03	9.47	21.62	0.63	31.55	1.65	-1.92	187.10	1256.88	0.41	1.62
RUN 2_005	10/22/2015	18:37	7.19	1.07	10.30	23.23	1.95	31.48	1.81	-1.99	202.75	1437.15	0.39	1.74
RUN 2_005	10/22/2015	18:38	7.98	1.18	10.92	24.39	2.61	31.23	2.18	-2.18	212.72	1613.61	0.40	1.74
RUN 2_005	10/22/2015	18:39	7.73	1.30	11.42	25.64	4.05	30.83	2.14	-2.17	226.20	1759.09	0.41	1.94
RUN 2_005	10/22/2015	18:40	7.95	1.23	12.06	26.85	5.29	30.70	2.22	-2.08	236.50	1902.67	0.41	1.95
RUN 2_005	10/22/2015	18:41	7.85	1.18	12.53	27.82	6.55	30.47	2.06	-2.18	244.35	1997.76	0.42	1.93
RUN 2_005	10/22/2015	18:42	8.21	1.20	12.92	28.68	7.29	30.21	2.28	-2.34	252.09	2091.97	0.42	2.10
RUN 2_005	10/22/2015	18:43	7.79	1.23	13.56	29.72	9.18	30.14	2.12	-2.28	261.20	2169.90	0.42	2.21
RUN 2_005	10/22/2015	18:44	8.08	1.32	13.90	30.30	9.79	30.08	2.26	-2.38	266.26	2237.84	0.43	2.21
RUN 2_005	10/22/2015	18:45	7.81	1.34	14.37	31.38	11.19	29.71	2.21	-2.41	275.53	2293.29	0.44	2.38
RUN 2_005	10/22/2015	18:46	7.75	1.24	14.67	32.26	12.38	29.87	2.04	-2.36	282.75	2345.52	0.45	2.51

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 2_005	10/22/2015	17:01	6.36	1.41	18.78	38.63	25.61	24.46	0.80	-2.53	346.76	2672.60	0.76	5.42
RUN 2_005	10/22/2015	18:47	7.94	1.41	14.94	32.67	13.01	29.78	2.26	-2.33	286.51	2374.54	0.43	2.38
RUN 2_005	10/22/2015	18:48	8.06	1.47	15.36	33.64	13.87	29.84	2.19	-2.42	292.25	2418.54	0.45	2.50
RUN 2_005	10/22/2015	18:49	7.96	1.51	15.69	34.13	14.84	29.90	2.09	-2.40	296.74	2443.92	0.46	2.54
RUN 2_005	10/22/2015	18:50	7.96	1.41	15.92	34.55	15.29	29.95	2.09	-2.46	302.02	2462.43	0.47	2.60
RUN 2_005	10/22/2015	18:51	7.91	1.43	16.32	35.24	16.12	29.88	2.07	-2.51	309.10	2503.28	0.50	2.65
RUN 2_005	10/22/2015	18:52	8.38	1.54	16.72	35.75	16.37	30.39	2.30	-2.56	313.49	2515.26	0.54	2.64
RUN 2_005	10/22/2015	18:53	7.97	1.43	16.98	36.37	17.28	29.90	2.15	-2.59	320.35	2551.59	0.56	2.64
RUN 2_005	10/22/2015	18:54	8.38	1.37	17.33	36.87	17.69	30.53	2.19	-2.63	325.50	2572.22	0.58	2.71
RUN 2_005	10/22/2015	18:55	9.43	1.73	17.31	36.77	16.66	30.86	2.84	-2.88	323.58	2597.11	0.60	2.84
RUN 2_005	10/22/2015	18:56	8.55	1.46	17.72	37.41	18.11	30.14	2.28	-2.66	329.59	2607.87	0.61	3.14
RUN 2_005	10/22/2015	18:57	8.15	1.40	17.81	37.82	19.33	30.20	2.05	-2.84	333.55	2645.52	0.63	2.72
RUN 2_005	10/22/2015	18:58	8.58	1.45	17.80	37.57	19.00	30.71	2.21	-2.79	332.55	2638.75	0.64	2.71
RUN 2_005	10/22/2015	19:00	7.92	1.35	18.15	38.10	20.19	30.35	1.97	-2.73	336.23	2657.36	0.66	2.78
RUN 2_005	10/22/2015	19:01	8.93	1.63	18.02	37.79	19.15	31.31	2.54	-2.93	333.66	2660.79	0.66	2.87
RUN 2_005	10/22/2015	19:02	8.56	1.42	18.19	38.19	19.77	31.03	2.23	-2.86	335.72	2685.20	0.67	2.77
RUN 2_005	10/22/2015	19:03	8.37	1.48	18.35	38.34	20.15	31.18	2.04	-2.98	337.51	2683.34	0.68	2.89
RUN 2_005	10/22/2015	19:04	7.97	1.50	18.32	38.48	21.08	31.04	1.95	-2.89	337.96	2702.85	0.69	2.86
RUN 2_005	10/22/2015	19:05	9.29	1.81	17.56	36.88	18.17	32.42	2.79	-3.08	322.65	2682.61	0.68	3.20
RUN 2_005	10/22/2015	19:06	9.90	2.28	16.93	34.85	15.34	32.05	3.33	-3.06	308.31	2743.32	0.68	3.19
Average Wet			6.76	1.28	13.58	28.31	13.19	28.15	1.26	-2.33	251.42			
Average Dry				1.37	14.56	30.36	14.15	30.19	1.35	0.13	269.64	1964.51	0.64	3.58
DL			0.02	0.19	0.09	0.23	0.21	0.10	0.10	0.13	0.09	0.13	0.01	0.16
Flow DSCFM														
484.0														
lb/hr				0.003	0.031	0.069	0.047	0.073	0.006	0.001	0.326	4.146		0.012

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (7u)	Ethylene (100,30u)	Acetaldehyde (10u)	MeOH (10) 191C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry		
RUN 3_005	10/22/2015	19:19	6.18	2.15	20.73	34.10	22.67	29.82	1.72	-2.88	290.91	2399.29	0.77	3.95
RUN 3_005	10/22/2015	19:20	6.23	2.41	21.19	35.29	23.33	30.25	1.61	-2.92	296.69	2375.87	0.77	3.75
RUN 3_005	10/22/2015	19:21	6.25	2.71	22.04	37.10	23.72	30.64	1.52	-3.07	308.09	2469.76	0.78	3.74
RUN 3_005	10/22/2015	19:22	6.25	2.69	22.39	37.27	23.70	30.85	1.51	-3.07	310.28	2533.84	0.77	3.80
RUN 3_005	10/22/2015	19:23	6.23	2.20	21.72	35.22	22.74	31.07	1.56	-2.96	296.32	2503.67	0.76	3.77
RUN 3_005	10/22/2015	19:24	6.22	2.18	20.85	33.33	21.54	31.19	1.71	-2.98	280.48	2393.40	0.79	4.11
RUN 3_005	10/22/2015	19:25	6.25	2.40	21.45	34.51	22.64	31.34	1.52	-3.02	288.74	2384.90	0.79	3.91
RUN 3_005	10/22/2015	19:26	6.26	2.81	22.04	36.56	23.23	31.44	1.47	-3.06	302.35	2441.46	0.78	3.86
RUN 3_005	10/22/2015	19:27	6.26	2.78	21.91	37.19	23.36	31.51	1.39	-3.12	307.69	2528.61	0.78	3.88
RUN 3_005	10/22/2015	19:28	6.26	2.49	20.84	35.79	22.39	31.64	1.36	-3.19	297.84	2522.32	0.78	3.78
RUN 3_005	10/22/2015	19:29	6.16	1.76	19.70	33.20	22.11	31.48	1.46	-2.85	280.04	2375.79	0.80	4.05
RUN 3_005	10/22/2015	19:30	6.17	1.73	18.40	30.86	20.62	32.35	1.42	-2.96	260.92	2188.41	0.81	4.11
RUN 3_005	10/22/2015	19:31	6.34	1.40	16.26	27.67	17.27	33.83	1.30	-2.89	230.41	1903.21	0.75	3.94
RUN 3_005	10/22/2015	19:32	6.47	1.25	14.26	24.83	13.97	34.91	1.38	-2.90	203.39	1657.10	0.71	3.59
RUN 3_005	10/22/2015	19:33	6.55	1.00	11.07	19.41	8.35	34.63	1.67	-2.82	150.63	1218.08	0.60	2.86
RUN 3_005	10/22/2015	19:34	5.95	0.92	5.16	9.59	-0.51	26.43	1.38	-2.00	70.54	454.28	0.31	0.89
RUN 3_005	10/22/2015	19:35	5.77	0.90	10.52	18.14	8.95	30.24	1.26	-2.59	145.75	1128.06	0.64	2.88
RUN 3_005	10/22/2015	19:36	6.29	0.99	12.03	20.93	9.29	34.13	1.33	-2.71	169.73	1235.48	0.70	3.14
RUN 3_005	10/22/2015	19:37	6.52	1.50	13.97	24.72	9.78	34.37	1.58	-2.82	197.14	1331.94	0.68	2.94
RUN 3_005	10/22/2015	19:38	6.57	2.02	15.19	27.43	11.35	33.87	1.58	-2.90	220.73	1490.60	0.68	2.98
RUN 3_005	10/22/2015	19:39	6.60	1.99	15.77	28.80	11.37	33.74	1.62	-2.92	231.93	1602.73	0.70	3.08
RUN 3_005	10/22/2015	19:40	6.59	1.80	15.70	28.22	11.33	33.50	1.56	-2.91	228.61	1588.88	0.74	3.16
RUN 3_005	10/22/2015	19:41	6.60	2.14	16.83	29.96	12.68	33.19	1.49	-2.99	243.73	1652.50	0.75	3.17
RUN 3_005	10/22/2015	19:42	6.60	2.38	17.83	32.12	13.83	33.02	1.53	-2.97	261.42	1814.85	0.74	3.03
RUN 3_005	10/22/2015	19:43	6.57	2.39	17.66	32.22	13.99	32.99	1.51	-3.10	263.96	1932.31	0.74	3.02
RUN 3_005	10/22/2015	19:44	6.54	2.09	16.86	30.73	13.53	32.72	1.48	-3.03	253.34	1937.21	0.74	3.16
RUN 3_005	10/22/2015	19:45	6.52	2.06	16.70	29.72	13.53	32.71	1.23	-2.93	245.58	1852.94	0.77	3.35
RUN 3_005	10/22/2015	19:46	6.57	2.54	18.02	31.53	14.83	32.52	1.53	-3.02	260.48	1933.86	0.77	3.25
RUN 3_005	10/22/2015	19:47	6.57	2.87	18.59	32.86	15.71	32.39	1.57	-3.14	273.76	2070.87	0.76	3.11
RUN 3_005	10/22/2015	19:48	6.55	2.76	18.47	32.83	16.05	32.40	1.60	-3.09	277.22	2180.49	0.76	3.25
RUN 3_005	10/22/2015	19:49	6.53	2.55	17.86	31.10	14.96	32.41	1.59	-3.01	267.23	2206.65	0.74	3.20
RUN 3_005	10/22/2015	19:50	6.49	2.09	16.95	28.82	13.99	32.27	1.28	-2.80	248.06	2078.27	0.76	3.33

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (7%)	Ethylene (100,30C)	Ethane (500) 191C	Acetaldehyde (10C)	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 3_005	10/22/2015	19:19	6.18	2.15	20.73	34.10	22.67	29.82	1.72	-2.88	290.91	2399.29	0.77	3.95
RUN 3_005	10/22/2015	19:51	6.50	2.32	17.57	29.38	14.91	32.13	1.35	-2.89	251.15	2053.58	0.78	3.30
RUN 3_005	10/22/2015	19:52	6.52	2.85	19.00	31.48	15.96	32.14	1.40	-2.95	268.51	2166.04	0.79	3.31
RUN 3_005	10/22/2015	19:53	6.49	3.15	19.50	32.73	16.78	32.01	1.40	-2.98	279.53	2275.65	0.79	3.20
RUN 3_005	10/22/2015	19:54	6.45	2.79	19.07	32.10	16.57	32.06	1.41	-2.95	277.94	2329.84	0.76	3.19
RUN 3_005	10/22/2015	19:55	6.44	2.50	17.95	30.09	15.23	32.04	1.36	-2.84	264.29	2289.57	0.77	3.27
RUN 3_005	10/22/2015	19:56	6.42	2.27	17.49	28.91	14.83	31.94	1.32	-2.74	251.13	2159.82	0.78	3.35
RUN 3_005	10/22/2015	19:57	6.44	2.68	18.76	30.65	16.40	31.92	1.34	-2.86	263.98	2201.68	0.79	3.22
RUN 3_005	10/22/2015	19:58	6.53	3.60	19.45	31.94	16.73	33.00	1.58	-3.21	273.30	2291.31	0.88	3.15
RUN 3_005	10/22/2015	19:59	5.97	1.92	9.16	14.45	6.81	27.78	0.85	-2.44	90.31	783.21	0.76	0.83
RUN 3_005	10/22/2015	20:00	6.31	2.39	17.19	25.01	13.72	32.80	1.28	-2.86	209.65	1859.61	1.48	2.71
RUN 3_005	10/22/2015	20:01	6.67	2.24	15.35	22.03	10.56	34.83	1.59	-2.91	182.45	1638.18	1.51	2.80
RUN 3_005	10/22/2015	20:02	6.91	2.10	13.82	19.42	7.80	36.51	1.85	-3.04	157.65	1431.25	1.59	2.86
RUN 3_005	10/22/2015	20:03	6.63	1.56	6.95	10.71	-1.35	31.75	1.44	-2.47	71.46	634.12	0.91	1.23
RUN 3_005	10/22/2015	20:04	5.50	1.17	1.90	3.78	-6.08	20.12	1.02	-1.51	20.47	147.05	0.27	-0.25
RUN 3_005	10/22/2015	20:05	4.88	1.07	1.78	3.30	-4.43	14.92	1.09	-1.23	19.89	142.66	0.27	-0.15
RUN 3_005	10/22/2015	20:06	4.17	0.83	1.92	3.21	-2.92	12.04	0.87	-1.07	21.42	152.75	0.28	-0.05
RUN 3_005	10/22/2015	20:07	3.80	0.72	1.59	2.66	-2.50	10.06	0.67	-0.88	18.12	127.33	0.25	-0.13
RUN 3_005	10/22/2015	20:08	3.56	0.62	1.59	2.61	-1.93	8.71	0.61	-0.78	17.85	124.54	0.24	-0.02
RUN 3_005	10/22/2015	20:09	3.31	0.48	1.52	2.52	-1.40	7.92	0.57	-0.77	18.05	126.82	0.24	-0.20
RUN 3_005	10/22/2015	20:10	3.07	0.54	1.48	2.50	-0.96	7.19	0.49	-0.69	17.66	123.19	0.23	-0.22
RUN 3_005	10/22/2015	20:11	2.95	0.42	1.40	2.21	-0.81	6.63	0.51	-0.68	16.21	113.65	0.22	-0.14
RUN 3_005	10/22/2015	20:12	2.78	0.32	1.38	2.23	-0.69	6.15	0.52	-0.65	16.64	116.05	0.22	-0.17
RUN 3_005	10/22/2015	20:13	2.66	0.31	1.24	2.02	-0.70	5.63	0.52	-0.67	14.76	102.09	0.20	-0.30
RUN 3_005	10/22/2015	20:15	2.59	0.34	1.39	2.19	-0.32	5.36	0.49	-0.60	16.56	115.29	0.22	-0.23
RUN 3_005	10/22/2015	20:16	2.50	0.32	1.39	2.26	-0.06	5.28	0.45	-0.62	16.97	119.04	0.23	-0.11
RUN 3_005	10/22/2015	20:17	2.42	0.30	1.34	2.10	-0.15	4.93	0.46	-0.64	15.66	108.01	0.21	-0.11
RUN 3_005	10/22/2015	20:18	2.35	0.28	1.29	1.96	-0.05	4.79	0.39	-0.53	15.43	106.99	0.21	-0.18
RUN 3_005	10/22/2015	20:19	2.30	0.26	1.47	2.17	0.22	4.78	0.33	-0.51	17.65	122.33	0.23	-0.11
RUN 3_005	10/22/2015	20:20	2.24	0.28	1.33	2.08	0.23	4.74	0.41	-0.57	16.15	111.99	0.21	-0.12
RUN 3_005	10/22/2015	20:21	2.21	0.26	1.20	1.87	-0.01	4.41	0.40	-0.54	14.13	96.73	0.19	-0.14
RUN 3_005	10/22/2015	20:22	2.19	0.18	1.45	2.16	0.43	4.57	0.35	-0.52	17.35	119.09	0.22	-0.08

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (7%)	Ethylene (100,300)	Ethane (500) 191C	Acetaldehyde (10)	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx on
RUN 3_005	10/22/2015	19:19	6.18	2.15	20.73	34.10	22.67	29.82	1.72	-2.88	290.91	2399.29	0.77	3.95
RUN 3_005	10/22/2015	20:23	2.17	0.17	1.28	2.05	0.29	4.47	0.37	-0.53	15.81	108.35	0.21	-0.07
RUN 3_005	10/22/2015	20:24	2.14	0.22	1.44	2.06	0.39	4.43	0.35	-0.46	17.25	117.42	0.22	-0.05
RUN 3_005	10/22/2015	20:25	2.09	0.24	1.35	2.11	0.59	4.45	0.38	-0.45	16.76	113.62	0.22	-0.15
RUN 3_005	10/22/2015	20:26	2.06	0.20	1.37	2.11	0.69	4.32	0.35	-0.45	16.69	115.36	0.22	-0.11
RUN 3_005	10/22/2015	20:27	2.03	0.14	1.10	1.77	0.21	4.20	0.40	-0.52	13.64	93.28	0.19	-0.15
RUN 3_005	10/22/2015	20:28	2.01	0.27	1.32	1.97	0.47	4.14	0.36	-0.48	16.03	110.05	0.21	-0.16
RUN 3_005	10/22/2015	20:30	2.00	0.24	1.10	1.89	0.45	3.97	0.32	-0.48	14.63	100.03	0.19	-0.01
RUN 3_005	10/22/2015	20:36	4.51	1.43	5.63	13.61	1.92	22.69	1.16	-1.99	93.84	279.48	0.37	0.86
RUN 3_005	10/22/2015	20:37	5.88	2.46	8.23	18.17	0.83	26.86	1.39	-2.17	154.63	1175.23	0.39	1.03
RUN 3_005	10/22/2015	20:38	5.91	2.38	8.60	17.32	1.10	26.97	1.42	-2.11	149.68	1177.87	0.41	1.23
RUN 3_005	10/22/2015	20:39	5.95	2.96	11.00	19.80	3.22	26.85	1.31	-2.17	170.92	1296.38	0.40	1.32
RUN 3_005	10/22/2015	20:40	5.99	3.91	13.02	22.68	5.29	26.81	1.35	-2.31	198.32	1527.46	0.43	1.34
RUN 3_005	10/22/2015	20:41	6.02	3.95	13.45	24.14	6.48	26.85	1.26	-2.47	210.28	1687.97	0.42	1.26
RUN 3_005	10/22/2015	20:42	5.96	3.56	13.22	23.59	6.77	26.91	1.22	-2.39	208.86	1805.57	0.40	1.30
RUN 3_005	10/22/2015	20:43	5.95	3.01	12.36	21.90	6.29	27.04	1.33	-2.26	195.87	1816.29	0.41	1.48
RUN 3_005	10/22/2015	20:44	5.95	2.75	12.49	21.25	6.88	26.93	1.35	-2.14	188.68	1744.47	0.46	1.67
RUN 3_005	10/22/2015	20:45	6.02	3.26	14.32	23.79	8.86	26.85	1.32	-2.40	207.69	1847.61	0.45	1.66
RUN 3_005	10/22/2015	20:46	6.07	3.72	15.41	26.49	10.59	27.16	1.28	-2.29	228.81	2044.09	0.45	1.72
RUN 3_005	10/22/2015	20:47	6.15	3.70	15.46	27.21	11.26	27.34	1.31	-2.34	233.61	2173.27	0.46	1.69
RUN 3_005	10/22/2015	20:48	6.00	3.29	15.14	26.75	11.73	27.31	1.26	-2.36	230.44	2241.85	0.45	1.76
RUN 3_005	10/22/2015	20:49	5.99	3.20	14.73	25.18	11.35	27.52	1.30	-2.29	218.86	2181.07	0.46	1.90
RUN 3_005	10/22/2015	20:50	6.08	3.23	15.23	25.66	12.21	27.54	1.35	-2.35	220.88	2107.53	0.48	1.82
RUN 3_005	10/22/2015	20:51	6.09	3.28	16.34	28.30	13.61	27.62	1.32	-2.36	239.07	2188.53	0.48	1.89
RUN 3_005	10/22/2015	20:52	6.06	3.70	17.14	30.13	14.59	27.74	1.34	-2.58	254.38	2312.79	0.47	1.87
RUN 3_005	10/22/2015	20:53	6.03	3.45	17.05	30.35	15.25	27.90	1.27	-2.48	257.04	2379.03	0.46	1.69
RUN 3_005	10/22/2015	20:54	6.05	3.12	16.66	29.48	15.14	27.97	1.31	-2.50	249.79	2429.60	0.46	1.68
RUN 3_005	10/22/2015	20:55	6.11	2.86	16.36	28.21	15.18	28.14	1.42	-2.41	239.74	2443.99	0.45	1.64
RUN 3_005	10/22/2015	20:56	6.08	2.97	16.67	28.81	15.59	28.13	1.32	-2.50	243.64	2468.09	0.46	1.60
RUN 3_005	10/22/2015	20:57	6.07	3.07	16.80	29.66	16.18	28.20	1.27	-2.62	248.59	2477.56	0.47	1.47
RUN 3_005	10/22/2015	20:58	6.06	2.85	16.38	29.08	15.84	28.20	1.23	-2.56	242.39	2393.54	0.48	1.40
RUN 3_005	10/22/2015	20:59	6.11	2.81	16.64	29.44	15.61	28.29	1.28	-2.53	249.28	2497.32	0.50	1.37

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (7C)	Ethylene (100,300)	Ethane (500) 191C	Acetaldehyde (10)	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 3_005	10/22/2015	19:19	6.18	2.15	20.73	34.10	22.67	29.82	1.72	-2.88	290.91	2399.29	0.77	3.95
RUN 3_005	10/22/2015	21:00	6.10	2.72	16.28	28.13	15.05	28.21	1.30	-2.46	242.49	2544.70	0.50	1.57
RUN 3_005	10/22/2015	21:01	6.17	2.67	16.27	28.25	15.35	28.26	1.38	-2.52	245.09	2588.52	0.52	1.42
RUN 3_005	10/22/2015	21:02	6.13	2.98	16.61	29.38	15.61	28.26	1.41	-2.59	254.31	2678.23	0.54	1.29
RUN 3_005	10/22/2015	21:03	6.07	3.09	16.74	30.24	15.84	28.20	1.33	-2.65	261.82	2773.22	0.56	1.27
RUN 3_005	10/22/2015	21:04	6.04	2.89	16.57	29.98	15.43	28.40	1.31	-2.63	260.88	2828.12	0.57	1.42
RUN 3_005	10/22/2015	21:05	6.08	2.59	15.77	28.12	14.62	28.31	1.29	-2.58	245.81	2677.63	0.62	1.72
RUN 3_005	10/22/2015	21:06	6.08	2.91	16.79	29.16	15.72	28.33	1.39	-2.61	254.77	2609.87	0.64	1.57
RUN 3_005	10/22/2015	21:07	6.11	3.32	18.06	31.52	16.81	28.43	1.44	-2.78	272.76	2669.87	0.65	1.69
RUN 3_005	10/22/2015	21:08	6.19	3.58	18.74	32.61	17.54	28.47	1.50	-2.85	282.21	2745.66	0.66	1.68
RUN 3_005	10/22/2015	21:09	6.19	3.46	18.36	31.72	17.14	28.55	1.55	-2.80	277.17	2739.60	0.65	1.80
RUN 3_005	10/22/2015	21:10	6.11	2.97	17.27	29.53	16.12	28.64	1.42	-2.58	257.32	2559.65	0.67	1.99
RUN 3_005	10/22/2015	21:11	6.15	3.06	17.93	29.92	17.29	28.69	1.52	-2.68	259.40	2471.99	0.68	1.91
RUN 3_005	10/22/2015	21:12	6.15	3.56	19.36	32.31	18.62	28.67	1.57	-2.77	277.88	2557.18	0.68	1.92
RUN 3_005	10/22/2015	21:13	6.21	3.90	20.06	33.65	19.37	28.75	1.50	-2.87	289.01	2652.09	0.68	1.96
RUN 3_005	10/22/2015	21:14	6.15	3.50	20.10	33.02	19.12	28.82	1.50	-2.83	285.61	2641.95	0.68	1.96
RUN 3_005	10/22/2015	21:15	6.11	3.21	19.16	30.97	18.27	28.79	1.51	-2.76	267.44	2465.17	0.70	2.30
RUN 3_005	10/22/2015	21:16	6.15	3.40	19.89	31.74	19.38	28.89	1.60	-2.83	271.81	2411.52	0.70	2.23
RUN 3_005	10/22/2015	21:17	6.19	3.74	20.57	33.30	20.16	29.05	1.57	-2.97	286.05	2507.80	0.70	2.10
Average Wet			5.46	2.15	13.11	22.44	10.82	24.88	1.21	-2.26	188.88			
Average Dry				2.28	13.87	23.74	11.44	26.32	1.29	0.13	199.79	1636.20	0.57	1.87
DL			0.02	0.19	0.09	0.23	0.21	0.10	0.10	0.13	0.09	0.13	0.01	0.16
Flow DSCFM		402.0												
lb/hr				0.004	0.024	0.045	0.032	0.053	0.005	0.001	0.201	2.868		0.005

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 1_006	10/23/2015	10:46	1.88	0.02	0.04	0.35	0.26	1.13	0.25	-0.60	2.61	4.92	0.04	-0.52
RUN 1_006	10/23/2015	10:47	1.87	0.06	0.05	0.40	0.27	1.23	0.31	-0.61	2.53	4.51	0.04	-0.41
RUN 1_006	10/23/2015	10:48	1.87	0.05	0.05	0.53	-0.09	1.16	-0.42	-1.53	2.43	3.93	0.05	-0.37
RUN 1_006	10/23/2015	10:49	1.86	-0.08	0.02	0.47	-0.03	0.98	-0.15	-1.14	2.51	4.23	0.04	-0.43
RUN 1_006	10/23/2015	10:50	1.85	-0.07	0.11	0.55	-0.20	0.96	-0.74	-2.01	2.36	3.65	0.05	-0.41
RUN 1_006	10/23/2015	10:51	1.85	0.02	0.07	0.68	-0.22	1.11	-1.35	-2.88	2.42	4.21	0.04	-0.30
RUN 1_006	10/23/2015	10:52	1.85	-0.02	0.07	0.67	0.12	1.38	-0.96	-2.37	2.49	4.46	0.05	-0.42
RUN 1_006	10/23/2015	10:53	1.85	-0.04	0.06	0.64	0.43	1.81	-0.57	-1.71	2.44	4.26	0.05	-0.42
RUN 1_006	10/23/2015	10:54	1.85	-0.07	0.01	0.69	0.58	1.98	-0.31	-1.48	2.50	4.37	0.04	-0.40
RUN 1_006	10/23/2015	10:55	1.85	0.00	0.09	0.61	0.60	2.08	-0.17	-1.34	2.51	4.63	0.05	-0.39
RUN 1_006	10/23/2015	11:01	1.90	-0.04	0.03	0.55	0.63	2.47	0.23	-0.91	2.36	4.34	0.14	-0.35
RUN 1_006	10/23/2015	11:02	1.90	-0.01	0.05	0.49	0.61	2.58	0.22	-0.81	2.38	4.41	0.11	-0.38
RUN 1_006	10/23/2015	11:03	1.91	0.01	0.08	0.55	0.45	2.18	0.24	-0.90	2.42	4.90	0.09	-0.32
RUN 1_006	10/23/2015	11:04	1.91	-0.02	0.07	0.67	0.38	2.33	0.25	-0.81	2.51	5.03	0.09	-0.40
RUN 1_006	10/23/2015	11:05	1.91	-0.05	-0.01	0.46	0.41	2.20	0.25	-0.79	2.39	4.50	0.08	-0.49
RUN 1_006	10/23/2015	11:06	1.92	-0.07	0.01	0.56	0.31	2.13	0.34	-0.80	2.39	4.77	0.07	-0.36
RUN 1_006	10/23/2015	11:07	1.92	0.04	0.07	0.53	0.11	1.88	0.35	-0.71	2.31	4.16	0.06	-0.41
RUN 1_006	10/23/2015	11:08	1.92	0.07	0.04	0.48	0.13	1.92	0.39	-0.75	2.32	3.82	0.07	-0.40
RUN 1_006	10/23/2015	11:09	1.92	-0.05	0.03	0.50	0.24	2.06	0.38	-0.68	2.29	3.67	0.06	-0.41
RUN 1_006	10/23/2015	11:10	1.92	0.00	0.08	0.57	0.19	1.72	0.40	-0.65	2.17	3.35	0.05	-0.32
RUN 1_006	10/23/2015	11:11	1.93	0.05	0.05	0.46	0.20	1.38	0.45	-0.67	2.11	3.26	0.05	-0.40
RUN 1_006	10/23/2015	11:12	1.93	0.06	0.02	0.45	-0.09	1.27	0.46	-0.61	2.13	2.88	0.05	-0.35
RUN 1_006	10/23/2015	11:13	1.92	0.00	0.02	0.37	0.06	1.10	0.52	-0.61	2.13	3.02	0.05	-0.41
RUN 1_006	10/23/2015	11:14	1.92	0.01	-0.03	0.37	0.00	1.19	0.51	-0.58	2.14	2.82	0.05	-0.35
RUN 1_006	10/23/2015	11:15	1.92	0.03	0.02	0.42	-0.03	1.03	0.55	-0.57	2.10	2.79	0.05	-0.36
RUN 1_006	10/23/2015	11:16	1.93	0.02	0.01	0.35	-0.09	0.95	0.48	-0.58	2.10	2.75	0.05	-0.38
RUN 1_006	10/23/2015	11:17	1.93	0.04	0.00	0.30	-0.12	0.90	0.56	-0.54	2.08	2.55	0.05	-0.40
RUN 1_006	10/23/2015	11:18	2.02	-0.01	0.48	1.15	1.98	4.16	0.41	-0.58	8.48	26.04	0.32	0.91
RUN 1_006	10/23/2015	11:19	2.24	0.00	1.62	2.60	2.30	6.68	0.46	-0.64	24.12	82.05	0.41	1.30
RUN 1_006	10/23/2015	11:20	2.45	0.14	2.67	3.55	2.31	7.70	0.63	-0.76	35.87	128.24	0.43	1.06
RUN 1_006	10/23/2015	11:21	2.64	0.18	4.56	4.76	2.61	8.69	0.73	-0.82	50.37	195.06	0.55	1.13
RUN 1_006	10/23/2015	11:22	2.84	0.40	7.80	6.96	3.55	9.44	1.05	-0.88	77.19	321.36	0.62	1.14
RUN 1_006	10/23/2015	11:23	3.06	0.49	10.32	8.92	4.60	10.31	1.25	-0.93	100.16	473.47	0.71	1.31
RUN 1_006	10/23/2015	11:24	3.24	0.73	13.21	11.00	5.66	10.97	1.33	-1.04	123.97	711.06	0.86	1.01

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 1_006	10/23/2015	10:46	1.88	0.02	0.04	0.35	0.26	1.13	0.25	-0.60	2.61	4.92	0.04	-0.52
RUN 1_006	10/23/2015	11:25	3.41	0.88	14.49	12.53	6.73	11.46	1.44	-1.13	145.44	890.41	0.90	0.97
RUN 1_006	10/23/2015	11:26	3.56	0.84	15.22	13.52	7.38	12.08	1.60	-1.13	160.61	1040.39	0.94	0.90
RUN 1_006	10/23/2015	11:27	3.70	1.03	16.13	14.53	8.53	12.51	1.47	-1.00	175.84	1213.62	1.03	0.96
RUN 1_006	10/23/2015	11:28	3.83	1.22	16.38	15.23	9.09	12.82	1.60	-1.02	186.25	1370.19	1.05	0.98
RUN 1_006	10/23/2015	11:29	3.95	1.02	16.30	15.08	9.61	13.21	1.65	-1.06	186.12	1434.54	1.12	1.05
RUN 1_006	10/23/2015	11:30	4.09	1.17	17.02	15.61	10.45	13.58	1.73	-1.16	192.77	1488.48	1.22	1.09
RUN 1_006	10/23/2015	11:31	4.20	1.40	17.90	16.53	11.38	13.86	1.77	-1.13	205.91	1610.69	1.22	1.07
RUN 1_006	10/23/2015	11:32	4.31	1.56	18.25	17.36	12.16	14.23	1.69	-1.22	217.00	1715.89	1.24	1.02
RUN 1_006	10/23/2015	11:33	4.42	1.54	18.32	17.80	12.88	14.49	1.78	-1.23	227.24	1808.95	1.27	1.00
RUN 1_006	10/23/2015	11:34	4.52	1.53	18.45	18.27	13.75	14.85	1.78	-1.11	235.38	1916.39	1.27	1.16
RUN 1_006	10/23/2015	11:35	4.61	1.52	18.18	18.30	14.09	15.06	1.78	-1.09	235.64	1969.35	1.31	1.17
RUN 1_006	10/23/2015	11:36	4.70	1.42	18.19	18.01	14.44	15.33	1.83	-1.19	232.89	1947.76	1.38	1.29
RUN 1_006	10/23/2015	11:37	4.78	1.49	18.13	18.48	14.94	15.56	1.82	-1.21	238.24	1994.04	1.36	1.33
RUN 1_006	10/23/2015	11:38	4.87	1.70	18.01	18.73	15.45	15.74	1.73	-1.21	245.31	2076.15	1.35	1.40
RUN 1_006	10/23/2015	11:39	4.97	1.90	18.03	19.09	15.96	16.09	1.88	-1.26	252.42	2142.78	1.36	1.49
RUN 1_006	10/23/2015	11:40	5.03	1.87	17.85	19.28	16.25	16.31	1.86	-1.26	256.10	2201.85	1.34	1.50
RUN 1_006	10/23/2015	11:41	5.12	1.99	17.82	19.42	16.63	16.49	1.91	-1.31	258.85	2251.90	1.35	1.68
RUN 1_006	10/23/2015	11:42	5.18	1.55	17.51	18.70	16.28	16.83	1.77	-1.26	247.09	2170.72	1.44	1.74
RUN 1_006	10/23/2015	11:43	5.19	1.59	17.37	18.49	16.23	17.04	1.57	-1.24	244.90	2121.31	1.42	1.90
RUN 1_006	10/23/2015	11:45	5.25	1.96	17.59	19.17	16.70	17.21	1.67	-1.33	255.38	2179.41	1.38	2.00
RUN 1_006	10/23/2015	11:46	5.33	2.05	17.83	19.82	17.32	17.44	1.75	-1.33	265.20	2241.89	1.37	2.22
RUN 1_006	10/23/2015	11:47	5.38	2.17	17.72	20.07	17.57	17.59	1.74	-1.32	269.60	2276.34	1.35	2.36
RUN 1_006	10/23/2015	11:48	5.43	2.28	17.67	20.39	17.77	18.00	1.76	-1.38	274.32	2304.99	1.34	2.50
RUN 1_006	10/23/2015	11:49	5.50	2.26	17.76	20.71	18.19	18.31	1.77	-1.42	278.30	2343.57	1.36	2.45
RUN 1_006	10/23/2015	11:50	5.54	2.35	17.45	20.80	18.32	18.61	1.77	-1.37	280.32	2368.21	1.33	2.63
RUN 1_006	10/23/2015	11:51	5.59	2.10	17.21	20.80	18.28	18.90	1.78	-1.39	281.11	2389.58	1.31	2.81
RUN 1_006	10/23/2015	11:52	5.65	2.21	16.99	20.78	18.19	19.08	1.70	-1.38	282.95	2433.03	1.30	2.85
RUN 1_006	10/23/2015	11:53	5.70	2.16	16.49	20.58	18.04	19.26	1.64	-1.40	281.08	2425.89	1.27	3.12
RUN 1_006	10/23/2015	11:54	5.77	2.28	16.31	20.43	17.93	19.67	1.65	-1.40	281.18	2447.38	1.29	3.12
RUN 1_006	10/23/2015	11:55	5.80	2.35	16.42	20.44	17.95	19.95	1.72	-1.44	280.06	2441.41	1.30	3.30
RUN 1_006	10/23/2015	11:56	5.83	2.33	16.04	20.37	17.78	20.20	1.66	-1.45	280.21	2470.07	1.26	3.30
RUN 1_006	10/23/2015	11:57	5.86	2.35	15.89	20.47	17.66	20.45	1.64	-1.43	281.16	2483.02	1.24	3.54
RUN 1_006	10/23/2015	11:58	5.91	2.48	15.89	20.39	17.64	20.67	1.64	-1.47	281.33	2500.25	1.23	3.66

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 1_006	10/23/2015	10:46	1.88	0.02	0.04	0.35	0.26	1.13	0.25	-0.60	2.61	4.92	0.04	-0.52
RUN 1_006	10/23/2015	11:59	5.95	2.29	15.84	20.32	17.46	20.84	1.68	-1.46	280.29	2484.62	1.22	3.89
RUN 1_006	10/23/2015	12:00	5.98	2.39	15.80	20.32	17.65	21.13	1.57	-1.42	281.41	2506.51	1.21	4.10
RUN 1_006	10/23/2015	12:01	6.03	2.49	15.83	20.19	17.51	21.48	1.57	-1.51	283.25	2517.80	1.24	4.12
RUN 1_006	10/23/2015	12:02	6.05	2.50	15.66	20.17	17.39	21.71	1.53	-1.50	283.26	2531.66	1.22	4.30
RUN 1_006	10/23/2015	12:03	6.07	2.56	15.68	20.49	17.25	22.00	1.48	-1.48	286.75	2549.09	1.19	4.31
RUN 1_006	10/23/2015	12:04	6.10	2.58	15.60	20.53	17.37	22.13	1.42	-1.52	287.45	2555.81	1.18	4.51
RUN 1_006	10/23/2015	12:05	6.14	2.62	15.37	20.28	17.12	22.37	1.55	-1.56	285.75	2558.03	1.16	4.72
RUN 1_006	10/23/2015	12:06	6.16	2.53	15.04	20.02	16.86	22.72	1.55	-1.64	283.87	2561.80	1.17	4.73
RUN 1_006	10/23/2015	12:07	6.22	2.50	11.69	15.44	12.28	23.47	1.18	-1.72	180.77	1706.67	1.17	3.04
RUN 1_006	10/23/2015	12:08	5.77	1.72	9.44	11.55	10.79	20.76	1.09	-1.49	133.12	1278.67	1.44	1.70
RUN 1_006	10/23/2015	12:09	6.25	1.90	12.10	14.14	12.13	24.74	1.24	-1.64	193.10	1903.05	2.04	2.68
RUN 1_006	10/23/2015	12:10	6.50	1.92	10.63	12.48	9.81	26.28	1.23	-1.75	164.56	1644.59	2.05	2.65
RUN 1_006	10/23/2015	12:11	6.71	1.77	9.36	11.24	7.52	27.59	1.13	-1.78	142.00	1419.64	2.00	2.93
RUN 1_006	10/23/2015	12:12	6.24	1.39	2.63	4.01	-2.61	20.68	0.72	-1.37	36.41	272.83	0.61	0.23
RUN 1_006	10/23/2015	12:13	5.28	1.05	1.13	2.05	-4.36	13.65	0.58	-1.00	15.28	119.87	0.26	-0.39
RUN 1_006	10/23/2015	12:14	4.54	0.86	0.74	1.53	-3.75	9.89	0.62	-0.85	9.65	71.37	0.18	-0.39
RUN 1_006	10/23/2015	12:15	3.99	0.84	0.53	1.15	-3.04	7.56	0.58	-0.79	6.90	46.20	0.13	-0.48
RUN 1_006	10/23/2015	12:16	3.62	0.67	0.48	0.97	-2.59	6.16	0.49	-0.71	6.17	38.76	0.12	-0.46
RUN 1_006	10/23/2015	12:17	3.40	0.55	0.36	0.93	-2.38	5.63	0.43	-0.66	5.78	35.60	0.11	-0.51
RUN 1_006	10/23/2015	12:18	3.63	0.58	1.60	2.92	2.51	10.35	0.16	-0.89	23.19	97.71	0.46	1.09
RUN 1_006	10/23/2015	12:19	5.04	1.22	2.16	4.65	2.93	20.60	0.29	-1.25	35.07	148.51	0.46	2.39
RUN 1_006	10/23/2015	12:20	5.83	1.41	3.47	6.99	1.93	23.35	0.52	-1.44	70.92	307.55	0.46	2.73
RUN 1_006	10/23/2015	12:21	6.16	1.70	4.49	9.01	1.90	24.05	0.62	-1.39	100.92	515.00	0.45	2.98
RUN 1_006	10/23/2015	12:22	6.30	1.86	5.47	10.43	2.58	24.36	0.60	-1.39	124.88	791.80	0.46	3.19
RUN 1_006	10/23/2015	12:23	6.33	1.86	6.21	11.60	3.32	24.48	0.70	-1.35	142.27	966.95	0.44	3.48
RUN 1_006	10/23/2015	12:24	6.27	1.94	6.76	12.25	3.73	24.49	0.78	-1.35	157.58	1141.21	0.46	3.73
RUN 1_006	10/23/2015	12:25	6.17	1.82	7.32	12.86	4.33	24.42	0.81	-1.39	166.70	1216.93	0.48	3.90
RUN 1_006	10/23/2015	12:26	6.03	1.71	7.47	13.19	4.60	24.41	0.65	-1.35	171.19	1233.30	0.50	4.03
RUN 1_006	10/23/2015	12:27	5.89	1.82	8.10	14.07	5.34	24.32	0.64	-1.27	186.47	1359.07	0.51	4.33
RUN 1_006	10/23/2015	12:29	5.67	1.78	8.81	14.90	6.30	24.23	0.69	-1.24	202.17	1514.47	0.55	4.32
RUN 1_006	10/23/2015	12:34	4.33	1.32	11.07	17.30	9.80	23.56	0.56	-1.16	242.47	1904.42	0.66	5.03
RUN 1_006	10/23/2015	12:38	3.51	1.15	12.42	18.85	12.77	23.62	0.61	-1.09	267.04	2201.02	0.75	5.58
RUN 1_006	10/23/2015	12:40	3.21	0.89	13.34	19.14	14.30	23.67	0.54	-1.12	273.18	2274.37	0.83	6.01

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry	
RUN 2_006	10/23/2015	13:13	4.58	1.35	2.70	4.91	3.10	16.36	0.40	-1.58	41.03	169.53	0.72	3.21
RUN 2_006	10/23/2015	13:14	5.75	1.77	3.00	6.38	-0.04	25.19	0.59	-1.86	56.51	218.11	0.56	3.56
RUN 2_006	10/23/2015	13:15	6.47	2.25	4.36	8.71	-0.24	27.67	0.83	-1.98	93.58	384.50	0.54	3.77
RUN 2_006	10/23/2015	13:17	6.94	2.27	5.33	10.46	0.10	28.82	0.88	-1.91	119.95	712.10	0.52	4.11
RUN 2_006	10/23/2015	13:18	7.18	2.40	6.08	11.55	0.55	29.56	0.99	-1.82	140.15	888.38	0.50	4.27
RUN 2_006	10/23/2015	13:19	7.22	2.45	6.69	12.43	0.90	29.86	1.20	-1.81	154.29	1066.93	0.49	4.67
RUN 2_006	10/23/2015	13:20	7.23	2.47	7.32	13.05	1.44	30.04	1.19	-1.71	165.58	1204.83	0.49	4.88
RUN 2_006	10/23/2015	13:21	7.23	2.54	7.69	13.59	2.08	30.25	1.09	-1.78	174.60	1343.00	0.46	5.10
RUN 2_006	10/23/2015	13:22	7.23	2.43	8.00	14.14	2.75	30.54	1.09	-1.77	182.00	1460.21	0.45	5.33
RUN 2_006	10/23/2015	13:23	7.23	2.36	8.33	14.40	3.45	30.72	1.26	-1.69	189.55	1580.05	0.45	5.49
RUN 2_006	10/23/2015	13:24	7.24	2.53	8.66	14.75	3.94	30.71	1.24	-1.61	196.06	1679.24	0.45	5.63
RUN 2_006	10/23/2015	13:25	7.21	2.63	8.97	14.98	4.73	30.84	1.23	-1.65	201.68	1780.66	0.45	5.73
RUN 2_006	10/23/2015	13:26	7.17	2.56	9.17	15.50	5.14	30.78	1.29	-1.60	205.90	1842.75	0.43	5.85
RUN 2_006	10/23/2015	13:27	7.15	2.60	9.34	15.77	5.73	30.67	1.21	-1.72	209.04	1905.37	0.43	5.84
RUN 2_006	10/23/2015	13:28	7.16	2.72	9.66	16.12	6.39	30.84	1.13	-1.67	216.63	1985.33	0.45	5.92
RUN 2_006	10/23/2015	13:29	7.16	2.85	10.14	16.27	6.91	30.90	1.25	-1.67	223.04	2041.12	0.47	5.97
RUN 2_006	10/23/2015	13:30	7.16	2.65	10.61	16.91	7.48	30.98	1.32	-1.57	232.26	2110.62	0.49	5.83
RUN 2_006	10/23/2015	13:31	7.12	2.77	11.04	17.64	8.16	30.96	1.34	-1.58	240.70	2165.35	0.53	5.88
RUN 2_006	10/23/2015	13:32	7.06	2.79	11.40	17.74	8.38	30.99	1.29	-1.61	244.27	2194.18	0.57	5.84
RUN 2_006	10/23/2015	13:33	6.98	2.59	11.72	17.35	8.54	31.06	1.22	-1.49	237.75	2107.39	0.66	6.10
RUN 2_006	10/23/2015	13:34	6.96	2.72	12.18	17.69	8.88	30.97	1.25	-1.63	241.12	2081.87	0.67	6.06
RUN 2_006	10/23/2015	13:35	6.96	2.92	12.51	18.55	9.39	31.11	1.35	-1.60	253.62	2140.39	0.67	6.07
RUN 2_006	10/23/2015	13:36	6.95	2.93	12.91	19.23	10.08	31.18	1.28	-1.54	264.05	2200.46	0.67	6.28
RUN 2_006	10/23/2015	13:37	6.94	3.10	13.33	19.95	10.73	31.35	1.35	-1.57	272.64	2254.74	0.68	6.30
RUN 2_006	10/23/2015	13:38	6.93	2.94	13.34	20.16	10.73	31.45	1.31	-1.56	277.00	2274.88	0.68	6.34
RUN 2_006	10/23/2015	13:39	6.92	2.95	13.50	20.20	11.20	31.57	1.31	-1.59	279.83	2305.89	0.68	6.40
RUN 2_006	10/23/2015	13:40	6.93	2.90	13.69	20.13	11.28	31.66	1.31	-1.63	277.57	2296.45	0.72	6.43
RUN 2_006	10/23/2015	13:41	6.91	2.74	13.66	19.31	10.78	31.79	1.21	-1.52	263.71	2168.81	0.78	6.50
RUN 2_006	10/23/2015	13:42	6.91	2.86	14.27	19.77	11.26	31.85	1.26	-1.57	267.74	2138.64	0.79	6.54
RUN 2_006	10/23/2015	13:43	6.92	3.26	14.95	20.83	12.07	32.10	1.25	-1.54	280.95	2182.77	0.78	6.55
RUN 2_006	10/23/2015	13:44	6.93	3.16	15.26	21.56	12.56	32.20	1.21	-1.50	290.23	2213.80	0.77	6.47

Spectrum	Date	Time	H2O%(40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150C	CH4 wet	CO dry	CO2% dry	NOx dry	
RUN 2_006	10/23/2015	13:13	4.58	1.35	2.70	4.91	3.10	16.36	0.40	-1.58	41.03	169.53	0.72	3.21
RUN 2_006	10/23/2015	13:45	6.93	3.14	15.43	22.06	12.95	32.33	1.23	-1.54	297.41	2261.13	0.76	6.61
RUN 2_006	10/23/2015	13:46	6.93	3.06	15.46	22.00	13.04	32.69	1.21	-1.55	296.55	2254.85	0.79	6.69
RUN 2_006	10/23/2015	13:47	6.93	2.85	15.32	21.36	12.88	32.85	1.16	-1.54	287.13	2176.23	0.81	6.74
RUN 2_006	10/23/2015	13:48	6.95	3.03	15.47	21.76	13.09	33.03	1.21	-1.52	293.44	2220.24	0.79	6.75
RUN 2_006	10/23/2015	13:49	6.95	3.11	15.54	22.12	13.30	33.19	1.16	-1.53	298.88	2270.10	0.79	6.71
RUN 2_006	10/23/2015	13:50	6.95	3.17	15.65	22.43	13.61	33.35	1.14	-1.43	302.74	2301.39	0.77	6.61
RUN 2_006	10/23/2015	13:51	6.94	3.15	15.64	22.74	13.68	33.49	1.20	-1.48	307.32	2334.21	0.75	6.68
RUN 2_006	10/23/2015	13:52	6.94	3.27	15.44	22.53	13.79	33.80	1.11	-1.49	305.99	2343.95	0.74	6.64
RUN 2_006	10/23/2015	13:53	6.94	3.00	15.19	22.20	13.37	33.97	1.16	-1.50	303.15	2354.86	0.73	6.65
RUN 2_006	10/23/2015	13:54	6.94	3.08	15.00	21.97	13.31	34.14	1.18	-1.52	300.97	2364.15	0.73	6.72
RUN 2_006	10/23/2015	13:55	6.94	3.22	14.85	21.99	13.12	34.32	1.13	-1.57	299.67	2384.52	0.73	6.71
RUN 2_006	10/23/2015	13:56	6.92	3.10	14.68	21.75	13.25	34.62	1.13	-1.59	297.11	2373.42	0.73	6.61
RUN 2_006	10/23/2015	13:57	6.84	2.88	8.49	12.47	5.41	33.77	1.02	-1.63	117.97	1007.76	0.67	3.08
RUN 2_006	10/23/2015	13:58	6.61	2.29	11.85	15.46	9.65	33.63	0.89	-1.54	198.31	1711.99	1.40	3.53
RUN 2_006	10/23/2015	14:04	6.69	1.92	6.85	9.21	0.83	31.34	0.70	-1.50	93.53	813.62	0.98	2.15
RUN 2_006	10/23/2015	14:08	4.24	0.84	1.21	1.80	-3.66	13.23	0.31	-0.78	17.33	118.88	0.23	-0.12
RUN 2_006	10/23/2015	14:09	4.23	1.03	2.07	3.85	1.97	19.58	0.12	-1.11	29.43	127.69	0.59	2.29
RUN 2_006	10/23/2015	14:10	5.75	1.67	2.17	4.90	-1.83	30.75	0.12	-1.42	36.96	165.71	0.50	2.78
RUN 2_006	10/23/2015	14:11	6.62	2.12	3.66	7.77	-2.60	34.08	0.45	-1.66	77.23	338.00	0.48	3.13
RUN 2_006	10/23/2015	14:12	7.00	2.28	4.64	9.56	-2.44	34.86	0.65	-1.54	107.23	628.57	0.47	3.38
RUN 2_006	10/23/2015	14:13	7.13	2.62	5.65	11.18	-1.69	35.20	0.71	-1.58	132.69	832.58	0.48	3.76
RUN 2_006	10/23/2015	14:14	7.17	2.62	6.25	11.97	-1.11	35.28	0.82	-1.47	147.66	1004.56	0.45	4.00
RUN 2_006	10/23/2015	14:15	7.16	2.51	6.79	12.65	-0.61	35.11	0.87	-1.48	160.03	1146.36	0.45	4.12
RUN 2_006	10/23/2015	14:16	7.19	2.59	7.29	13.18	0.39	35.10	0.69	-1.37	171.41	1294.55	0.47	4.36
RUN 2_006	10/23/2015	14:17	7.16	2.73	7.70	13.67	0.90	34.90	0.76	-1.45	179.67	1404.53	0.43	4.47
RUN 2_006	10/23/2015	14:18	7.16	2.69	8.01	14.06	1.62	34.92	0.78	-1.44	185.46	1508.19	0.42	4.56
RUN 2_006	10/23/2015	14:19	7.14	2.80	8.41	14.67	2.43	34.82	0.97	-1.42	193.56	1615.05	0.43	4.56
RUN 2_006	10/23/2015	14:20	7.13	2.77	8.56	15.02	3.08	34.54	0.97	-1.39	199.39	1697.05	0.43	4.62
RUN 2_006	10/23/2015	14:21	7.13	2.63	8.87	15.40	3.45	34.59	0.97	-1.42	206.38	1786.35	0.43	4.82
RUN 2_006	10/23/2015	14:22	7.11	2.81	9.33	15.89	4.48	34.29	0.90	-1.44	211.07	1851.48	0.42	4.83

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 2_006	10/23/2015	13:13	4.58	1.35	2.70	4.91	3.10	16.36	0.40	-1.58	41.03	169.53	0.72	3.21
RUN 2_006	10/23/2015	14:23	7.11	2.99	9.47	16.20	4.98	34.25	0.87	-1.47	215.37	1925.93	0.40	4.75
RUN 2_006	10/23/2015	14:24	7.10	3.00	9.64	16.23	5.33	34.24	0.97	-1.43	219.10	1970.71	0.41	4.68
RUN 2_006	10/23/2015	14:25	7.07	2.94	9.83	16.36	5.72	34.20	0.98	-1.49	221.34	1995.50	0.43	4.85
RUN 2_006	10/23/2015	14:26	7.02	2.62	10.07	15.76	5.75	34.19	0.89	-1.53	208.45	1877.78	0.52	4.95
RUN 2_006	10/23/2015	14:27	6.96	2.62	10.34	16.27	6.09	33.93	0.87	-1.48	212.23	1850.70	0.53	5.14
RUN 2_006	10/23/2015	14:28	6.98	2.95	10.83	16.88	7.05	33.87	0.97	-1.39	225.89	1934.58	0.53	5.21
RUN 2_006	10/23/2015	14:29	6.98	3.01	11.39	17.76	7.97	34.08	0.92	-1.36	236.68	1992.06	0.53	5.19
RUN 2_006	10/23/2015	14:30	7.00	3.00	11.70	18.41	8.68	34.09	0.94	-1.45	246.10	2051.26	0.53	4.99
RUN 2_006	10/23/2015	14:31	6.97	3.12	12.09	18.88	9.10	33.95	1.05	-1.50	256.32	2094.87	0.55	5.10
RUN 2_006	10/23/2015	14:32	6.99	3.07	12.63	19.43	9.66	34.32	1.05	-1.43	264.39	2149.30	0.57	4.99
RUN 2_006	10/23/2015	14:33	6.98	3.21	12.78	19.86	9.83	34.16	1.11	-1.50	268.47	2188.71	0.59	5.00
RUN 2_006	10/23/2015	14:34	6.99	3.20	12.91	19.75	10.20	34.20	1.09	-1.49	272.05	2225.23	0.61	5.02
RUN 2_006	10/23/2015	14:35	6.99	3.28	12.82	19.98	10.35	34.28	1.09	-1.56	274.90	2255.29	0.62	4.92
RUN 2_006	10/23/2015	14:36	6.97	3.20	12.94	19.88	10.58	34.31	1.06	-1.52	276.72	2278.55	0.62	4.91
RUN 2_006	10/23/2015	14:37	6.98	3.28	13.10	20.21	10.81	34.44	1.09	-1.49	279.96	2325.24	0.63	4.87
RUN 2_006	10/23/2015	14:38	6.96	3.17	13.10	20.20	10.91	34.57	1.09	-1.53	280.14	2333.97	0.64	4.84
RUN 2_006	10/23/2015	14:39	6.96	3.32	13.22	20.40	11.06	34.67	1.13	-1.54	284.13	2369.83	0.64	4.82
RUN 2_006	10/23/2015	14:40	6.95	3.33	13.40	20.52	11.35	34.85	1.09	-1.49	285.74	2375.76	0.64	4.85
RUN 2_006	10/23/2015	14:41	6.97	3.24	13.40	20.63	11.39	35.01	1.05	-1.51	286.49	2380.61	0.65	4.77
RUN 2_006	10/23/2015	14:42	6.94	3.05	13.60	20.18	11.16	35.02	1.10	-1.46	279.67	2295.85	0.70	4.87
RUN 2_006	10/23/2015	14:43	6.94	3.20	13.75	20.52	11.54	35.19	1.13	-1.50	283.24	2297.83	0.71	4.82
RUN 2_006	10/23/2015	14:44	6.94	3.35	13.91	21.05	11.83	35.27	1.03	-1.47	290.22	2332.34	0.70	4.65
RUN 2_006	10/23/2015	14:45	6.94	3.34	14.27	21.55	12.48	35.40	1.07	-1.52	296.86	2358.22	0.68	4.83
RUN 2_006	10/23/2015	14:47	6.96	3.45	14.41	21.96	12.60	35.72	1.01	-1.49	302.41	2397.94	0.68	4.86
RUN 2_006	10/23/2015	14:48	6.95	3.26	14.31	21.90	12.45	35.77	1.02	-1.54	302.91	2390.72	0.67	4.84
RUN 2_006	10/23/2015	14:49	6.96	3.30	14.24	21.95	12.38	36.01	0.96	-1.45	303.77	2410.64	0.68	4.80
RUN 2_006	10/23/2015	14:50	6.97	3.41	14.29	21.85	12.43	36.22	1.04	-1.55	304.05	2412.85	0.69	4.73
RUN 2_006	10/23/2015	14:51	6.95	3.38	14.10	21.74	12.15	36.31	0.95	-1.55	301.11	2411.62	0.69	4.70
RUN 2_006	10/23/2015	14:52	6.93	3.09	13.84	21.00	11.81	36.54	0.91	-1.51	291.28	2329.41	0.76	4.85
RUN 2_006	10/23/2015	14:53	7.01	3.42	11.45	16.90	8.12	37.46	0.85	-1.62	194.69	1609.24	0.79	3.51

Spectrum	Date	Time	H2O% (40) 191C	Formaldehyde (70) 191C	Ethylene (100,3000) 191C	Ethane (500) 191C	Acetaldehyde (1000) 191C	MeOH (10) 191C	Acetic Acid 150C	Phenol 150C	CH4 wet	CO dry	CO2% dry	NOx dry
RUN 2_006	10/23/2015	13:13	4.58	1.35	2.70	4.91	3.10	16.36	0.40	-1.58	41.03	169.53	0.72	3.21
RUN 2_006	10/23/2015	14:54	6.61	2.15	9.76	13.64	6.80	34.30	0.64	-1.48	151.88	1278.23	1.14	1.89
RUN 2_006	10/23/2015	14:55	7.06	2.48	11.82	15.88	7.46	39.18	0.96	-1.68	207.09	1739.76	1.56	2.95
RUN 2_006	10/23/2015	14:56	7.31	2.54	10.52	14.11	4.86	41.25	0.73	-1.67	178.22	1503.81	1.60	2.95
RUN 2_006	10/23/2015	14:57	7.52	2.38	9.38	12.56	2.31	43.23	0.86	-1.71	155.48	1308.25	1.57	3.09
RUN 2_006	10/23/2015	14:58	7.12	1.84	4.79	7.29	-4.12	37.71	0.60	-1.64	75.19	620.96	0.86	1.17
RUN 2_006	10/23/2015	14:59	6.26	1.46	3.25	5.04	-5.20	31.08	0.41	-1.43	50.33	339.19	0.59	0.35
RUN 2_006	10/23/2015	15:00	5.51	1.15	2.30	3.79	-5.32	25.65	0.32	-1.22	35.74	243.40	0.44	-0.02
RUN 2_006	10/23/2015	15:01	4.96	1.00	1.78	3.03	-4.86	21.30	0.47	-1.12	26.70	179.52	0.33	-0.19
RUN 2_006	10/23/2015	15:02	4.53	0.92	1.90	3.10	-3.87	18.85	0.39	-0.95	30.21	203.89	0.37	0.12
RUN 2_006	10/23/2015	15:03	4.20	0.83	1.68	2.77	-3.46	16.73	0.33	-0.93	26.94	179.95	0.33	0.05
RUN 2_006	10/23/2015	15:04	4.40	0.98	2.69	4.61	0.29	21.56	0.24	-1.11	40.65	193.18	0.58	1.26
RUN 2_006	10/23/2015	15:05	5.88	1.68	2.95	6.54	-1.90	34.08	0.13	-1.47	48.54	163.95	0.46	1.76
RUN 2_006	10/23/2015	15:06	6.75	2.28	4.58	9.43	-3.17	37.52	0.42	-1.45	93.36	330.92	0.45	2.17
RUN 2_006	10/23/2015	15:07	7.06	2.56	5.71	11.76	-2.52	38.29	0.44	-1.47	127.57	592.84	0.44	2.40
RUN 2_006	10/23/2015	15:08	7.17	2.82	6.64	12.98	-2.05	38.46	0.64	-1.49	151.24	799.91	0.46	2.58
RUN 2_006	10/23/2015	15:09	7.18	2.71	7.13	13.61	-1.41	38.17	0.72	-1.45	164.17	951.25	0.43	2.71
Average Wet			6.79	2.66	10.06	15.72	6.15	32.53	0.95	-1.52	206.32			
Average Dry				2.86	10.79	16.86	6.60	34.90	1.02	0.13	221.35	1647.12	0.63	4.56
DL			0.02	0.19	0.09	0.23	0.21	0.10	0.10	0.13	0.09	0.13	0.01	0.16
Flow DSCFM		390.0												
lb/hr				0.005	0.018	0.031	0.018	0.068	0.004	0.001	0.216	2.801		0.013

Osceola Foods

Osceola, IA

DATE 10-22-2015

TIME 14:34:10

Time sec/day	O2 %	THC ppm
14:36:00	20.37	137.66
14:37:00	20.35	142.63
14:38:00	20.36	157.45
14:39:00	20.35	165.44
14:40:00	20.31	172.88
14:41:00	20.27	179.18
14:42:00	20.23	186.08
14:43:00	20.18	191.59
14:44:00	20.11	197.78
14:45:00	19.98	203.28
14:46:00	19.92	207.19
14:47:00	19.89	212.65
14:48:00	19.85	217.7
14:49:00	19.78	220.27
14:50:00	19.72	224.42
14:51:00	19.62	229.04
14:52:00	19.61	231.84
14:53:00	19.59	233.53
14:54:00	19.57	235.52
14:55:00	19.52	239.12
14:56:00	19.5	239.93
14:57:00	19.41	245.45
14:58:00	19.42	246.39
14:59:00	19.41	246.41
15:00:00	19.41	250.25
15:01:00	19.42	251.2
15:02:00	19.37	252.75
15:03:00	19.33	258.54
15:04:00	19.33	258.25
15:05:00	19.34	259.13
15:06:00	19.33	262.92
15:07:00	19.35	263.59
15:08:00	19.31	269.61
15:09:00	19.3	273.67
15:10:00	19.33	273.81
15:11:00	19.37	274.81
15:12:00	19.41	278.44
15:13:00	19.44	279.97
15:14:00	19.44	283.64
15:15:00	19.43	288.58
15:16:00	19.46	288.71
15:17:00	19.51	290.09
15:18:00	19.53	289.62

15:19:00	19.56	292.38
15:20:00	19.55	293.06
15:21:00	19.53	299.36
15:22:00	19.52	301.43
15:23:00	19.53	302.62
15:24:00	19.53	305.93
15:25:00	19.54	307.62
15:26:00	19.53	310.92
15:27:00	19.44	311.66
15:28:00	19.44	308.82
15:29:00	19.42	295.19
15:30:00	19.44	267.59
15:31:00	19.5	239.57
15:32:00	19.57	205.45
15:33:00	20.16	47.19
15:34:00	20.54	133.49
15:35:00	19.49	218.37
15:36:00	19.49	244.7
15:37:00	19.51	258.89
15:38:00	19.51	271.22
15:39:00	19.48	279.05
15:40:00	19.47	286.03
15:41:00	19.46	290.42
15:42:00	19.48	293.34
15:43:00	19.47	296.62
15:44:00	19.48	301.38
15:45:00	19.45	310.67
15:46:00	19.45	312.69
15:47:00	19.44	313.58
15:48:00	19.48	315.04
15:49:00	19.48	319.58
15:50:00	19.49	324.23
15:51:00	19.46	324.89
15:52:00	19.44	325.48
15:53:00	19.44	327.4
15:54:00	19.49	330.53
15:55:00	19.51	333
15:56:00	19.52	336.96
15:57:00	19.5	337.83
15:58:00	19.33	211.15
15:59:00	19.74	238.01
16:00:00	18.23	250.73
16:01:00	18.09	223.31
16:02:00	17.93	194.35
16:03:00	19.16	50.82
16:04:00	20.56	19.97
16:05:00	20.71	13.14
16:06:00	20.75	12.61
16:07:00	20.73	15.05
16:08:00	20.63	18.2

16:09:00	20.64	16.9
16:10:00	20.59	18.3
16:11:00	20.7	12.88
16:12:00	20.73	12.39
16:13:00	20.77	9.75
16:14:00	20.8	8.97
16:15:00	20.85	7.64
16:16:00	20.85	7.85
16:17:00	20.84	10.62
16:18:00	20.88	9.48
16:19:00	20.89	7.54
16:20:00	20.92	6.86
16:21:00	20.88	10.3
16:22:00	20.86	9.21
16:23:00	20.91	5.66
16:24:00	20.97	7.28
16:25:00	20.95	6.2
16:26:00	21	5.63
16:27:00	21.02	5.1
16:28:00	21.01	4.42
16:29:00	20.83	33.36
16:30:00	20.6	83.54
16:31:00	20.69	121.65
16:32:00	20.7	145.39
16:33:00	20.7	165.47
16:34:00	20.7	182.08
16:35:00	20.71	197.67
16:36:00	20.72	211.39
16:37:00	20.74	220.88
16:38:00	20.75	231.5
16:39:00	20.76	238.28
16:40:00	20.75	244.65
16:41:00	20.78	253.67
16:42:00	20.8	260.12
16:43:00	20.85	263.84
16:44:00	20.83	266.08
16:45:00	20.81	274.79
16:46:00	20.74	278.86
16:47:00	20.7	281.58
16:48:00	20.68	288.23
16:49:00	20.69	289.71

Average	20.0	203.3

Adjusted for Bias

	O2	VOC
Dry	20.0	200.3
Wet		191.6
Corrected - methane		111.4
ethane Outlet		0.33
lb/hr C3		

Moisture	4.35
Flow	418

Methane ppm	231.00
Ethane ppm	23.8

Bias Correction Values			
	-0.05	2.60	3.50
	15.01	606.50	315.00

Osceola Foods

Osceola, IA

DATE 10-22-2015

TIME 16:59:28

Time sec/day	O2 %	THC ppm
17:01:00	20.41	302.63
17:02:00	20.41	306.26
17:03:00	20.38	307.53
17:04:00	20.35	310.46
17:05:00	20.34	316.46
17:06:00	20.33	319.69
17:07:00	20.36	319.35
17:08:00	20.35	317.54
17:09:00	20.32	320.21
17:10:00	20.29	317.98
17:11:00	20.27	318.66
17:12:00	20.23	318.27
17:13:00	20.23	316.55
17:14:00	20.17	314.2
17:15:00	20.09	314.72
17:16:00	20.03	312.93
17:17:00	20.02	312.83
17:18:00	20.01	311.01
17:19:00	20.05	307.61
17:20:00	20.04	306.83
17:21:00	20.05	306.47
17:22:00	20.05	305.5
17:23:00	20.06	305.05
17:24:00	20.08	303.55
17:25:00	20.15	302.02
17:26:00	20.17	300.53
17:27:00	20.17	299.47
17:28:00	20.18	294.19
17:29:00	20.16	279.55
17:30:00	20.21	253.76
17:31:00	20.31	225.54
17:32:00	20.24	187.91
17:33:00	20.84	70.82
17:34:00	21.22	119.04
17:35:00	20.41	187.48
17:36:00	20.49	210.12
17:37:00	20.53	221.66
17:38:00	20.54	229.57
17:39:00	20.54	233.55
17:40:00	20.54	236.81
17:41:00	20.5	241.03
17:42:00	20.51	246.04
17:43:00	20.55	247.8
17:44:00	20.55	248.83
17:45:00	20.52	249.88
17:46:00	20.51	250.11
17:47:00	20.51	251.76

17:48:00	20.53	253.48
17:49:00	20.54	246.22
17:50:00	20.57	236.6
17:51:00	20.56	235.12
17:52:00	20.54	235.95
17:53:00	20.48	238.31
17:54:00	20.45	239.23
17:55:00	20.43	239.85
17:56:00	20.42	240.68
17:57:00	20.36	242.46
17:58:00	20.17	176.13
17:59:00	20.4	171.12
18:00:00	18.92	190.09
18:01:00	18.82	173
18:02:00	18.66	156.43
18:03:00	19.65	67.47
18:04:00	21.08	37.2
18:05:00	21.3	26.2
18:06:00	21.18	24.18
18:07:00	19.53	20.58
18:08:00	20.94	19.7
18:09:00	21.24	21.01
18:10:00	21.28	18.52
18:11:00	21.28	19.86
18:12:00	21.15	18.69
18:13:00	21.2	18.61
18:14:00	21.21	17.47
18:15:00	21.22	18.49
18:16:00	21.2	17.18
18:17:00	21.22	17.99
18:18:00	21.25	18.36
18:19:00	21.28	18.98
18:20:00	21.37	18.47
18:21:00	21.31	20.46
18:22:00	21.32	19.48
18:23:00	21.32	17.25
18:24:00	21.31	17.67
18:25:00	21.22	21.74
18:26:00	21.13	21.43
18:27:00	21.1	20.92
18:28:00	21.15	19.43
18:29:00	20.97	29.5
18:30:00	20.83	52.58
18:31:00	20.97	91.77
18:32:00	21.04	115.81
18:33:00	21.07	130.32
18:34:00	21.1	145.36
18:35:00	21.09	156.32
18:36:00	21.1	167.25
18:37:00	21.1	174.59
18:38:00	21.11	182.92
18:39:00	21.06	191.94
18:40:00	21.04	196.72
18:41:00	20.99	203.65

18:42:00	20.95	210.33
18:43:00	20.93	215.89
18:44:00	20.94	221.95
18:45:00	20.94	226.99
18:46:00	20.97	230.71
18:47:00	20.99	235.15
18:48:00	21.05	240.51
18:49:00	21.07	244.49
18:50:00	21.08	248.27
18:51:00	21.01	252.23
18:52:00	20.95	256.15
18:53:00	20.87	260.37
18:54:00	20.81	263.49
18:55:00	20.76	267.06
18:56:00	20.74	270.95
18:57:00	20.71	271.14
18:58:00	20.71	271.67
18:59:00	20.7	273.02
19:00:00	20.72	274.63
19:01:00	20.74	274.78
19:02:00	20.74	275.7
19:03:00	20.7	276.16
19:04:00	20.68	267.56
19:05:00	20.62	258.74

Average	20.6	197.3

Adjusted for Bias

	O2	VOC
Dry	20.70	193.94
Wet	20.7	185.1
Corrected - methane ethane Outlet		96.0
Ib/hr C3		0.33
Moisture	4.57	
Flow	484	

Methane ppm	251.40

Ethane ppm	28.3

Bias Correction Values

-0.02	5.30	1.50
14.94	619.00	317.50

Osceola Foods

Osceola, IA

DATE 10-22-2015

TIME 19:16:34

Time sec/day	O2 %	THC ppm
19:18:00	20.58	288.84
19:19:02	20.58	298.95
19:20:03	20.6	312.37
19:21:03	20.55	319.49
19:22:03	20.52	304.86
19:23:03	20.45	292.97
19:24:03	20.43	301.08
19:25:03	20.41	313.14
19:26:03	20.41	318.28
19:27:03	20.38	305.33
19:28:03	20.36	287.44
19:29:03	20.32	271.22
19:30:03	20.38	248.1
19:31:03	20.47	227.61
19:32:03	20.59	199.27
19:33:03	21.01	103.9
19:34:03	21.19	157.41
19:35:03	20.63	191.45
19:36:03	20.68	214.58
19:37:03	20.69	236.13
19:38:03	20.71	249.67
19:39:05	20.64	241.69
19:40:05	20.57	252.37
19:41:05	20.51	269.87
19:42:05	20.49	274.26
19:43:05	20.46	266.16
19:44:05	20.43	256.67
19:45:05	20.38	270.67
19:46:05	20.38	278.91
19:47:05	20.38	283.51
19:48:05	20.42	276.72
19:49:05	20.46	259.94
19:50:05	20.5	253.75
19:51:05	20.51	267.9
19:52:05	20.54	282.1
19:53:05	20.49	287.97
19:54:05	20.47	275.86
19:55:05	20.45	256.93
19:56:05	20.44	260.67
19:57:05	20.41	279.18
19:58:05	20.18	186.73
19:59:05	20.34	227.21
20:00:05	19	228.7
20:01:05	18.85	205.72
20:02:05	18.7	180.89
20:03:05	19.89	69.97
20:04:05	21.11	45.85

20:05:05	21.16	40.65
20:06:05	21.18	40.95
20:07:05	21.25	33.74
20:08:05	21.29	35.33
20:09:05	21.26	30.44
20:10:05	21.25	29.43
20:11:05	21.21	27.87
20:12:05	21.17	25.73
20:13:05	21.2	25.45
20:14:05	21.19	27.94
20:15:05	21.16	24.87
20:16:05	21.22	25.26
20:17:05	21.24	25.35
20:18:05	21.23	25.72
20:19:05	21.28	23.89
20:20:05	21.38	23.88
20:21:05	21.35	24.47
20:22:05	21.34	24.5
20:23:05	21.32	24.21
20:24:05	21.28	23.53
20:25:05	21.29	23.72
20:26:05	21.33	20.49
20:27:05	21.27	22.38
20:28:05	21.25	20.42
20:29:05	21.04	43.86
20:30:05	21	86.77
20:31:05	21.03	124.76
20:32:05	21.09	147.49
20:33:05	21.1	159.95
20:34:05	21.12	157.88
20:35:05	21.12	154.83
20:36:05	21.11	149.36
20:37:05	21.08	158.91
20:38:05	21.08	183.1
20:39:05	21.05	203.03
20:40:05	21.03	205.51
20:41:05	20.99	199.32
20:42:05	20.96	186.31
20:43:05	20.93	197.62
20:44:05	20.98	219.01
20:45:05	21	232.85
20:46:05	21.02	232.48
20:47:05	21.05	227.73
20:48:05	21.06	219.92
20:49:05	21.07	229.92
20:50:05	21.09	247.54
20:51:05	21.06	256.72
20:52:05	21.07	253.13
20:53:05	21.03	247.42
20:54:05	21.02	238.74
20:55:05	20.97	245.3
20:56:05	20.93	248.91
20:57:05	20.87	245.38
20:58:05	20.81	244.17

20:59:05	20.77	236.24
21:00:05	20.78	241.39
21:01:05	20.79	248.67
21:02:05	20.83	252.91
21:03:05	20.81	248.12
21:04:05	20.77	235.45
21:05:05	20.73	246.12
21:06:05	20.72	264.35
21:07:05	20.69	270.39
21:08:05	20.7	264.85
21:09:05	20.66	249.07
21:10:05	20.64	252.3
21:11:05	20.58	271.1
21:12:05	20.57	283.87
21:13:05	20.59	277.95
21:14:05	20.63	260.69
21:15:05	20.63	264.83
21:16:05	20.62	278.41
21:17:05	20.58	283.17

Average	20.8	193.4

Adjusted for Bias

	O2	VOC
Dry	20.68	198.48
Wet	20.7	189.4
Corrected - methane	ethane	Outlet
lb/hr C3		124.6
Moisture	4.59	0.36
Flow	402	

Methane ppm	188.00

Ethane ppm	22.4

Bias Correction Values

0.00	7.05	0.10
15.11	622.50	305.00

Osceola Foods

Osceola, IA

DATE 10-23-2015

TIME 10:58:43

Time sec/day	O2 %	THC ppm
11:00:00	20.63	13.12
11:01:00	20.64	11.57
11:02:00	20.72	12.49
11:03:00	20.74	12.51
11:04:00	20.8	12.04
11:05:00	20.81	12.03
11:06:00	20.88	11.7
11:07:00	20.94	11.21
11:08:00	21.03	11.43
11:09:00	21.07	10.8
11:10:00	21.15	10.25
11:11:00	21.19	9.9
11:12:00	21.22	9.32
11:13:00	21.21	9.12
11:14:00	21.19	9.06
11:15:00	21.13	8.79
11:16:00	21.04	8.75
11:17:00	20.97	13.84
11:18:00	20.35	28.82
11:19:00	20.25	38.57
11:20:00	20.12	47.88
11:21:00	19.88	66.62
11:22:00	19.74	85.95
11:23:00	19.58	105.66
11:24:00	19.31	122.75
11:25:00	19.25	134.45
11:26:00	19.16	145.94
11:27:00	19.03	155.71
11:28:00	18.95	158.33
11:29:00	18.86	158.77
11:30:00	18.76	166.28
11:31:00	18.81	175.07
11:32:00	18.83	180.72
11:33:00	18.82	184.95
11:34:00	18.85	189.38
11:35:00	18.87	186.02
11:36:00	18.81	187.64
11:37:00	18.92	189.35
11:38:00	18.98	194.44
11:39:00	19	199.13
11:40:00	19.07	202.43
11:41:00	19.1	200.54
11:42:00	19.02	193.69

11:43:00	19.08	193.69
11:44:00	19.17	201.31
11:45:00	19.19	205.62
11:46:00	19.23	206.67
11:47:00	19.22	210.57
11:48:00	19.14	211.34
11:49:00	19.12	210.39
11:50:00	19.13	211.43
11:51:00	19.05	211.44
11:52:00	19.02	209.58
11:53:00	18.94	209.21
11:54:00	18.84	206.87
11:55:00	18.8	203.56
11:56:00	18.78	204.82
11:57:00	18.71	205.62
11:58:00	18.69	205.25
11:59:00	18.65	206.63
12:00:00	18.6	207.35
12:01:00	18.56	203.28
12:02:00	18.58	206.76
12:03:00	18.56	200.93
12:04:00	18.58	200.92
12:05:00	18.58	200.01
12:06:00	18.42	154.15
12:07:00	18.94	132.33
12:08:00	17	149.92
12:09:00	16.91	134.14
12:10:00	16.96	122.57
12:11:00	17.99	52.6
12:12:00	19.79	31.49
12:13:00	20.02	25.36
12:14:00	20.07	21.63
12:15:00	20.08	18.34
12:16:00	20.09	17.94
12:17:00	19.55	35.24
12:18:00	19.29	55.37
12:19:00	19.37	73.61
12:20:00	19.14	88.97
12:21:00	19.13	103.21
12:22:00	19.13	112.72
12:23:00	19.14	119.38
12:24:00	19.08	125.81
12:25:00	19.03	126.06
12:26:00	18.96	133.65
12:27:00	18.9	142.16
12:28:00	18.84	148.95
12:29:00	18.77	156.01
12:30:00	18.68	161.45
12:31:00	18.6	164.14
12:32:00	18.57	173.37

12:33:00	18.55	176.51
12:34:00	18.57	178.63
12:35:00	18.56	179.86
12:36:00	18.54	181.63
12:37:00	18.52	184.4
12:38:00	18.6	185.96
12:39:00	18.65	186.71
12:40:00	18.76	189.56
12:41:00	18.83	195.44
12:42:00	18.89	202.12
12:43:00	18.93	204.4
12:44:00	19.04	205.48
12:45:00	19.14	204.27
12:46:00	19.2	201.49
12:47:00	19.27	205.39
12:48:00	19.29	208.48
12:49:00	19.36	210.05
12:50:00	19.42	213.23
12:51:00	19.5	214.95
12:52:00	19.57	213.48
12:53:00	19.6	214.95
12:54:00	19.61	215.29
12:55:00	19.64	212.66
12:56:00	19.68	213.09
12:57:00	19.71	208.29
12:58:00	19.7	206.05
12:59:00	19.72	209.32
13:00:00	19.75	211.25

Average	19.3	140.9

Adjusted for Bias

	O2	Inlet
Dry	19.3	141.2
Wet		135.9
Corrected - methane ethane Outlet		79.2
lb/hr C3		0.21
Moisture	3.73	
Flow	372	

Methane ppm	166.28
Ethane ppm	13.1

Bias Correction Values

-0.04	4.60
15.03	304.20

Osceola Foods

Osceola, IA

DATE 10-23-2015

TIME 13:11:03

Time sec/day	O2 %	THC ppm
13:13:00	20.35	60.29
13:14:00	20.49	79
13:15:00	20.53	94.85
13:16:00	20.57	107.75
13:17:00	20.59	115.11
13:18:00	20.63	121.61
13:19:00	20.66	128.42
13:20:00	20.69	133.43
13:21:00	20.72	137.18
13:22:00	20.75	142.37
13:23:00	20.76	145.31
13:24:00	20.78	147
13:25:00	20.78	148.87
13:26:00	20.8	150.51
13:27:00	20.78	154.72
13:28:00	20.77	157.72
13:29:00	20.71	163.93
13:30:00	20.68	167.82
13:31:00	20.62	168.55
13:32:00	20.57	165.85
13:33:00	20.49	168.64
13:34:00	20.5	175.67
13:35:00	20.48	181.3
13:36:00	20.48	187.66
13:37:00	20.49	189.18
13:38:00	20.47	190.02
13:39:00	20.47	190.54
13:40:00	20.39	182.95
13:41:00	20.36	186.62
13:42:00	20.37	196.07
13:43:00	20.41	200.73
13:44:00	20.42	205.23
13:45:00	20.42	205.77
13:46:00	20.37	201.21
13:47:00	20.37	203.58
13:48:00	20.38	207.19
13:49:00	20.41	206.86
13:50:00	20.41	210.24
13:51:00	20.43	209.82
13:52:00	20.41	207.39
13:53:00	20.43	206.97
13:54:00	20.43	203.33
13:55:00	20.43	203.04
13:56:00	20.3	163.25
13:57:00	20.32	131.13
13:58:00	18.79	157.87
13:59:00	18.64	141.97

14:00:00	18.5	127.02
14:01:00	19.48	53.04
14:02:00	20.81	36.08
14:03:00	20.98	29.4
14:04:00	21.02	24.46
14:05:00	21.04	25.41
14:06:00	21.05	23.54
14:07:00	20.99	39.56
14:08:00	20.42	51.91
14:09:00	20.58	71.76
14:10:00	20.63	89.21
14:11:00	20.65	103.63
14:12:00	20.7	113.36
14:13:00	20.71	119.44
14:14:00	20.72	125.67
14:15:00	20.73	130.95
14:16:00	20.78	133.61
14:17:00	20.81	136.23
14:18:00	20.88	140.54
14:19:00	20.92	143.68
14:20:00	20.97	148.08
14:21:00	20.99	153.83
14:22:00	21.01	156.61
14:23:00	21.02	158.38
14:24:00	21.03	156.4
14:25:00	20.92	152.52
14:26:00	20.87	158.67
14:27:00	20.82	166.24
14:28:00	20.81	173
14:29:00	20.78	175.56
14:30:00	20.71	182.34
14:31:00	20.6	185.45
14:32:00	20.51	186.84
14:33:00	20.43	188.88
14:34:00	20.39	191.15
14:35:00	20.38	191.14
14:36:00	20.35	192.93
14:37:00	20.33	192.65
14:38:00	20.31	197.82
14:39:00	20.33	198.79
14:40:00	20.35	197.23
14:41:00	20.35	193.67
14:42:00	20.37	196.38
14:43:00	20.42	200.94
14:44:00	20.43	205.51
14:45:00	20.48	208.42
14:46:00	20.52	207.89
14:47:00	20.57	207.21
14:48:00	20.56	206.03
14:49:00	20.54	205.4
14:50:00	20.49	201.04
14:51:00	20.36	159.98
14:52:00	20.36	146.44
14:53:00	18.93	157.46

14:54:00	18.7	142.02
14:55:00	18.68	130.82
14:56:00	19.11	79.14
14:57:00	20.21	58.86
14:58:00	20.52	46.23
14:59:00	20.71	35.98
15:00:00	20.74	35.92
15:01:00	20.7	33.65
15:02:00	20.59	49.52
15:03:00	20.31	64.84
15:04:00	20.52	88.8
15:05:00	20.54	105.66
15:06:00	20.55	120.14
15:07:00	20.57	125.62
15:08:00	20.58	130.48

Average	20.5	146.3

Adjusted for Bias

	O2	0
Dry	20.28	151.19
Wet	20.3	143.2
Corrected - methane ethane Outlet		74.1
Ib/hr C3		0.21
Moisture	5.27	
Flow	390	

Methane ppm	206.30

Ethane ppm	16.7

Bias Correction Values

-0.01	5.95
15.18	298.65

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-16-2015

TIME 09:06:06

m1016023.prn

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
09:06:20	-0.00	4.39	-0.01	7.2
09:06:30	-0.01	4.54	0.00	17.6
09:06:40	3.77	4.83	0.01	-1.6
09:06:50	12.57	32.23	-0.00	0.9
09:07:00	3.55	808.30	-0.00	0.0
09:07:10	0.20	2564.36	0.03	-0.2
09:07:20	0.01	3327.98	0.01	0.7
09:07:30	0.00	3337.65	0.00	0.4
09:07:40	-0.01	3337.65	-0.00	-0.4
09:07:50	-0.00	3337.50	0.03	3.2
09:08:00	-0.01	3337.21	-0.01	-1.5
09:08:10	-0.01	3336.91	0.00	-1.1
09:08:20	-0.01	3336.62	0.00	2.9
09:08:30	-0.02	3336.91	0.01	-0.9
09:08:40	-0.01	3336.47	0.00	-0.5
09:08:50	-0.03	3336.47	0.01	3.6
09:09:00	-0.01	3336.33	0.01	2.4
09:09:10	0.35	3336.33	-0.01	5.2
09:09:20	9.18	3297.36	-0.02	-1.5
09:09:30	18.89	1930.08	-0.01	1.1
09:09:40	10.64	830.57	-0.01	1.3
09:09:50	1.26	1207.32	0.04	-1.5
09:10:00	0.06	1473.63	0.01	1.4
09:10:10	0.01	1447.71	-0.01	1.2
09:10:20	-0.01	1414.01	0.01	-1.1
09:10:30	-0.02	1411.38	-0.02	0.0
09:10:40	-0.01	1410.06	0.01	5.5
09:10:50	-0.01	1410.06	-0.03	744.2
09:11:00	2.24	1391.89	-0.01	851.2
09:11:10	8.66	1107.13	-0.01	857.9
09:11:20	2.16	610.55	0.03	868.3
09:11:30	0.10	214.45	0.01	861.3
09:11:40	-0.02	53.61	-0.00	849.3
09:11:50	-0.00	15.38	-0.02	856.2
09:12:00	-0.01	10.25	-0.01	849.6
09:12:10	-0.02	8.94	0.02	220.2
09:12:20	-0.02	8.20	0.01	527.6
09:12:30	2.77	7.91	0.02	517.6
09:12:40	9.93	10.11	0.01	512.5
09:12:50	2.47	21.39	-0.01	512.0
09:13:00	0.12	19.63	0.03	517.2
09:13:10	-0.02	10.99	-0.00	516.7
09:13:20	-0.02	7.91	0.01	519.3
09:13:30	-0.02	6.74	-0.01	518.5
09:13:40	-0.02	6.59	-0.00	513.9
09:13:50	-0.02	6.59	-0.00	516.3
09:14:00	-0.03	6.01	0.01	514.1
09:14:10	-0.02	5.57	0.01	389.0
09:14:20	-0.02	5.27	-0.00	311.5
09:14:30	1.16	5.27	0.01	308.0
09:14:40	1.75	5.27	0.01	311.5
09:14:50	0.18	5.13	0.00	308.3
09:15:00	-0.02	5.13	-0.02	309.6

~~Cal O~~
Cal O
Friday

O₂ 8,435 15.02
CO₂ 10,175 19.85

Propane 298.7

459

842

Ethylene 105

CO 1405

CO 3873

09:15:10	-0.02	5.27	-0.01	305.2
09:15:20	-0.02	4.83	-0.01	201.6
09:15:30	-0.04	4.98	-0.00	104.7
09:15:40	0.13	4.69	-0.00	6.7
09:15:50	5.39	4.83	-0.01	0.2
09:16:00	11.62	5.86	-0.03	3.0
09:16:10	14.44	7.47	0.07	2.2
09:16:20	14.82	8.79	4.38	1.7
09:16:30	14.82	8.79	13.23	3.7
09:16:40	14.82	8.79	18.18	-0.8
09:16:50	14.84	8.79	19.04	2.6
09:17:00	14.85	8.79	19.32	2.9
09:17:10	14.84	8.79	19.70	-1.0
09:17:20	14.82	8.64	19.89	2.6
09:17:30	14.81	8.64	19.84	3.4
09:17:40	14.77	8.79	19.93	0.3
09:17:50	14.90	8.79	19.97	-1.4
09:18:00	13.56	7.62	19.82	0.9
09:18:10	9.33	1.76	19.74	3.3
09:18:20	8.40	1.32	17.40	0.6
09:18:30	8.33	0.73	13.65	0.1
09:18:40	8.34	0.88	11.40	3.0
09:18:50	8.33	0.73	10.69	0.0
09:19:00	8.32	0.59	10.60	-1.9
09:19:10	8.34	0.15	10.59	0.3
09:19:20	8.32	0.15	10.56	2.3
09:19:30	8.53	0.15	10.57	2.9
09:19:40	8.47	0.00	10.56	0.4
09:19:50	2.05	-0.29	10.49	-2.0
09:20:00	0.13	-0.59	8.45	-1.9
09:20:10	0.00	-0.88	4.12	0.0
09:20:20	-0.00	-1.03	1.30	2.2
09:20:30	-0.01	-1.32	0.36	2.7
09:20:40	-0.00	-1.32	0.18	2.8
09:20:50	-0.02	-0.73	0.11	2.2
09:21:00	-0.02	-0.88	0.07	0.3
09:21:10	-0.01	-0.73	0.08	-2.1
09:21:20	-0.02	-1.32	0.10	-2.2
09:21:30	-0.03	-0.73	0.03	1.1
09:21:40	-0.02	-0.73	0.06	2.0
09:21:50	-0.01	-0.73	0.07	-2.5
09:22:00	-0.02	-0.59	0.03	1.3
09:22:10	-0.03	-0.73	0.05	2.6
09:22:20	-0.03	-0.73	0.02	-1.9
09:22:30	-0.03	-0.88	0.03	-0.3
09:22:40	-0.02	-0.73	0.03	0.9
09:22:50	-0.02	-1.03	0.02	-1.3
09:23:00	-0.02	-1.32	0.02	1.9
09:23:10	-0.03	-0.88	0.02	-0.6
09:23:20	-0.03	-1.03	0.06	-2.3
09:23:30	-0.02	-1.32	0.04	-1.6
09:23:40	-0.02	-1.17	0.05	-1.7
09:23:50	-0.02	-1.17	0.06	-2.3
09:24:00	-0.02	-1.32	0.06	-2.4
09:24:10	-0.02	-1.46	0.05	-2.7
09:24:20	-0.02	-1.32	0.03	-3.0
09:24:30	-0.02	-1.46	0.01	-2.9
09:24:40	-0.02	-1.32	0.02	-2.7
09:24:50	-0.02	-1.32	0.01	-2.5
09:25:00	-0.02	-1.46	0.02	-2.8

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-16-2015

TIME 10:58:43

m1016025.prn

R1

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
11:00:00	20.63	0.05	0.22	13.1
11:01:00	20.64	-2.66	0.16	11.6
11:02:00	20.72	0.10	0.13	12.5
11:03:00	20.74	0.71	0.10	12.5
11:04:00	20.80	0.57	0.09	12.0
11:05:00	20.81	0.47	0.10	12.0
11:06:00	20.88	0.81	0.08	11.7
11:07:00	20.94	-0.09	0.08	11.2
11:08:00	21.03	-0.56	0.07	11.4
11:09:00	21.07	-0.58	0.06	10.8
11:10:00	21.15	-0.70	0.05	10.2
11:11:00	21.19	-0.75	0.06	9.9
11:12:00	21.22	-1.17	0.07	9.3
11:13:00	21.21	-1.31	0.06	9.1
11:14:00	21.19	-1.51	0.05	9.1
11:15:00	21.13	-1.46	0.05	8.8
11:16:00	21.04	-1.61	0.06	8.7
11:17:00	20.97	-1.61	0.05	13.8
11:18:00	20.35	28.11	0.24	28.8
11:19:00	20.25	88.41	0.41	38.6
11:20:00	20.12	137.31	0.41	47.9
11:21:00	19.88	212.92	0.49	66.6
11:22:00	19.74	373.74	0.58	85.9
11:23:00	19.58	522.15	0.66	105.7
11:24:00	19.31	698.93	0.81	122.8
11:25:00	19.25	881.23	0.87	134.4
11:26:00	19.16	1038.60	0.89	145.9
11:27:00	19.03	1194.46	0.96	155.7
11:28:00	18.95	1358.04	1.02	158.3
11:29:00	18.86	1438.65	1.07	158.8
11:30:00	18.76	1481.01	1.18	166.3
11:31:00	18.81	1592.27	1.20	175.1
11:32:00	18.83	1692.63	1.20	180.7
11:33:00	18.82	1778.79	1.23	185.0
11:34:00	18.85	1906.74	1.26	189.4
11:35:00	18.87	1987.41	1.26	186.0
11:36:00	18.81	1968.61	1.37	187.6
11:37:00	18.92	2005.69	1.35	189.3
11:38:00	18.98	2080.77	1.33	194.4
11:39:00	19.00	2149.25	1.34	199.1
11:40:00	19.07	2201.84	1.35	202.4
11:41:00	19.10	2258.55	1.33	200.5
11:42:00	19.02	2217.27	1.38	193.7
11:43:00	19.08	2146.98	1.43	193.7
11:44:00	19.17	2171.78	1.38	201.3
11:45:00	19.19	2245.10	1.37	205.6
11:46:00	19.23	2277.13	1.37	206.7
11:47:00	19.22	2319.90	1.34	210.6
11:48:00	19.14	2366.29	1.36	211.3
11:49:00	19.12	2418.83	1.36	210.4
11:50:00	19.13	2432.23	1.33	211.4
11:51:00	19.05	2482.13	1.33	211.4
11:52:00	19.02	2490.97	1.32	209.6

11:53:00	18.94	2506.45	1.30	209.2
11:54:00	18.84	2522.44	1.30	206.9
11:55:00	18.80	2544.10	1.31	203.6
11:56:00	18.78	2570.05	1.26	204.8
11:57:00	18.71	2586.63	1.25	205.6
11:58:00	18.69	2590.31	1.25	205.2
11:59:00	18.65	2580.08	1.24	206.6
12:00:00	18.60	2606.45	1.23	207.3
12:01:00	18.56	2608.01	1.24	203.3
12:02:00	18.58	2635.99	1.21	206.8
12:03:00	18.56	2646.56	1.20	200.9
12:04:00	18.58	2660.11	1.19	200.9
12:05:00	18.58	2651.54	1.17	200.0
12:06:00	18.42	2656.47	1.18	154.2
12:07:00	18.94	1295.98	1.04	132.3
12:08:00	17.00	2045.20	1.62	149.9
12:09:00	16.91	1821.03	2.08	134.1
12:10:00	16.96	1579.42	2.06	122.6
12:11:00	17.99	1115.04	1.96	52.6
12:12:00	19.79	226.30	0.56	31.5
12:13:00	20.02	111.16	0.27	25.4
12:14:00	20.07	66.78	0.20	21.6
12:15:00	20.08	52.08	0.14	18.3
12:16:00	20.09	39.70	0.13	17.9
12:17:00	19.55	43.19	0.11	35.2
12:18:00	19.29	192.51	0.43	55.4
12:19:00	19.37	204.23	0.44	73.6
12:20:00	19.14	407.60	0.45	89.0
12:21:00	19.13	627.23	0.45	103.2
12:22:00	19.13	823.78	0.45	112.7
12:23:00	19.14	1013.68	0.44	119.4
12:24:00	19.08	1168.93	0.44	125.8
12:25:00	19.03	1213.60	0.46	126.1
12:26:00	18.96	1246.61	0.49	133.7
12:27:00	18.90	1394.49	0.52	142.2
12:28:00	18.84	1543.22	0.54	149.0
12:29:00	18.77	1650.98	0.57	156.0
12:30:00	18.68	1761.50	0.60	161.5
12:31:00	18.60	1855.79	0.64	164.1
12:32:00	18.57	1957.50	0.69	173.4
12:33:00	18.55	2036.63	0.68	176.5
12:34:00	18.57	2114.48	0.70	178.6
12:35:00	18.56	2159.65	0.71	179.9
12:36:00	18.54	2227.52	0.74	181.6
12:37:00	18.52	2273.10	0.76	184.4
12:38:00	18.60	2314.19	0.78	186.0
12:39:00	18.65	2302.15	0.80	186.7
12:40:00	18.76	2280.47	0.81	189.6
12:41:00	18.83	2325.08	0.80	195.4
12:42:00	18.89	2380.45	0.82	202.1
12:43:00	18.93	2441.78	0.85	204.4
12:44:00	19.04	2454.08	0.85	205.5
12:45:00	19.14	2490.43	0.85	204.3
12:46:00	19.20	2450.27	0.84	201.5
12:47:00	19.27	2396.17	0.86	205.4
12:48:00	19.29	2450.86	0.88	208.5
12:49:00	19.36	2464.63	0.89	210.1
12:50:00	19.42	2498.66	0.87	213.2
12:51:00	19.50	2529.72	0.87	215.0
12:52:00	19.57	2542.97	0.85	213.5

12:53:00	19.60	2537.38	0.84	215.0
12:54:00	19.61	2553.76	0.85	215.3
12:55:00	19.64	2569.58	0.87	212.7
12:56:00	19.68	2569.49	0.87	213.1
12:57:00	19.71	2580.18	0.85	208.3
12:58:00	19.70	2453.86	0.89	206.0
12:59:00	19.72	2446.02	0.89	209.3
13:00:00	19.75	2501.74	0.89	211.2

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-16-2015

m1016026.prn

TIME 13:02:35

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
13:03:10	-0.02	9.38	-0.01	72.6
13:03:20	-0.01	8.79	-0.01	70.0
13:03:30	-0.00	8.06	0.01	90.2
13:03:40	-0.01	7.47	-0.00	20.9
13:03:50	0.64	10.99	-0.01	7.0
13:04:00	4.18	180.62	0.00	7.9
13:04:10	1.07	672.07	0.01	7.9
13:04:20	0.02	1156.20	0.27	5.9
13:04:30	-0.02	1358.35	0.19	7.0
13:04:40	-0.01	1399.51	0.04	7.7
13:04:50	-0.03	1404.20	-0.00	5.6
13:05:00	-0.04	1405.22	-0.01	19.9
13:05:10	-0.02	1406.84	-0.01	10.5
13:05:20	0.26	1406.40	0.02	9.3
13:05:30	4.84	1365.09	0.01	7.1
13:05:40	12.64	972.51	0.00	7.3
13:05:50	15.02	373.83	1.19	8.6
13:06:00	15.17	81.74	9.14	8.2
13:06:10	15.18	19.34	16.72	6.6
13:06:20	15.18	14.50	19.34	8.2
13:06:30	15.20	12.60	19.59	8.7
13:06:40	15.20	11.87	19.70	8.9
13:06:50	15.18	11.72	19.69	9.4
13:07:00	15.20	11.13	19.65	8.6
13:07:10	15.05	11.57	19.68	7.8
13:07:20	11.50	13.33	19.73	9.8
13:07:30	8.81	11.13	19.26	8.7
13:07:40	8.57	8.79	16.18	8.1
13:07:50	8.56	7.47	12.51	9.4
13:08:00	8.60	7.18	10.93	10.3
13:08:10	8.55	6.59	10.56	13.1
13:08:20	8.54	7.03	10.48	28.9
13:08:30	8.66	6.88	10.46	300.4
13:08:40	12.67	10.84	10.45	299.6
13:08:50	12.63	25.34	10.42	298.1
13:09:00	2.45	23.73	8.55	297.7
13:09:10	0.13	12.30	4.87	299.7
13:09:20	0.00	5.86	2.51	287.6
13:09:30	0.00	4.83	0.79	127.8
13:09:40	-0.03	4.83	0.22	25.9
13:09:50	0.89	4.83	0.12	29.0

Cal-2

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-16-2015

m1016027.prn

TIME 13:11:03

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
13:13:00	20.35	229.30	0.49	60.3
13:14:00	20.49	195.49	0.54	79.0
13:15:00	20.53	404.35	0.51	94.8
13:16:00	20.57	638.33	0.50	107.7
13:17:00	20.59	829.50	0.49	115.1
13:18:00	20.63	1014.58	0.49	121.6
13:19:00	20.66	1159.31	0.48	128.4
13:20:00	20.69	1282.82	0.46	133.4
13:21:00	20.72	1426.20	0.44	137.2
13:22:00	20.75	1543.61	0.44	142.4
13:23:00	20.76	1643.76	0.45	145.3
13:24:00	20.78	1724.74	0.45	147.0
13:25:00	20.78	1821.54	0.45	148.9
13:26:00	20.80	1882.13	0.43	150.5
13:27:00	20.78	1970.46	0.43	154.7
13:28:00	20.77	2027.32	0.44	157.7
13:29:00	20.71	2097.00	0.47	163.9
13:30:00	20.68	2153.52	0.49	167.8
13:31:00	20.62	2211.60	0.53	168.5
13:32:00	20.57	2180.52	0.56	165.8
13:33:00	20.49	2102.32	0.63	168.6
13:34:00	20.50	2124.10	0.66	175.7
13:35:00	20.48	2187.19	0.67	181.3
13:36:00	20.48	2233.28	0.67	187.7
13:37:00	20.49	2275.91	0.66	189.2
13:38:00	20.47	2287.80	0.66	190.0
13:39:00	20.47	2328.89	0.65	190.5
13:40:00	20.39	2254.50	0.70	183.0
13:41:00	20.36	2157.99	0.77	186.6
13:42:00	20.37	2162.68	0.78	196.1
13:43:00	20.41	2207.04	0.77	200.7
13:44:00	20.42	2233.79	0.74	205.2
13:45:00	20.42	2285.60	0.74	205.8
13:46:00	20.37	2235.45	0.76	201.2
13:47:00	20.37	2193.34	0.79	203.6
13:48:00	20.38	2251.03	0.78	207.2
13:49:00	20.41	2284.33	0.76	206.9
13:50:00	20.41	2316.22	0.75	210.2
13:51:00	20.43	2355.38	0.74	209.8
13:52:00	20.41	2373.17	0.74	207.4
13:53:00	20.43	2378.67	0.74	207.0
13:54:00	20.43	2398.91	0.73	203.3
13:55:00	20.43	2421.90	0.72	203.0
13:56:00	20.30	2415.36	0.72	163.2
13:57:00	20.32	1202.59	0.71	131.1
13:58:00	18.79	1862.51	1.17	157.9
13:59:00	18.64	1698.59	1.55	142.0
14:00:00	18.50	1490.24	1.64	127.0
14:01:00	19.48	1016.48	1.56	53.0
14:02:00	20.81	246.03	0.44	36.1
14:03:00	20.98	151.93	0.25	29.4
14:04:00	21.02	120.98	0.21	24.5
14:05:00	21.04	104.99	0.17	25.4

14:06:00	21.05	115.95	0.19	23.5
14:07:00	20.99	119.51	0.17	39.6
14:08:00	20.42	208.82	0.45	51.9
14:09:00	20.58	184.43	0.45	71.8
14:10:00	20.63	397.05	0.45	89.2
14:11:00	20.65	613.51	0.45	103.6
14:12:00	20.70	814.19	0.44	113.4
14:13:00	20.71	996.61	0.41	119.4
14:14:00	20.72	1138.12	0.43	125.7
14:15:00	20.73	1263.12	0.43	130.9
14:16:00	20.78	1397.59	0.42	133.6
14:17:00	20.81	1490.43	0.43	136.2
14:18:00	20.88	1597.61	0.42	140.5
14:19:00	20.92	1675.10	0.40	143.7
14:20:00	20.97	1746.29	0.41	148.1
14:21:00	20.99	1826.76	0.41	153.8
14:22:00	21.01	1916.78	0.42	156.6
14:23:00	21.02	1966.14	0.41	158.4
14:24:00	21.03	2013.90	0.40	156.4
14:25:00	20.92	1916.83	0.46	152.5
14:26:00	20.87	1855.57	0.52	158.7
14:27:00	20.82	1935.55	0.53	166.2
14:28:00	20.81	2005.16	0.53	173.0
14:29:00	20.78	2048.91	0.53	175.6
14:30:00	20.71	2106.96	0.52	182.3
14:31:00	20.60	2147.59	0.54	185.5
14:32:00	20.51	2188.80	0.56	186.8
14:33:00	20.43	2217.53	0.58	188.9
14:34:00	20.39	2252.69	0.59	191.1
14:35:00	20.38	2265.12	0.60	191.1
14:36:00	20.35	2309.75	0.60	192.9
14:37:00	20.33	2330.38	0.60	192.7
14:38:00	20.31	2367.61	0.61	197.8
14:39:00	20.33	2399.47	0.64	198.8
14:40:00	20.35	2406.60	0.65	197.2
14:41:00	20.35	2343.46	0.66	193.7
14:42:00	20.37	2289.75	0.68	196.4
14:43:00	20.42	2319.93	0.68	200.9
14:44:00	20.43	2353.18	0.68	205.5
14:45:00	20.48	2406.55	0.69	208.4
14:46:00	20.52	2419.19	0.69	207.9
14:47:00	20.57	2427.06	0.67	207.2
14:48:00	20.56	2448.64	0.67	206.0
14:49:00	20.54	2446.54	0.69	205.4
14:50:00	20.49	2420.02	0.69	201.0
14:51:00	20.36	2309.48	0.75	160.0
14:52:00	20.36	1260.26	0.70	146.4
14:53:00	18.93	1865.41	1.24	157.5
14:54:00	18.70	1656.16	1.53	142.0
14:55:00	18.68	1446.15	1.58	130.8
14:56:00	19.11	1127.28	1.54	79.1
14:57:00	20.21	518.17	0.81	58.9
14:58:00	20.52	357.67	0.55	46.2
14:59:00	20.71	245.56	0.38	36.0
15:00:00	20.74	198.44	0.28	35.9
15:01:00	20.70	218.24	0.31	33.7
15:02:00	20.59	206.08	0.30	49.5
15:03:00	20.31	257.08	0.52	64.8
15:04:00	20.52	225.52	0.40	88.8
15:05:00	20.54	435.48	0.40	105.7

15:06:00	20.55	646.34	0.38	120.1
15:07:00	20.57	820.88	0.41	125.6
15:08:00	20.58	987.38	0.41	130.5

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-16-2015

m1016028.prn

TIME 15:08:38

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
15:09:04	1.30	435.79	0.39	77.7
15:09:14	0.09	102.69	0.33	77.4
15:09:24	0.02	18.31	0.11	74.8
15:09:34	0.00	6.45	-0.01	20.2
15:09:44	0.01	4.83	-0.01	8.4
15:09:54	0.42	26.07	-0.04	7.5
15:10:04	0.21	354.20	-0.02	3.3
15:10:14	0.01	982.62	-0.02	5.6
15:10:24	-0.01	1311.47	-0.02	6.9
15:10:34	-0.02	1385.01	-0.04	3.7
15:10:44	-0.03	1393.51	0.00	2.7
15:10:54	-0.01	1394.68	-0.04	11.3
15:11:04	-0.01	1395.85	-0.06	6.7
15:11:14	0.26	1396.29	-0.06	7.6
15:11:24	5.91	1303.56	-0.05	8.1
15:11:34	13.83	791.75	-0.01	8.1
15:11:44	15.10	254.74	2.68	7.7
15:11:54	15.14	50.10	11.60	5.0
15:12:04	15.13	13.77	17.80	2.8
15:12:14	15.15	9.81	19.28	29.1
15:12:24	15.16	8.79	19.48	198.7
15:12:34	15.10	8.79	19.55	296.9
15:12:44	14.70	40.43	19.60	293.4
15:12:54	6.19	122.02	19.58	295.3
15:13:04	0.53	85.11	17.75	298.1
15:13:14	0.02	30.91	10.16	296.9
15:13:24	0.00	7.91	4.41	296.0
15:13:34	-0.02	2.49	1.17	196.9

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

TIME 10:51:50

m1015075.prn

HR:MM:SS	O2 %	CO2 %	THC ppm
10:53:00	18.69	-0.13	-12.1
10:54:00	14.27	-0.13	9.7
10:55:00	15.05	-0.13	3.4
10:56:00	18.31	-0.11	3.2
10:57:00	18.53	-0.10	2.5
10:58:00	19.07	-0.10	2.4
10:59:00	19.15	-0.09	2.3
11:00:00	19.15	-0.09	2.2
11:01:00	19.17	-0.09	2.2
11:02:00	19.20	-0.09	2.3
11:03:00	19.20	-0.06	2.5
11:04:00	19.25	-0.06	2.6
11:05:00	19.27	-0.06	1.9
11:06:00	10.88	-0.08	-0.5
11:07:00	-0.20	-0.07	-0.6
11:08:00	-0.23	-0.10	-0.4
11:09:00	-0.24	-0.09	0.6
11:10:00	-0.24	-0.08	0.4
11:11:00	-0.24	-0.08	0.6
11:12:00	-0.22	-0.08	0.5
11:13:00	-0.22	-0.08	0.7
11:14:00	4.68	-0.08	1.5
11:15:00	13.82	5.76	1.6
11:16:00	14.96	19.55	1.5
11:17:00	8.96	14.52	1.2

O₂ 8.435 15.02

CO₂ 10.75 19.85

CO 610.5

296.4

Acetaldehyde

971.5

9,490

Ethylene 105.0

Propane 499

298.7

842

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

m1015076.prn

TIME 11:17:08

HR:MM:SS	O2 %	CO2 %	THC ppm
11:18:10	-0.21	1.83	43.9
11:18:20	-0.26	0.41	44.0
11:18:30	-0.19	0.09	43.5
11:18:40	-0.16	0.06	33.0
11:18:50	-0.26	0.05	53.0
11:19:00	0.78	0.04	52.8
11:19:10	3.83	-0.02	84.0
11:19:20	0.57	0.01	86.7
11:19:30	-0.21	-0.00	87.1
11:19:40	-0.19	0.00	85.5
11:19:50	-0.15	-0.02	85.5
11:20:00	-0.22	-0.04	71.3
11:20:10	-0.25	-0.02	52.8
11:20:20	0.30	-0.04	52.5
11:20:30	2.17	-0.00	51.8
11:20:40	0.41	-0.02	51.8
11:20:50	-0.16	-0.00	51.7
11:21:00	-0.21	-0.01	52.1
11:21:10	-0.19	-0.02	51.7
11:21:20	-0.22	-0.02	40.3
11:21:30	-0.19	-0.04	41.2
11:21:40	-0.03	-0.02	38.1
11:21:50	3.32	-0.04	37.2
11:22:00	1.38	-0.03	35.2
11:22:10	-0.14	-0.02	35.4
11:22:20	-0.17	-0.05	35.6
11:22:30	-0.21	-0.04	35.2
11:22:40	-0.19	-0.03	35.7
11:22:50	-0.20	-0.02	35.3
11:23:00	-0.21	-0.05	35.6
11:23:10	-0.18	0.00	35.9
11:23:20	-0.21	-0.04	35.8
11:23:30	-0.20	-0.05	14.5
11:23:40	-0.22	-0.03	9.4
11:23:50	1.87	-0.04	9.4
11:24:00	14.32	-0.07	9.2
11:24:10	19.97	-0.05	13.9
11:24:20	20.80	-0.04	10.0
11:24:30	20.94	0.01	4.7
11:24:40	15.11	-0.01	4.6
11:24:50	2.60	-0.00	4.2
11:25:00	0.01	-0.04	4.2
11:25:10	-0.19	-0.01	1.9
11:25:20	-0.21	-0.06	1.1
11:25:30	-0.13	-0.02	28.9
11:25:40	-0.19	-0.04	50.6
11:25:50	1.72	-0.08	43.9
11:26:00	1.70	-0.05	7.5
11:26:10	-0.06	-0.02	8.0
11:26:20	5.02	-0.05	7.5
11:26:30	17.47	-0.05	9.2
11:26:40	20.49	-0.05	9.0
11:26:50	20.60	-0.01	9.4

11:27:00	19.89	-0.01	9.6

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

m1015077.prn

TIME 13:35:00

HR:MM:SS	O2 %	CO2 %	THC ppm
13:36:10	-0.04	0.01	-0.6
13:36:20	-0.04	0.00	0.0
13:36:30	-0.05	0.01	-0.5
13:36:40	-0.06	0.02	-0.7
13:36:50	-0.06	-0.02	0.8
13:37:00	-0.01	-0.00	0.9
13:37:10	3.10	0.03	1.3
13:37:20	11.84	0.04	1.3
13:37:30	14.36	1.37	1.2
13:37:40	14.49	9.77	1.3
13:37:50	14.67	16.97	1.1
13:38:00	14.98	19.28	0.9
13:38:10	14.96	19.60	0.8
13:38:20	15.02	19.65	0.7
13:38:30	14.97	19.74	0.6
13:38:40	15.06	19.75	0.4
13:38:50	15.03	19.72	0.8
13:39:00	15.02	19.75	81.3
13:39:10	15.11	19.79	88.4
13:39:20	13.96	19.78	85.4
13:39:30	4.43	19.73	85.7
13:39:40	0.26	16.39	85.5
13:39:50	-0.01	8.57	85.9
13:40:00	-0.06	3.35	85.4
13:40:10	-0.07	0.83	77.1
13:40:20	-0.04	0.24	51.1
13:40:30	0.03	0.16	50.6
13:40:40	0.53	0.13	51.7
13:40:50	0.11	0.13	51.3
13:41:00	-0.07	0.09	51.5
13:41:10	-0.07	0.08	51.2
13:41:20	-0.07	0.08	39.3
13:41:30	-0.07	0.07	36.2
13:41:40	0.13	0.07	36.1
13:41:50	0.04	0.04	36.0
13:42:00	-0.07	0.04	35.5
13:42:10	-0.07	0.07	16.9
13:42:20	-0.07	0.09	5.7
13:42:30	0.87	0.03	8.0
13:42:40	11.87	0.03	0.3
13:42:50	15.30	0.07	0.6
13:43:00	3.47	0.03	0.2
13:43:10	0.14	0.05	-0.2
13:43:20	-0.06	0.05	0.5
13:43:30	-0.07	0.02	0.3
13:43:40	-0.06	0.04	-0.2
13:43:50	-0.08	0.01	0.2
13:44:00	-0.09	0.01	0.5
13:44:10	-0.07	0.03	0.3

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

m1015078.prn

TIME 13:44:28

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
13:45:10	-0.08	604.25	0.03	3.5
13:45:20	-0.08	604.76	0.01	1.0
13:45:30	0.20	604.25	-0.01	0.4
13:45:40	1.19	561.99	-0.02	0.2
13:45:50	0.16	433.01	-0.01	-0.0
13:46:00	-0.06	328.64	0.01	0.1
13:46:10	-0.09	298.75	0.02	-0.1
13:46:20	-0.08	294.95	0.01	-0.1
13:46:30	-0.09	294.95	-0.01	-0.2
13:46:40	-0.10	294.87	-0.01	-0.2
13:46:50	-0.07	294.73	0.02	0.0
13:47:00	-0.09	294.58	0.03	0.4
13:47:10	-0.09	294.51	0.01	0.6
13:47:20	-0.09	294.29	0.02	0.7
13:47:30	-0.09	294.36	0.03	0.7
13:47:40	-0.09	294.43	0.00	0.7
13:47:50	-0.09	294.80	-0.02	0.5
13:48:00	-0.09	294.58	-0.01	0.4
13:48:10	-0.09	293.70	0.04	0.0
13:48:20	-0.09	294.29	0.02	-0.1
13:48:30	-0.09	294.43	-0.00	0.4
13:48:40	-0.09	293.85	0.04	28.7
13:48:50	-0.09	294.07	-0.00	72.2
13:49:00	0.32	292.75	-0.00	72.4
13:49:10	0.90	250.12	0.04	72.0
13:49:20	0.05	126.86	-0.00	72.0
13:49:30	-0.08	33.03	0.01	72.5
13:49:40	-0.08	5.20	0.00	72.4
13:49:50	-0.10	1.68	-0.01	71.9
13:50:00	-0.08	1.03	-0.02	71.9
13:50:10	-0.07	0.88	-0.01	71.4
13:50:20	-0.10	0.81	0.00	71.5
13:50:30	-0.10	0.88	-0.02	42.4
13:50:40	-0.07	0.22	0.02	3.4
13:50:50	0.90	0.44	-0.04	0.1
13:51:00	2.68	0.73	-0.01	0.5
13:51:10	4.67	1.17	0.02	0.7
13:51:20	7.94	1.39	0.04	0.5
13:51:30	8.34	1.46	2.61	0.2
13:51:40	8.39	1.68	7.89	0.1
13:51:50	8.36	1.68	9.99	0.2
13:52:00	8.40	1.46	10.35	0.6
13:52:10	8.39	1.39	10.43	1.7
13:52:20	8.40	1.46	10.45	4.0
13:52:30	8.54	1.03	10.48	4.3
13:52:40	13.44	1.10	10.45	4.5

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

m1015079.prn

TIME 13:52:56

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
13:54:00	20.95	-4.38	0.73	3.1
13:55:00	20.99	-4.29	0.08	3.4
13:56:00	21.02	-4.61	0.05	3.6
13:57:00	21.00	-1.42	0.05	3.5
13:58:00	21.03	0.79	0.04	3.4
13:59:00	21.02	0.47	0.04	3.5
14:00:00	21.00	0.74	0.05	3.3
14:01:00	21.00	0.96	0.05	3.5
14:02:00	21.00	0.90	0.04	3.4
14:03:00	21.00	0.76	0.04	3.4
14:04:00	20.99	0.74	0.04	3.5
14:05:00	21.00	0.31	0.04	3.5
14:06:00	20.97	0.65	0.05	3.5
14:07:00	20.99	0.55	0.05	3.7
14:08:00	21.01	0.69	0.05	3.7
14:09:00	21.00	0.62	0.04	3.5
14:10:00	21.01	0.76	0.04	3.5
14:11:00	21.00	0.42	0.03	3.4
14:12:00	20.97	0.58	0.03	3.3
14:13:00	20.97	0.83	0.04	3.5
14:14:00	20.98	0.79	0.04	3.6
14:15:00	20.98	0.60	0.04	3.3
14:16:00	20.98	0.54	0.04	3.3
14:17:00	20.99	0.30	0.04	3.1
14:18:00	20.96	0.77	0.04	2.9
14:19:00	20.97	0.81	0.05	2.9
14:20:00	20.97	0.55	0.05	2.9
14:21:00	20.99	0.64	0.04	2.8
14:22:00	20.97	0.62	0.03	2.7
14:23:00	20.97	0.48	0.03	2.7
14:24:00	20.95	0.35	0.03	3.1
14:25:00	20.96	0.66	0.04	2.9
14:26:00	20.96	0.85	0.05	3.0
14:27:00	20.98	0.59	0.04	2.8
14:28:00	20.97	0.07	0.02	2.4
14:29:00	20.93	0.26	0.03	7.1
14:30:00	20.31	43.74	0.26	22.5
14:31:00	20.28	132.70	0.42	39.7
14:32:00	20.32	224.71	0.42	58.0
14:33:00	20.35	380.34	0.41	81.1

Run

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

m1015080.prn

TIME 14:34:10

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
14:36:00	20.37	944.49	0.41	137.7
14:37:00	20.35	1133.40	0.42	142.6
14:38:00	20.36	1295.68	0.42	157.4
14:39:00	20.35	1483.53	0.42	165.4
14:40:00	20.31	1655.08	0.42	172.9
14:41:00	20.27	1797.44	0.45	179.2
14:42:00	20.23	1979.67	0.47	186.1
14:43:00	20.18	2104.62	0.50	191.6
14:44:00	20.11	2232.33	0.53	197.8
14:45:00	19.98	2342.66	0.60	203.3
14:46:00	19.92	2482.99	0.63	207.2
14:47:00	19.89	2573.78	0.66	212.6
14:48:00	19.85	2658.38	0.67	217.7
14:49:00	19.78	2720.95	0.71	220.3
14:50:00	19.72	2782.70	0.73	224.4
14:51:00	19.62	2857.67	0.77	229.0
14:52:00	19.61	2906.57	0.82	231.8
14:53:00	19.59	2955.03	0.82	233.5
14:54:00	19.57	2994.58	0.83	235.5
14:55:00	19.52	3035.48	0.85	239.1
14:56:00	19.50	3048.10	0.88	239.9
14:57:00	19.41	3095.32	0.90	245.5
14:58:00	19.42	3111.97	0.93	246.4
14:59:00	19.41	3132.30	0.91	246.4
15:00:00	19.41	3148.34	0.92	250.2
15:01:00	19.42	3164.29	0.92	251.2
15:02:00	19.37	3173.44	0.93	252.8
15:03:00	19.33	3199.39	0.96	258.5
15:04:00	19.33	3216.73	0.97	258.3
15:05:00	19.34	3222.47	0.96	259.1
15:06:00	19.33	3238.38	0.97	262.9
15:07:00	19.35	3232.38	0.94	263.6
15:08:00	19.31	3248.03	0.96	269.6
15:09:00	19.30	3251.69	0.99	273.7
15:10:00	19.33	3259.16	1.01	273.8
15:11:00	19.37	3251.10	1.00	274.8
15:12:00	19.41	3254.77	0.98	278.4
15:13:00	19.44	3247.37	0.97	280.0
15:14:00	19.44	3250.20	0.98	283.6
15:15:00	19.43	3256.82	1.00	288.6
15:16:00	19.46	3255.60	1.01	288.7
15:17:00	19.51	3256.74	0.99	290.1
15:18:00	19.53	3255.35	1.00	289.6
15:19:00	19.56	3249.71	0.96	292.4
15:20:00	19.55	3235.84	0.98	293.1
15:21:00	19.53	3238.36	1.01	299.4
15:22:00	19.52	3226.81	1.01	301.4
15:23:00	19.53	3231.18	1.01	302.6
15:24:00	19.53	3223.42	0.99	305.9
15:25:00	19.54	3226.69	0.99	307.6
15:26:00	19.53	3217.83	0.97	310.9
15:27:00	19.44	3212.72	1.00	311.7
15:28:00	19.44	3200.88	1.01	308.8

Run 1

15:29:00	19.42	3107.16	1.01	295.2
15:30:00	19.44	2835.19	1.00	267.6
15:31:00	19.50	2422.93	0.94	239.6
15:32:00	19.57	2107.23	0.89	205.5
15:33:00	20.16	1248.03	0.75	47.2
15:34:00	20.54	314.07	0.20	133.5
15:35:00	19.49	1571.76	0.66	218.4
15:36:00	19.49	1676.74	0.87	244.7
15:37:00	19.51	1755.69	0.88	258.9
15:38:00	19.51	1886.77	0.88	271.2
15:39:00	19.48	2012.58	0.89	279.0
15:40:00	19.47	2135.89	0.92	286.0
15:41:00	19.46	2231.82	0.93	290.4
15:42:00	19.48	2330.57	0.91	293.3
15:43:00	19.47	2444.44	0.91	296.6
15:44:00	19.48	2512.55	0.91	301.4
15:45:00	19.45	2607.50	0.92	310.7
15:46:00	19.45	2651.42	0.93	312.7
15:47:00	19.44	2713.58	0.94	313.6
15:48:00	19.48	2744.02	0.94	315.0
15:49:00	19.48	2784.14	0.93	319.6
15:50:00	19.49	2795.27	0.92	324.2
15:51:00	19.46	2840.53	0.93	324.9
15:52:00	19.44	2857.23	0.94	325.5
15:53:00	19.44	2887.16	0.95	327.4
15:54:00	19.49	2910.80	0.94	330.5
15:55:00	19.51	2912.72	0.93	333.0
15:56:00	19.52	2922.86	0.92	337.0
15:57:00	19.50	2931.13	0.93	337.8
15:58:00	19.33	2933.53	0.95	211.2
15:59:00	19.74	1192.90	0.71	238.0
16:00:00	18.23	2285.72	1.47	250.7
16:01:00	18.09	2019.80	1.67	223.3
16:02:00	17.93	1740.75	1.75	194.4
16:03:00	19.16	1084.16	1.62	50.8
16:04:00	20.56	186.43	0.38	20.0
16:05:00	20.71	101.45	0.19	13.1
16:06:00	20.75	97.47	0.16	12.6
16:07:00	20.73	107.43	0.17	15.0
16:08:00	20.63	151.40	0.22	18.2
16:09:00	20.64	157.82	0.24	16.9
16:10:00	20.59	160.14	0.25	18.3
16:11:00	20.70	134.89	0.25	12.9
16:12:00	20.73	122.88	0.19	12.4
16:13:00	20.77	111.92	0.18	9.8
16:14:00	20.80	106.74	0.17	9.0
16:15:00	20.85	87.82	0.15	7.6
16:16:00	20.85	90.14	0.16	7.9
16:17:00	20.84	106.47	0.17	10.6
16:18:00	20.88	103.13	0.18	9.5
16:19:00	20.89	103.18	0.17	7.5
16:20:00	20.92	90.78	0.15	6.9
16:21:00	20.88	100.42	0.14	10.3
16:22:00	20.86	108.89	0.19	9.2
16:23:00	20.91	97.20	0.17	5.7
16:24:00	20.97	78.86	0.14	7.3
16:25:00	20.95	92.58	0.15	6.2
16:26:00	21.00	81.57	0.14	5.6
16:27:00	21.02	69.90	0.12	5.1
16:28:00	21.01	78.06	0.14	4.4

16:29:00	20.83	101.91	0.14	33.4
16:30:00	20.60	183.65	0.42	83.5
16:31:00	20.69	283.43	0.36	121.6
16:32:00	20.70	526.30	0.38	145.4
16:33:00	20.70	771.32	0.38	165.5
16:34:00	20.70	986.16	0.42	182.1
16:35:00	20.71	1185.65	0.43	197.7
16:36:00	20.72	1374.79	0.44	211.4
16:37:00	20.74	1549.27	0.44	220.9
16:38:00	20.75	1683.94	0.43	231.5
16:39:00	20.76	1805.40	0.44	238.3
16:40:00	20.75	1952.54	0.45	244.7
16:41:00	20.78	2035.04	0.48	253.7
16:42:00	20.80	2137.07	0.47	260.1
16:43:00	20.85	2186.67	0.47	263.8
16:44:00	20.83	2259.67	0.48	266.1
16:45:00	20.81	2317.95	0.49	274.8
16:46:00	20.74	2418.19	0.53	278.9
16:47:00	20.70	2473.98	0.56	281.6
16:48:00	20.68	2547.95	0.58	288.2
16:49:00	20.69	2580.77	0.59	289.7

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

TIME 16:50:24

m1015081.prn

cal-2

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
16:50:57	18.71	2364.40	0.61	-5.5
16:51:07	16.01	1265.48	0.66	0.9
16:51:17	15.47	353.47	2.37	1.3
16:51:27	15.40	64.31	10.98	7.5
16:51:37	15.42	20.65	17.80	5.2
16:51:47	15.34	16.26	19.43	2.4
16:51:57	14.98	29.44	19.61	0.5
16:52:07	10.95	58.74	19.56	2.7
16:52:17	8.81	41.75	19.09	2.0
16:52:27	8.69	18.90	15.64	2.0
16:52:37	8.65	10.84	12.22	2.4
16:52:47	8.67	9.38	10.81	142.8
16:52:57	8.65	8.94	10.50	223.0
16:53:07	8.91	10.69	10.50	329.5
16:53:17	13.01	305.13	10.42	320.9
16:53:27	7.19	846.09	10.40	320.0
16:53:37	0.66	549.90	7.92	318.0
16:53:47	0.04	146.78	4.06	320.7
16:53:57	0.00	26.66	1.52	320.0
16:54:07	0.00	8.35	0.38	308.0
16:54:17	-0.05	6.45	0.13	260.5
16:54:27	-0.06	6.15	0.10	274.4
16:54:37	2.02	32.23	0.07	309.9
16:54:47	13.45	593.26	0.08	526.7
16:54:57	18.80	1752.10	0.08	538.9
16:55:07	11.64	2169.73	0.34	538.9
16:55:17	1.73	1223.00	0.64	540.5
16:55:27	0.11	328.42	0.56	540.4
16:55:37	0.00	52.00	0.25	539.9
16:55:47	-0.05	11.57	0.07	523.8
16:55:57	-0.02	7.03	0.03	364.9
16:56:07	0.00	6.74	0.01	81.7
16:56:17	1.21	27.39	0.01	77.4
16:56:27	3.31	242.14	0.01	73.2
16:56:37	0.55	273.19	0.04	75.2
16:56:47	-0.00	94.19	0.12	74.2
16:56:57	-0.06	17.72	0.07	73.5
16:57:07	-0.03	6.30	0.02	61.0
16:57:17	-0.01	5.27	0.02	0.1
16:57:27	-0.05	5.27	0.03	3.0
16:57:37	0.01	51.71	0.01	-0.2
16:57:47	-0.04	285.94	0.02	1.3
16:57:57	-0.04	521.92	0.03	0.6
16:58:07	-0.04	596.78	0.02	1.5
16:58:17	-0.04	607.18	0.01	0.5
16:58:27	-0.04	608.79	0.02	1.9
16:58:37	-0.05	609.52	0.01	171.3
16:58:47	-0.04	609.23	0.00	277.3
16:58:57	1.24	618.90	0.03	289.8

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

TIME 16:59:28

m1015082.prn

Run 2

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
17:01:00	20.41	2851.57	0.77	302.6
17:02:00	20.41	2865.24	0.78	306.3
17:03:00	20.38	2887.43	0.80	307.5
17:04:00	20.35	2903.98	0.80	310.5
17:05:00	20.34	2905.64	0.82	316.5
17:06:00	20.33	2923.20	0.82	319.7
17:07:00	20.36	2918.98	0.81	319.4
17:08:00	20.35	2938.36	0.80	317.5
17:09:00	20.32	2938.26	0.81	320.2
17:10:00	20.29	2954.25	0.84	318.0
17:11:00	20.27	2939.41	0.85	318.7
17:12:00	20.23	2956.67	0.85	318.3
17:13:00	20.23	2952.28	0.83	316.6
17:14:00	20.17	2968.17	0.82	314.2
17:15:00	20.09	2976.91	0.84	314.7
17:16:00	20.03	2970.00	0.85	312.9
17:17:00	20.02	2968.93	0.86	312.8
17:18:00	20.01	2963.58	0.86	311.0
17:19:00	20.05	2966.36	0.84	307.6
17:20:00	20.04	2952.15	0.83	306.8
17:21:00	20.05	2975.25	0.84	306.5
17:22:00	20.05	2961.21	0.84	305.5
17:23:00	20.06	2970.68	0.86	305.1
17:24:00	20.08	2955.01	0.87	303.5
17:25:00	20.15	2948.83	0.85	302.0
17:26:00	20.17	2933.57	0.82	300.5
17:27:00	20.17	2946.34	0.84	299.5
17:28:00	20.18	2939.56	0.84	294.2
17:29:00	20.16	2839.31	0.85	279.6
17:30:00	20.21	2558.21	0.85	253.8
17:31:00	20.31	2191.75	0.79	225.5
17:32:00	20.24	1900.30	0.73	187.9
17:33:00	20.84	1234.40	0.64	70.8
17:34:00	21.22	366.07	0.20	119.0
17:35:00	20.41	1407.89	0.54	187.5
17:36:00	20.49	1525.30	0.73	210.1
17:37:00	20.53	1611.97	0.74	221.7
17:38:00	20.54	1721.61	0.73	229.6
17:39:00	20.54	1833.11	0.75	233.6
17:40:00	20.54	1957.31	0.76	236.8
17:41:00	20.50	2052.79	0.79	241.0
17:42:00	20.51	2139.58	0.79	246.0
17:43:00	20.55	2214.60	0.78	247.8
17:44:00	20.55	2268.19	0.77	248.8
17:45:00	20.52	2347.93	0.78	249.9
17:46:00	20.51	2410.77	0.80	250.1
17:47:00	20.51	2494.90	0.82	251.8
17:48:00	20.53	2563.65	0.82	253.5
17:49:00	20.54	2631.69	0.81	246.2
17:50:00	20.57	2480.38	0.79	236.6
17:51:00	20.56	2392.41	0.77	235.1
17:52:00	20.54	2518.63	0.77	236.0
17:53:00	20.48	2641.48	0.78	238.3

17:54:00	20.45	2752.03	0.79	239.2
17:55:00	20.43	2845.44	0.79	239.9
17:56:00	20.42	2927.47	0.76	240.7
17:57:00	20.36	3002.20	0.76	242.5
17:58:00	20.17	3057.26	0.78	176.1
17:59:00	20.40	1354.86	0.64	171.1
18:00:00	18.92	2410.67	1.28	190.1
18:01:00	18.82	2136.06	1.50	173.0
18:02:00	18.66	1849.93	1.58	156.4
18:03:00	19.65	1241.61	1.55	67.5
18:04:00	21.08	268.41	0.42	37.2
18:05:00	21.30	134.36	0.22	26.2
18:06:00	21.18	111.21	0.19	24.2
18:07:00	19.53	126.15	0.19	20.6
18:08:00	20.94	100.93	0.14	19.7
18:09:00	21.24	115.85	0.16	21.0
18:10:00	21.28	125.03	0.18	18.5
18:11:00	21.28	111.06	0.17	19.9
18:12:00	21.15	150.93	0.21	18.7
18:13:00	21.20	118.95	0.17	18.6
18:14:00	21.21	130.60	0.18	17.5
18:15:00	21.22	113.63	0.16	18.5
18:16:00	21.20	135.33	0.18	17.2
18:17:00	21.22	123.42	0.17	18.0
18:18:00	21.25	133.87	0.20	18.4
18:19:00	21.28	139.82	0.20	19.0
18:20:00	21.37	133.35	0.19	18.5
18:21:00	21.31	151.81	0.19	20.5
18:22:00	21.32	156.82	0.21	19.5
18:23:00	21.32	135.48	0.20	17.3
18:24:00	21.31	126.86	0.19	17.7
18:25:00	21.22	142.09	0.19	21.7
18:26:00	21.13	183.70	0.23	21.4
18:27:00	21.10	167.83	0.22	20.9
18:28:00	21.15	154.18	0.21	19.4
18:29:00	20.97	176.49	0.21	29.5
18:30:00	20.83	181.57	0.41	52.6
18:31:00	20.97	206.60	0.35	91.8
18:32:00	21.04	477.79	0.36	115.8
18:33:00	21.07	755.50	0.36	130.3
18:34:00	21.10	999.47	0.39	145.4
18:35:00	21.09	1209.67	0.41	156.3
18:36:00	21.10	1421.37	0.41	167.3
18:37:00	21.10	1596.15	0.42	174.6
18:38:00	21.11	1744.05	0.41	182.9
18:39:00	21.06	1898.42	0.42	191.9
18:40:00	21.04	2047.61	0.43	196.7
18:41:00	20.99	2128.86	0.45	203.7
18:42:00	20.95	2231.91	0.45	210.3
18:43:00	20.93	2285.70	0.46	215.9
18:44:00	20.94	2365.61	0.45	221.9
18:45:00	20.94	2417.53	0.45	227.0
18:46:00	20.97	2487.51	0.46	230.7
18:47:00	20.99	2528.28	0.47	235.1
18:48:00	21.05	2582.16	0.48	240.5
18:49:00	21.07	2619.39	0.50	244.5
18:50:00	21.08	2644.80	0.50	248.3
18:51:00	21.01	2693.34	0.52	252.2
18:52:00	20.95	2711.38	0.55	256.2
18:53:00	20.87	2751.66	0.59	260.4

18:54:00	20.81	2771.83	0.61	263.5
18:55:00	20.76	2807.84	0.64	267.1
18:56:00	20.74	2813.82	0.64	270.9
18:57:00	20.71	2851.91	0.65	271.1
18:58:00	20.71	2844.98	0.66	271.7
18:59:00	20.70	2860.23	0.68	273.0
19:00:00	20.72	2870.00	0.70	274.6
19:01:00	20.74	2886.82	0.71	274.8
19:02:00	20.74	2910.92	0.71	275.7
19:03:00	20.70	2920.83	0.72	276.2
19:04:00	20.68	2905.38	0.73	267.6
19:05:00	20.62	2936.99	0.74	258.7

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

TIME 19:06:43

m1015083.prn

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
19:06:56	4.54	1682.37	0.76	0.6
19:07:06	0.26	911.87	0.66	0.6
19:07:16	0.03	664.45	0.28	2.1
19:07:26	0.04	625.93	0.09	3.6
19:07:36	-0.03	623.44	0.03	3.8
19:07:46	-0.03	620.95	-0.00	18.1
19:07:56	0.02	620.36	-0.01	76.6
19:08:06	0.01	617.72	-0.00	76.1
19:08:16	0.27	569.82	-0.01	77.6
19:08:26	0.12	326.51	0.00	79.4
19:08:36	0.03	95.65	-0.00	71.3
19:08:46	-0.03	21.97	-0.02	180.2
19:08:56	-0.04	11.13	0.02	556.7
19:09:06	0.40	16.85	0.02	539.6
19:09:16	1.26	94.34	-0.02	531.5
19:09:26	0.16	110.60	0.02	534.0
19:09:36	-0.03	44.24	0.04	530.9
19:09:46	0.00	12.60	0.02	531.2
19:09:56	-0.01	8.79	0.01	530.7
19:10:06	-0.04	8.06	0.01	461.5
19:10:16	-0.05	7.47	0.01	374.1
19:10:26	-0.05	7.32	0.00	263.8
19:10:36	0.11	7.91	0.01	246.1
19:10:46	3.79	110.89	0.02	316.0
19:10:56	12.74	754.39	0.02	318.0
19:11:06	9.06	1193.41	0.09	316.9
19:11:16	1.07	604.98	0.38	315.0
19:11:26	0.03	128.47	0.37	314.5
19:11:36	-0.03	21.68	0.08	312.2
19:11:46	-0.03	8.64	0.03	280.6
19:11:56	-0.03	7.47	0.02	129.8
19:12:06	-0.04	7.32	0.01	6.0
19:12:16	0.74	18.46	0.01	2.6
19:12:26	5.30	84.23	0.01	0.2
19:12:36	8.37	82.03	0.06	3.0
19:12:46	8.64	30.91	2.64	2.2
19:12:56	8.69	10.84	7.93	0.4
19:13:06	8.69	8.50	10.04	0.4
19:13:16	8.66	8.79	10.29	3.0
19:13:26	8.67	8.06	10.38	-0.4
19:13:36	8.68	8.35	10.39	0.5
19:13:46	6.19	8.20	10.38	0.3
19:13:56	1.04	7.03	10.39	0.6
19:14:06	0.02	6.15	8.32	1.2
19:14:16	-0.00	5.57	3.69	-1.5
19:14:26	-0.02	5.42	0.96	2.0
19:14:36	-0.03	5.42	0.20	-0.6
19:14:46	-0.03	5.71	0.07	0.0
19:14:56	-0.01	5.57	0.07	0.9

Cal 2-3

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

m1015084.prn

TIME 19:16:34

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
19:18:00	20.58	2674.74	0.80	288.8
19:19:02	20.58	2520.83	0.81	299.0
19:20:03	20.60	2570.81	0.80	312.4
19:21:03	20.55	2688.11	0.80	319.5
19:22:03	20.52	2736.04	0.79	304.9
19:23:03	20.45	2624.78	0.80	293.0
19:24:03	20.43	2552.06	0.81	301.1
19:25:03	20.41	2554.45	0.82	313.1
19:26:03	20.41	2655.86	0.80	318.3
19:27:03	20.38	2731.06	0.80	305.3
19:28:03	20.36	2663.68	0.80	287.4
19:29:03	20.32	2470.98	0.83	271.2
19:30:03	20.38	2213.97	0.82	248.1
19:31:03	20.47	1918.51	0.78	227.6
19:32:03	20.59	1668.58	0.72	199.3
19:33:03	21.01	1088.55	0.60	103.9
19:34:03	21.19	623.05	0.30	157.4
19:35:03	20.63	1254.79	0.60	191.4
19:36:03	20.68	1278.94	0.71	214.6
19:37:03	20.69	1413.55	0.71	236.1
19:38:03	20.71	1570.59	0.70	249.7
19:39:05	20.64	1660.53	0.71	241.7
19:40:05	20.57	1648.03	0.76	252.4
19:41:05	20.51	1721.42	0.78	269.9
19:42:05	20.49	1906.43	0.78	274.3
19:43:05	20.46	2025.84	0.77	266.2
19:44:05	20.43	2013.41	0.76	256.7
19:45:05	20.38	1932.26	0.77	270.7
19:46:05	20.38	2023.71	0.78	278.9
19:47:05	20.38	2165.39	0.79	283.5
19:48:05	20.42	2264.04	0.79	276.7
19:49:05	20.46	2284.21	0.78	259.9
19:50:05	20.50	2173.71	0.77	253.8
19:51:05	20.51	2148.12	0.77	267.9
19:52:05	20.54	2252.93	0.79	282.1
19:53:05	20.49	2379.86	0.81	288.0
19:54:05	20.47	2466.05	0.80	275.9
19:55:05	20.45	2419.90	0.79	256.9
19:56:05	20.44	2264.70	0.79	260.7
19:57:05	20.41	2292.09	0.80	279.2
19:58:05	20.18	2406.57	0.80	186.7
19:59:05	20.34	1085.72	0.63	227.2
20:00:05	19.00	1973.52	1.42	228.7
20:01:05	18.85	1719.07	1.51	205.7
20:02:05	18.70	1518.10	1.60	180.9
20:03:05	19.89	920.24	1.45	70.0
20:04:05	21.11	187.58	0.37	45.9
20:05:05	21.16	155.74	0.26	40.7
20:06:05	21.18	161.38	0.28	41.0
20:07:05	21.25	155.23	0.28	33.7
20:08:05	21.29	142.68	0.23	35.3
20:09:05	21.26	141.70	0.24	30.4
20:10:05	21.25	135.94	0.23	29.4

20:11:05	21.21	132.45	0.23	27.9
20:12:05	21.17	135.48	0.24	25.7
20:13:05	21.20	112.72	0.20	25.4
20:14:05	21.19	122.10	0.20	27.9
20:15:05	21.16	141.34	0.22	24.9
20:16:05	21.22	117.97	0.20	25.3
20:17:05	21.24	119.58	0.22	25.4
20:18:05	21.23	137.77	0.23	25.7
20:19:05	21.28	135.16	0.23	23.9
20:20:05	21.38	111.21	0.19	23.9
20:21:05	21.35	124.83	0.20	24.5
20:22:05	21.34	131.52	0.20	24.5
20:23:05	21.32	122.10	0.21	24.2
20:24:05	21.28	141.63	0.24	23.5
20:25:05	21.29	125.96	0.21	23.7
20:26:05	21.33	115.19	0.20	20.5
20:27:05	21.27	117.17	0.17	22.4
20:28:05	21.25	117.29	0.19	20.4
20:29:05	21.04	143.54	0.18	43.9
20:30:05	21.00	144.49	0.39	86.8
20:31:05	21.03	302.03	0.33	124.8
20:32:05	21.09	561.99	0.35	147.5
20:33:05	21.10	812.11	0.37	159.9
20:34:05	21.12	1017.41	0.37	157.9
20:35:05	21.12	1155.60	0.39	154.8
20:36:05	21.11	1230.52	0.38	149.4
20:37:05	21.08	1213.70	0.41	158.9
20:38:05	21.08	1309.65	0.41	183.1
20:39:05	21.05	1546.71	0.42	203.0
20:40:05	21.03	1715.02	0.43	205.5
20:41:05	20.99	1846.12	0.43	199.3
20:42:05	20.96	1905.91	0.42	186.3
20:43:05	20.93	1793.90	0.45	197.6
20:44:05	20.98	1872.17	0.46	219.0
20:45:05	21.00	2084.11	0.46	232.9
20:46:05	21.02	2233.96	0.47	232.5
20:47:05	21.05	2317.27	0.46	227.7
20:48:05	21.06	2311.53	0.47	219.9
20:49:05	21.07	2207.08	0.49	229.9
20:50:05	21.09	2251.49	0.49	247.5
20:51:05	21.06	2390.90	0.49	256.7
20:52:05	21.07	2514.36	0.49	253.1
20:53:05	21.03	2580.28	0.49	247.4
20:54:05	21.02	2616.41	0.48	238.7
20:55:05	20.97	2629.96	0.49	245.3
20:56:05	20.93	2689.78	0.49	248.9
20:57:05	20.87	2565.34	0.50	245.4
20:58:05	20.81	2631.77	0.50	244.2
20:59:05	20.77	2716.87	0.52	236.2
21:00:05	20.78	2748.69	0.54	241.4
21:01:05	20.79	2830.20	0.56	248.7
21:02:05	20.83	2936.19	0.56	252.9
21:03:05	20.81	3026.20	0.58	248.1
21:04:05	20.77	2999.86	0.60	235.5
21:05:05	20.73	2837.90	0.64	246.1
21:06:05	20.72	2845.61	0.70	264.3
21:07:05	20.69	2932.79	0.68	270.4
21:08:05	20.70	2978.08	0.67	264.9
21:09:05	20.66	2902.76	0.69	249.1
21:10:05	20.64	2703.52	0.67	252.3

21:11:05	20.58	2691.22	0.71	271.1
21:12:05	20.57	2804.91	0.69	283.9
21:13:05	20.59	2868.58	0.73	277.9
21:14:05	20.63	2792.90	0.71	260.7
21:15:05	20.63	2606.62	0.73	264.8
21:16:05	20.62	2612.48	0.72	278.4
21:17:05	20.58	2737.24	0.75	283.2

"Comprehensive Emission Services, Inc."

"Osceola Foods "

"Osceola, IA"

DATE 10-15-2015

TIME 21:18:33

ml1015085.prn

cel A3

HR:MM:SS	O2 %	CO ppm	CO2 %	THC ppm
21:18:47	1.30	996.97	0.77	81.5
21:18:57	0.08	234.08	0.56	79.2
21:19:07	0.02	43.36	0.19	79.8
21:19:17	-0.01	18.02	0.04	77.9
21:19:27	0.01	14.79	0.02	72.7
21:19:37	-0.02	9.38	0.01	5.1
21:19:47	0.29	16.55	0.00	8.9
21:19:57	0.72	123.49	-0.00	10.2
21:20:07	0.09	379.25	0.00	7.9
21:20:17	0.01	556.49	0.03	9.6
21:20:27	-0.03	607.76	0.01	6.2
21:20:37	-0.04	613.62	0.01	11.7
21:20:47	-0.02	614.94	-0.00	230.4
21:20:57	0.10	616.55	0.01	294.3
21:21:07	2.02	588.13	0.00	292.9
21:21:17	0.94	419.97	-0.01	295.5
21:21:27	0.01	157.76	0.01	293.1
21:21:37	-0.02	38.53	0.01	229.6
21:21:47	-0.00	12.60	-0.00	16.2
21:21:57	0.52	9.67	-0.01	11.1
21:22:07	6.09	8.79	-0.02	-0.8
21:22:17	13.27	9.96	0.00	-8.9
21:22:27	15.22	11.43	1.12	-12.0
21:22:37	15.34	12.30	9.23	-13.7
21:22:47	15.28	12.30	16.80	-12.5
21:22:57	15.34	12.16	19.24	-13.8
21:23:07	15.34	11.87	19.53	-12.1
21:23:17	15.32	11.72	19.55	-13.6
21:23:27	15.32	11.87	19.60	-12.1
21:23:37	15.32	11.87	19.63	-13.5

Appendix H

Gas Protocols

CERTIFICATE OF ANALYSIS

Grade of Product: PRIMARY STANDARD

Airgas Specialty Gases

1075 Cindara Drive

Port Allen, LA 70767

225 388 0900

FAX 225 388 0859

www.airgas.com

Part Number: X03NI99P15A51A5 Reference Number: 83-124333259-1
Cylinder Number: CC10607@ Cylinder Volume: 144.5 CF
Laboratory: ASG - Port Allen - LA Cylinder Pressure: 2015 PSIG
Analysis Date: Sep 27, 2012 Valve Outlet: 350

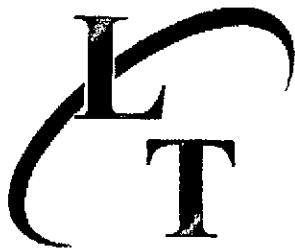
Product directly traceable to NIST ASTM Class 1 weights and/or NIST gas mixture reference materials.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration (Mole %)	Analytical Uncertainty
SULFUR HEXAFLUORIDE	10.00 PPM	9.490 PPM	+/- 1%
ACETALDEHYDE	1000 PPM	971.5 PPM	+/- 1%
NITROGEN	Balance		

Notes:


Approved for Release



LIQUID TECHNOLOGY CORPORATION

"INDUSTRY LEADER IN SPECIALTY GASES"

Certificate of Analysis

- EPA PROTOCOL GAS -

* Extended Certificate *

<u>Customer</u>	<u>Comprehensive Emission Services (Waukeg, IA)</u>
<u>Date</u>	<u>July 06, 2011</u>
<u>Delivery Receipt</u>	<u>DR-37891</u>
<u>Gas Standard</u>	<u>3800 - 4000 ppm Carbon Monoxide/Nitrogen - EPA PROTOCOL</u>
<u>Final Analysis Date</u>	<u>July 06, 2011</u>
<u>Expiration Date</u>	<u>July 06, 2019</u>

<u>Component</u>	<u>Carbon Monoxide</u>
<u>Balance Gas</u>	<u>Nitrogen</u>

Analytical Data:

EPA Protocol, Section No. 2.2, Procedure G-1

DO NOT USE BELOW 100 psig

Replicate Concentrations

Carbon Monoxide: 3873 ppm +/- 10 ppm

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-184904	EB-0015842
Concentration:	2941.378 ppm CO/Nitrogen	4969.502 ppm CO/Nitrogen
Expiration Date:	04/14/13	12/02/12

Certification Instrumentation

Component:	Carbon Monoxide
Make/Model:	Horiba - VIA 510
Serial Number:	UUBKWXYZV
Principal of Measurement:	NDIR
Last Calibration:	July 08, 2011

Cylinder Data

Cylinder Serial Number:	EB-0018696	Cylinder Outlet:	CGA 350
Cylinder Volume:	134 Cubic Feet	Cylinder Pressure:	1900 psig, 70°F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-12/531.

Certified by:

David Scott

PGVP Vendor ID: E12013

* Extended shelf life established August 16, 2013

"UNMATCHED EXCELLENCE"

2048 APEX COURT APOPKA, FLORIDA 32703 - PHONE (407)-292-2990 FAX (407)-292-3313
WWW.LIQUIDTECHCORP.COM
APOPKA, FL • HOUSTON, TX

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E02NI99E15A5196 Reference Number: 83-124357625-12
Cylinder Number: CC108944 Cylinder Volume: 144.4 CF
Laboratory: ASG - Port Allen - LA Cylinder Pressure: 2015 PSIG
PGVP Number: B42013 Valve Outlet: 350
Gas Code: CO Analysis Date: Feb 06, 2013

Expiration Date: Feb 06, 2021

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
CARBON MONOXIDE	1400 PPM	1405 PPM	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM/CM	11060323	CC201090	988.8 PPM CARBON MONOXIDE/NITROGEN	Dec 13, 2016

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet 6700 AHR0801556 CO HCO	FTIR	Jan 17, 2013

Triad Data Available Upon Request

Notes:

Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E03N181E15A3LS0	Reference Number:	54-124513369-2
Cylinder Number:	CC472997	Cylinder Volume:	151.1 CF
Laboratory:	ASG - Chicago - IL	Cylinder Pressure:	2015 PSIG
PGVP Number:	B12015	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Sep 14, 2015

Expiration Date: Sep 14, 2023

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
OXYGEN	8.500 %	8.435 %	G1	+/- 1.0% NIST Traceable	09/14/2015
CARBON DIOXIDE	10.50 %	10.75 %	G1	+/- 0.7% NIST Traceable	09/14/2015
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	06120102	CC195595	9.898 % OXYGEN/NITROGEN	+/- 0.7%	Jul 26, 2018
NTRM	06120402	CC184369	19.66 % CARBON DIOXIDE/NITROGEN	+/- 0.5%	May 01, 2016

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO2-1 HORIBA VIA-510 V1E3H7P5	NDIR	Aug 31, 2015
O2-1 HORIBA MPA-510 3VUYL9NR	Paramagnetic	Sep 01, 2015

Triad Data Available Upon Request



Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E03NI65E15A25V2	Reference Number: 54-124435424-1
Cylinder Number: CC425993	Cylinder Volume: 158.9 CF
Laboratory: ASG - Chicago - IL	Cylinder Pressure: 2015 PSIG
PGVP Number: B12014	Valve Outlet: 590
Gas Code: CO2,O2,BALN	Certification Date: May 23, 2014

Expiration Date: May 23, 2017

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities present in this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig or 7.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol	Total Relative Uncertainty	Assay Dates
OXYGEN	15.00 %	15.02 %	G1	+/- 1.0% NIST Traceable	05/23/2014
CARBON DIOXIDE	20.00 %	19.85 %	G1	+/- 1.2% NIST Traceable	05/23/2014
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	98051016	SG9163074BAL	12.15 % OXYGEN/NITROGEN	+/- 0.7%	Dec 02, 2017
NTRM	06120402	CC184369	18.66 % CARBON DIOXIDE/NITROGEN	+/- 0.5%	May 01, 2016

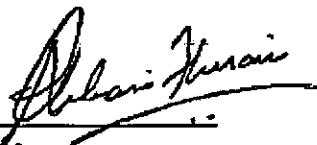
ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO2-1 HORIBA VIA-510 V1E3H7P5	NDIR	May 22, 2014
O2-1 HORIBA MPA-510 3VUYL9NR	Paramagnetic	May 12, 2014

Triad Data Available Upon

Request

Notes:

Approved for Release



**AIR LIQUIDE**Air Liquide America
Specialty Gases LLC

Scott™

COMPLIANCE CLASS
Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol GasAssay Laboratory - PGVP Vendor ID: A22011AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083P.O. No.: D. OSTRANDER 11/15/1
Document # : 44090156-002Customer

COMPREHENSIVE EMISSION SERVICES

3340 ASHWORTH RD.
WAUKEE IA 50263
US**ANALYTICAL INFORMATION** **Gas Type : NONE**This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.**Cylinder Number:** **ALM024076****Certification Date:**

28Nov2011

Exp. Date: 27Nov2014**Cylinder Pressure***:** 2000 PSIG**Batch No:** TRO0047106**COMPONENT**PROPANE
NITROGEN**CERTIFIED CONCENTRATION (Moles)**

842

PPM

BALANCE

ACCURACY**

+/- 2%

TRACEABILITY

NIST and VSL

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedures , September 1997.

REFERENCE STANDARDTYPE/SRM NO.

NTRM 1200 1

EXPIRATION DATE

17Nov2018

CYLINDER NUMBER

K019476

CONCENTRATION

1186. PPM

COMPONENT

PROPANE

INSTRUMENTATIONINSTRUMENT/MODEL/SERIAL#

VARIAN/3400/7506

DATE LAST CALIBRATED

03Nov2011

ANALYTICAL PRINCIPLE

TCD/FID

APPROVED BY:

ROBERT LESNIAK

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E02NI99E15A0681	Reference Number:	54-124256902-1
Cylinder Number:	XC006839B	Cylinder Volume:	144.4 CF
Laboratory:	ASG - Chicago - IL	Cylinder Pressure:	2015 PSIG
PGVP Number:	B12014	Valve Outlet:	350
Gas Code:	PPN,BALN	Certification Date:	Mar 11, 2011

Expiration Date: Mar 11, 2019

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
PROPANE	300.0 PPM	298.8 PPM	G1	+/- 1% NIST Traceable	03/11/2011
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	10060540	CC281408	495.3 PPM PROPANE/AIR	+/- 0.5%	Feb 19, 2016

ANALYTICAL EQUIPMENT

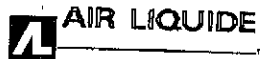
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nexus 470 AEP0000428	FTIR	Feb 25, 2011

Triad Data Available Upon Request



Signature on file

Approved for Release



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A22011

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: D. OSTRANDER 11/15/1
Document #: 44090156-001

Customer
COMPREHENSIVE EMISSION SERVICES

3340 ASHWORTH RD.
WAUKEE IA 50263
US

ANALYTICAL INFORMATION Gas Type : NONE

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: AAL9169

Certification Date: 28Nov2011

Exp. Date: 27Nov2014

Cylinder Pressure***: 1950 PSIG

Batch No: TRO0047113

COMPONENT

PROPANE
NITROGEN

CERTIFIED CONCENTRATION (Moles)

499

PPM

BALANCE

ACCURACY**

+/- 2%

TRACEABILITY

NIST and VSL

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.

EXPIRATION DATE

CYLINDER NUMBER

CONCENTRATION

COMPONENT

NTRM 1200 1

17Nov2016

K019476

1186. PPM

PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#

VARIAN/3400/7506

DATE LAST CALIBRATED

03Nov2011

ANALYTICAL PRINCIPLE

TCD/FID

APPROVED BY:

ROBERT LESNIAK

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E02NI99E15A0928 Reference Number: 54-124436973-1
Cylinder Number: CC191107 Cylinder Volume: 144.3 CF
Laboratory: ASG - Chicago - IL Cylinder Pressure: 2015 PSIG
PGVP Number: B12014 Valve Outlet: 350
Gas Code: CO,BALN Certification Date: Jun 02, 2014

Expiration Date: Jun 02, 2022

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	600.0 PPM	610.5 PPM	G1	+/- 1.0% NIST Traceable	06/02/2014
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	11060327	CC2139	988.8 PPM CARBON MONOXIDE/NITROGEN	+/- 0.4%	Dec 13, 2016

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO-1 HORIBA VIA-510 TKPPF7FG	NDIR	May 14, 2014

Triad Data Available Upon Request

Notes:

**Approved for Release**

CERTIFICATE OF ANALYSIS**Grade of Product: EPA Protocol**

Part Number:	E02NI99E15A0096	Reference Number:	54-124407378-1
Cylinder Number:	CC185515	Cylinder Volume:	144.3 CF
Laboratory:	ASG - Chicago - IL	Cylinder Pressure:	2015 PSIG
PGVP Number:	B12013	Valve Outlet:	350
Gas Code:	CO,BALN	Certification Date:	Dec 02, 2013

Expiration Date: Dec 02, 2021

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	300.0 PPM	296.4 PPM	G1	+/- 1.0% NIST Traceable	12/02/2013
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	11060327	CC2139	988.8 PPM CARBON MONOXIDE/NITROGEN	+/- 0.4%	Dec 13, 2016

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO-1 HORIBA VIA-510 TKPPF7FG	NDIR	Nov 24, 2013

Triad Data Available Upon Request

Signature on file

Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E02NI99E15A0096	Reference Number:	54-124407378-1
Cylinder Number:	CC185515	Cylinder Volume:	144.3 CF
Laboratory:	ASG - Chicago - IL	Cylinder Pressure:	2015 PSIG
PGVP Number:	B12013	Valve Outlet:	350
Gas Code:	CO,BALN	Certification Date:	Dec 02, 2013

Expiration Date: Dec 02, 2021

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	300.0 PPM	296.4 PPM	G1	+/- 1.0% NIST Traceable	12/02/2013
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	11060327	CC2139	988.8 PPM CARBON MONOXIDE/NITROGEN	+/- 0.4%	Dec 13, 2016

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO-1 HORIBA VIA-510 TKPPF7FG	NDIR	Nov 24, 2013

Triad Data Available Upon Request



Signature on file
Approved for Release

TSD Attachment 5

Schroter Stack Test (data)

Emissionsdata for Schröter smokesystems with and without air purification

Table A) Smoke-data direct behind smokegenerator (without air purification)

Rec'd 1-23-02
dlr

smoke chamber type	smoke generator type	total hydrocarbons THC *				flow rate Nm ³ /hour	carbonmonoxide ppm	formaldehyd mg/Nm ³	phenol mg/Nm ³
		minimum	maximum	minimum	maximum				
HR	R 88	800	2000	0,28	1,05	50-150	2000-4000	20-100	50-200
HR	R 91	800	2500	0,70	2,62	150-300	2000-8000	20-100	50-200
HR	R 90	800	2500	0,70	2,62	150-300	2000-8000	20-100	50-200

Table B) Emissionsdata behind smokechamber (without air purification)

smoke chamber type	smoke generator type	total hydrocarbons THC				flow rate Nm ³ /hour	carbonmonoxide ppm	formaldehyd mg/Nm ³	phenol mg/Nm ³
		minimum	maximum	minimum	maximum				
HR	R 88	350	600	0,08	0,26	100-200	500-1500	5-15	5-20
HR	R 91	300	750	0,13	0,58	200-350	1000-3000	5-20	10-20
HR	R 90	250	600	0,08	0,33	150-250	1000-3000	5-20	10-20

Table C) Emissionsdata behind smokechamber with exhaust scrubber

smoke chamber type	smoke generator type	total hydrocarbons THC				flow rate Nm ³ /hour	carbonmonoxide ppm	formaldehyd mg/Nm ³	phenol mg/Nm ³
		minimum	maximum	minimum	maximum				
HR	R 88	30	50	0,01	0,04	100-200	< 250	< 2	< 2
HR	R 91	50	100	0,04	0,12	200-350	< 500	< 2	< 2
HR	R 90	50	100	0,03	0,09	150-250	< 500	< 2	< 2

HR = hot smoke chamber

ppm= parts per million

all data do not included C1-C4 alcans (e.g. methan to butan), because silica gel adsorbition method is applied

* FID (flame ionization detection)-method is applied, methan and C2-C4 alcans are already included

Hot smokehouse with R88 or R91 and direct gasheating

exhaust-data

exhaust amount = 240 cfm (400 m³/h)R88 resp. R91 = 120 cfm (200 m³/h) direct gasheating = 120 cfm (200 m³/h)

	mg/m ³	kg/h	lbs/hr
SOx	1700	0,68	1,49
NOx	160	0,064	0,14
PM	100	0,04	0,09
PM 10	80	0,032	0,07
VOC	20	0,008	0,02
CO	100	0,04	0,09
Pb *	1	4E-04	0,0009

* = sum heavy metals

for liquid smoke (instead of R88, R91): CO-value 20-times smaller


Schröter

 Bahnhofstraße 86 33829 Borgholzhausen
 Tel. 05425 / 950-0 Fax 05425 / 18 28
 e-mail schroeter@schroeter-anlagenbau.de

Emissionsdaten; Messung vom Oktober 2001

Inhaltsstoffe / ingredients	Messung 1	Messung 2	Messung 3	units
	untreated exhaust	treated exhaust	old house	
	smoke by R 88	R 88 + scrubber		
	15.10.2001 / 12:55	15.10.2001 / 06:20	16.10.2001 / 12:45	

particulates total	0,21	0,29	0,3	g / m ³
formaldehyde in air	0,0083	0,17		mg / m ³
vinyl chloride	7,8	2,0	2,0	ppb
vinylidene chloride	5,0	1,3	1,3	ppb
freon -113	7,8	2,0	2,0	ppb
chloroform	4,1	2,4	4,5	ppb
1,2 dichloroethane	4,9	1,2	1,2	ppb
benzene	27	11	130	ppb
toluene	50	8,2	27	ppb
methyl chloride	90	35	7,4	ppb
methyl bromide	10	2,6	2,6	ppb
ethyl chloride	7,6	1,9	1,9	ppb
freon - 11	7,1	1,8	1,8	ppb
dichloromethane	6,0	8,9	6,0	ppb
1,1 - dichloromethane	4,9	1,2	1,2	ppb
cis - 1,2 - dichloroethylene	5,0	1,3	1,3	ppb
1,2 dichloropropane	4,3	1,1	1,1	ppb
1,1,2 - trichloroethane	3,7	0,92	0,92	ppb
1,2 - dibromoethane	2,6	0,65	0,62	ppb
tetrachloroethylene	3,0	0,74	0,74	ppb
chlorobenzene	4,3	1,1	1,1	ppb
methyl chloroform	3,7	0,92	0,92	ppb
carbon tetrachloride	3,2	0,8	0,8	ppb
trichloroethylene	3,7	0,93	0,93	ppb
cis - 1,3 - dichloropropene	4,4	1,1	1,1	ppb
trans - 1,3 - dichloropropene	4,4	1,1	1,1	ppb
ethyl benzene	4,6	1,7	1,6	ppb
o - xylene	4,6	2,6	1,7	ppb
m - xylene	see conclusion (8,0)	see conclusion (5,9)	see conclusion (4,0)	ppb
p - xylene	see conclusion (8,0)	see conclusion (5,9)	see conclusion (4,0)	ppb
styrene	4,7	1,2	1,2	ppb
1,1,2,2- tetrachloroethane	2,9	0,73	0,73	ppb
m - dichlorobenzene	3,3	0,83	0,83	ppb
o - dichlorobenzene	3,3	0,83	0,83	ppb
p - dichlorobenzene	3,3	0,83	0,83	ppb
acetone	2,6	280	760	ppb
carbon disulfide	71	40	15	ppb
vinyl acetate	2	100	230	ppb
2 - butanone (MEK)	660	67	130	ppb
2 - hexanone	6			ppb
bromodichloromethane		1,4		ppb
dibromochloromethane		0,85		ppb

sample conclusions

m- and p - xylene cannot be separated by this method / combined result is (X,X) ppb

OCT-24-2001 17:01 FROM MICROBAC LABS/ERIE DIV. TO 15137823815

P.02/06

24-OCT-01 13:23:50

ERIE DIVISION

Page 001

Test Result Report

List Work Orders, Conclusions Included, For Completed Tests

Current

For All Projects, For ALL Customers

For ALL sample dates, For ALL receive dates

Work Order Number	Customer Number	Customer Name	Subject Line
9934-02050	010089	JOHN MORRELL & CO.	EXHAUST SAMPLES FOR ANALYSIS

Sample # Description

1 UNTREATED EXHAUST, 10/15/01 @ 12:55

Test Code	Test Name	Test Result	Test Units	Actual Result	Adjusted Result	Adjust Pct	Min Rpt Lmt	Qualifiers
AC-PART	PARTICULATES, TOTAL	est. 210 MG/M3		0.21				
AC-FORML	FORMALDEHYDE IN AIR	<0.0083 NG/CUBIC M		0.0083				
ZZ-T014001	VINYL CHLORIDE	<7.8 PPB		7.8			0	
ZZ-T014002	VINYLBENE CHLORIDE	<5.0 PPB		5.0			0	
ZZ-T014003	FREON-113	<7.8 PPB		7.8			0	
ZZ-T014004	CHLOROFORM	<4.1 PPB		4.1			0	
ZZ-T014005	1,2-DICHLOROETHANE	<4.9 PPB		4.9			0	
ZZ-T014006	BENZENE	27 PPB		27			0	
ZZ-T014007	TOLUENE	50 PPB		50			0	
ZZ-T014009	METHYL CHLORIDE	90 PPB		90			0	
ZZ-T014011	METHYL BROMIDE	<10 PPB		10			0	
ZZ-T014012	ETHYL CHLORIDE	<7.6 PPB		7.6			0	
ZZ-T014013	FREON-11	<7.1 PPB		7.1			0	
ZZ-T014014	DICHLOROMETHANE	6.0 PPB		6.0			0	
ZZ-T014015	1,1-DICHLOROETHANE	4.9 PPB		4.9			0	
ZZ-T014016	cis-1,2-DICHLOROETHYLENE	<5.0 PPB		5.0			0	
ZZ-T014017	1,2-DICHLOROPROPANE	<4.3 PPB		4.3			0	
ZZ-T014018	1,1,2-TRICHLOROETHANE	<3.7 PPB		3.7			0	
ZZ-T014019	1,2-DIBROMOETHANE	<2.6 PPB		2.6			0	
ZZ-T014020	TETRACHLOROETHYLENE	<3.0 PPB		3.0			0	
ZZ-T014021	CHLOROBENZENE	<4.3 PPB		4.3			0	
ZZ-T014024	METHYL CHLOROFORM	<3.7 PPB		3.7			0	
ZZ-T014025	CARBON TETRACHLORIDE	<3.2 PPB		3.2			0	
ZZ-T014040	TRICHLOROETHYLENE	<3.7 PPB		3.7			0	
ZZ-T014026	cis-1,3-DICHLOROPROPENE	<4.4 PPB		4.4			0	
ZZ-T014027	trans-1,3-DICHLOROPROPENE	<4.4 PPB		4.4			0	
ZZ-T014028	ETHYL BENZENE	<4.6 PPB		4.6			0	
ZZ-T014029	o-XYLENE	<4.6 PPB		4.6			0	
ZZ-T014030	m-XYLENE	SEE CONCLUSION PPB		0			0	
ZZ-T014031	p-XYLENE	SEE CONCLUSION PPB		0			0	
ZZ-T014032	STYRENE	<4.7 PPB		4.7			0	
ZZ-T014033	1,1,2,2-TETRACHLOROETHANE	<2.9 PPB		2.9			0	
ZZ-T014036	m-DICHLOROBENZENE	<3.3 PPB		3.3			0	
ZZ-T014037	o-DICHLOROBENZENE	<3.3 PPB		3.3			0	
ZZ-T014038	p-DICHLOROBENZENE	<3.3 PPB		3.3			0	

----- Sample Conclusions -----
Sample #1: T0-14 Analysis

m- and p-Xylene cannot be separated by this method. The

OCT-24-2001 17:01 FROM MICROBAC LABS/ERIE DIV. TO 15137823815

P.03/06

24-OCT-01 13:23:50

ERIE DIVISION

Page 002

Test Result Report

List Work Orders, Conclusions Included, For Completed Tests
 Current
 For All Projects, For ALL Customers
 For ALL sample dates, For ALL receive dates

combined result is 8.0 ppb.

This sample was also positive for the following:

Acetone	2,600	ppb
Carbon Disulfide	71	ppb
Vinyl Acetate	2,000	ppb
2-Butanone (MEK)	660	ppb
2-Hexanone	6.0	ppb

OST/DKM

Sample # Description

2 TREATED EXHAUST, 10/15/01 @ 6:20

Test Code	Test Name	Test Result	Test Units	Actual Result	Adjusted Result	Adjust Pct	Min Rpt Lmt Qualifiers
AC-PART	PARTICULATES, TOTAL	est. 29	MG/M3	0.29			
AC-FORML	FORMALDEHYDE IN AIR	0.17	MG/CUBIC M	0.17			
ZZ-T014001	VINYL CHLORIDE	<2.0	PPB	2.0		0	
ZZ-T014002	VINYLDENE CHLORIDE	<1.3	PPB	1.3		0	
ZZ-T014003	FREON-113	<2.0	PPB	2.0		0	
ZZ-T014004	CHLOROFORM	2.4	PPB	2.4		0	
ZZ-T014005	1,2-DICHLOROETHANE	<1.2	PPB	1.2		0	
ZZ-T014006	BENZENE	11	PPB	11		0	
ZZ-T014007	TOLUENE	8.2	PPB	8.2		0	
ZZ-T014009	METHYL CHLORIDE	35	PPB	35		0	
ZZ-T014011	METHYL BROMIDE	<2.6	PPB	2.6		0	
ZZ-T014012	ETHYL CHLORIDE	<1.9	PPB	1.9		0	
ZZ-T014013	FREON-11	<1.8	PPB	1.8		0	
ZZ-T014014	DICHLOROMETHANE	8.9	PPB	8.9		0	
ZZ-T014015	1,1-DICHLOROETHANE	<1.2	PPB	1.2		0	
ZZ-T014016	cis-1,2-DICHLOROETHYLENE	<1.3	PPB	1.3		0	
ZZ-T014017	1,2-DICHLOROPROPANE	<1.1	PPB	1.1		0	
ZZ-T014018	1,1,2-TRICHLOROETHANE	<0.92	PPB	0.92		0	
ZZ-T014019	1,2-DIBROMOETHANE	<0.65	PPB	0.65		0	
ZZ-T014020	TETRACHLOROETHYLENE	<0.74	PPB	0.74		0	
ZZ-T014021	CHLOROBENZENE	<1.1	PPB	1.1		0	
ZZ-T014024	METHYL CHLOROFORM	<0.92	PPB	0.92		0	
ZZ-T014025	CARBON TETRACHLORIDE	<0.80	PPB	0.80		0	
ZZ-T014040	TRICHLOROETHYLENE	<0.93	PPB	0.93		0	
ZZ-T014026	cis-1,3-DICHLOROPROPENE	<1.1	PPB	1.1		0	
ZZ-T014027	trans-1,3-DICHLOROPROPENE	<1.1	PPB	1.1		0	
ZZ-T014028	ETHYL BENZENE	1.7	PPB	1.7		0	
ZZ-T014029	o-XYLENE	2.6	PPB	2.6		0	
ZZ-T014030	m-XYLENE	SEE CONCLUSION	PPB	0		0	
ZZ-T014031	p-XYLENE	SEE CONCLUSION	PPB	0		0	
ZZ-T014032	STYRENE	<1.2	PPB	1.2		0	
ZZ-T014033	1,1,2,2-TETRACHLOROETHANE	<0.73	PPB	0.73		0	

OCT-24-2001 17:02 FROM MICROBAC LABS/ERIE DIV. TO 15137823815

P.04/06

24-OCT-01 13:23:50

ERIE DIVISION

Page 003

Test Result Report

List Work Orders, Conclusions Included, For Completed Tests

Current

For All Projects, For ALL Customers

For All sample dates, For ALL receive dates

Test Code	Test Name	Test Result	Test Units	Actual Result	Adjusted Result	Adjust Pct	Min Rpt Lmt Qualifiers
ZZ-T014036	m-DICHLOROBENZENE	<0.83	PPB	0.83		0	
ZZ-T014037	o-DICHLOROBENZENE	<0.83	PPB	0.83		0	
ZZ-T014038	p-DICHLOROBENZENE	<0.83	PPB	0.83		0	

----- Sample Conclusions -----
 Sample #2: T0-14 Analysis

m- and p-Xylene cannot be separated by this method. The combined result is 5.9 ppb.

A matrix interference was seen for Chloroform.
 This sample was also positive for the following:

Acetone	280	ppb
Carbon Disulfide	40	ppb
Vinyl Acetate	100	ppb
2-Butanone (MEK)	67	ppb
Bromodichloromethane	1.4	ppb
Dibromochloromethane	0.85	ppb

OST/BKM

Sample # Description

3 OLD HOUSE, 10/16/01 @ 12:45

Test Code	Test Name	Test Result	Test Units	Actual Result	Adjusted Result	Adjust Pct	Min Rpt Lmt Qualifiers
10-PART	PARTICULATES, TOTAL	est. 3	MG/M3	0.3			
ZZ-T014001	VINYL CHLORIDE	<2.0	PPB	2.0		0	
ZZ-T014002	VINYLDENE CHLORIDE	<1.3	PPB	1.3		0	
ZZ-T014003	FREON-113	<2.0	PPB	2.0		0	
ZZ-T014004	CHLOROFORM	4.5	PPB	4.5		0	
ZZ-T014005	1,2-DICHLOROETHANE	<1.2	PPB	1.2		0	
ZZ-T014006	BENZENE	130	PPB	130		0	
ZZ-T014007	TOLUENE	27	PPB	27		0	
ZZ-T014009	METHYL CHLORIDE	7.4	PPB	7.4		0	
ZZ-T014011	METHYL BROMIDE	<2.6	PPB	2.6		0	
ZZ-T014012	ETHYL CHLORIDE	<1.9	PPB	1.9		0	
ZZ-T014013	FREON-11	<1.8	PPB	1.8		0	
ZZ-T014014	DICHLOROMETHANE	6.0	PPB	6.0		0	
ZZ-T014015	1,1-DICHLOROETHANE	<1.2	PPB	1.2		0	
ZZ-T014016	cis-1,2-DICHLOROETHYLENE	<1.3	PPB	1.3		0	
ZZ-T014017	1,2-DICHLOROPROPANE	<1.1	PPB	1.1		0	
ZZ-T014018	1,1,2-TRICHLOROETHANE	<0.92	PPB	0.92		0	
ZZ-T014019	1,2-DIBROMOETHANE	<0.62	PPB	0.62		0	
ZZ-T014020	TETRACHLOROETHYLENE	<0.74	PPB	0.74		0	

OCT-24-2001 17:02 FROM MICROBAC LABS/ERIE DIV. TO 15137823815

P.05/06

24-OCT-01 13:23:50

ERIE DIVISION

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Test Result Report

List Work Orders, Conclusions Included. For Completed Tests

Current

FOR ALL PROJECTS, FOR ALL CUSTOMERS

For ALL sample dates, For ALL receive dates

Test Code	Test Name	Test Result	Test Units	Actual Result	Adjusted Result	Adjust Per	Min	Rpt	Lmt	Qualifiers
ZZ-T014021	CHLOROBENZENE		<1.1 PPB		1.1		0			
ZZ-T014024	METHYL CHLOROFORM		<0.92 PPB		0.92		0			
ZZ-T014025	CARBON TETRACHLORIDE		<0.80 PPB		0.80		0			
ZZ-T014040	TRICHLOROETHYLENE		<0.93 PPB		0.93		0			
ZZ-T014026	cis-1,3-DICHLOROPROPENE		<1.1 PPB		1.1		0			
ZZ-T014027	trans-1,3-DICHLOROPROPENE		<1.1 PPB		1.1		0			
ZZ-T014028	ETHYL BENZENE		1.6 PPB		1.6		0			
ZZ-T014029	o-XYLENE		1.7 PPB		1.7		0			
ZZ-T014030	m-XYLENE	SEE CONCLUSION	PPB		0		0			
ZZ-T014031	p-XYLENE	SEE CONCLUSION	PPB		0		0			
ZZ-T014032	STYRENE		<1.2 PPB		1.2		0			
ZZ-T014033	1,1,2,2-TETRACHLOROETHANE		<0.73 PPB		0.73		0			
ZZ-T014036	m-DICHLOROBENZENE		<0.83 PPB		0.83		0			
ZZ-T014037	o-DICHLOROBENZENE		<0.83 PPB		0.83		0			
ZZ-T014038	p-DICHLOROBENZENE		<0.83 PPB		0.83		0			

----- Sample Conclusions -----

Sample #3: T0-14 Analysis

m- and p-Xylene cannot be separated by this method. The combined result is 4.0 ppb.

This sample was also positive for the following:

Acetone	760 ppb
Carbon Disulfide	15 ppb
Vinyl Acetate	230 ppb
2-Butanone (MEK)	130 ppb

DST/DXM

Sample #	Description

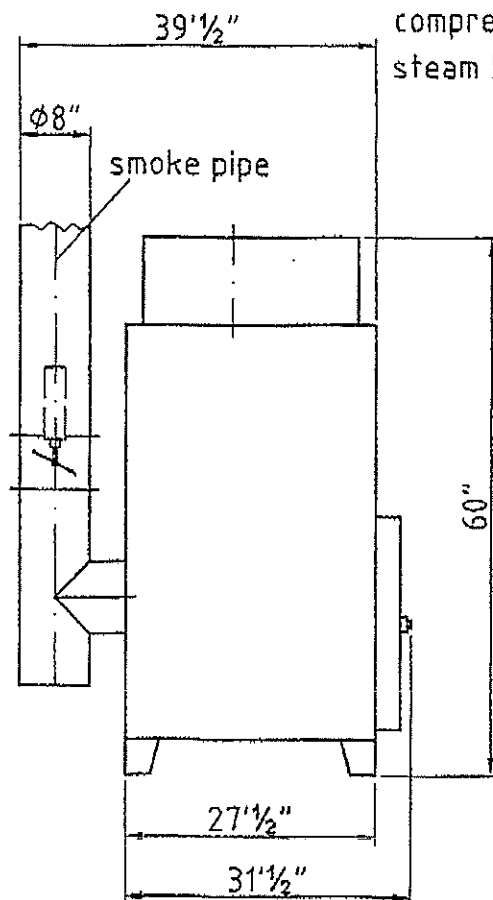
4 RENTAL OF 3 PUMPS FOR 3 DAYS

Test Code	Test Name	Test Result	Test Units	Actual Result	Adjusted Result	Adjust Pot	Min	Rpt Lmt	Qualifiers
AC-PUMP	PUMP, CLIENT RENTAL		9 PUMP DAY(S)		9				

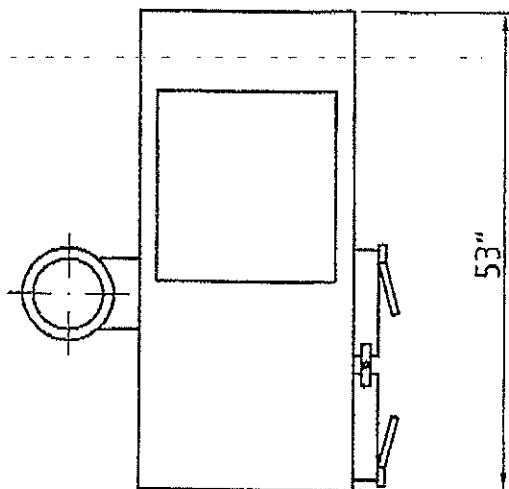
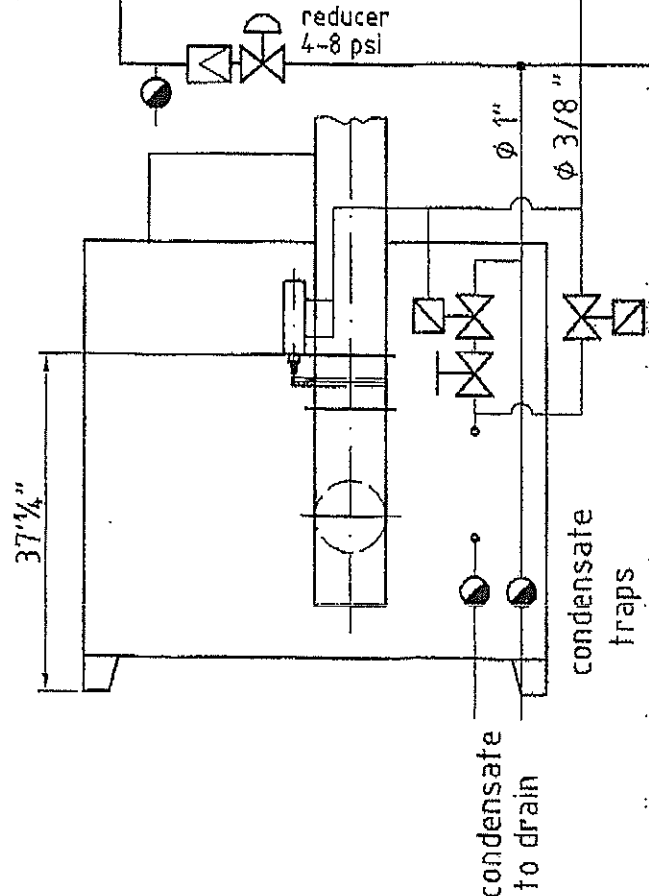
Sample #	Description

5 AIR SAMPLING MEDIA

Test Code	Test Name	Test Result	Test Units	Actual Result	Adjusted Result	Adjust Pct	Min	Rpt Lmt	Qualifiers



compressed air 90 psi
steam 50-120 psi



Steam

reduced high pressure steam,
50-120 psi adjustable
pressure 4-8 psi,
approx. 45-65 lbs/h

Compressed air

90 psi, 2 gal/min

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Schröter GmbH & Co. KG
Anlagenbau
Maschinen für die Nahrungsmittel-Industrie
Postfach 1251 D 33826 Borgholzhausen/Westfalen
Telefon 0 54 25 / 9 50-0 Telefax 0 54 25 / 18 28

Maßstab 1:20

Werkstoff:

Firma

Smoke Generator R88

Auftragsnummer:

1154.003.4

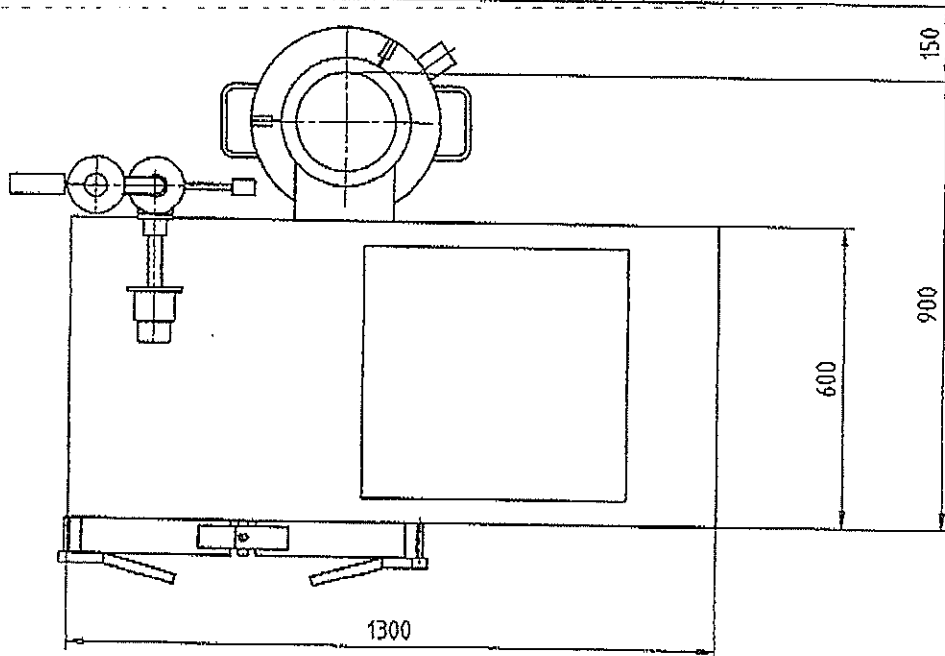
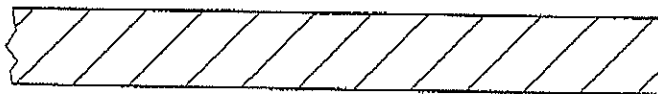
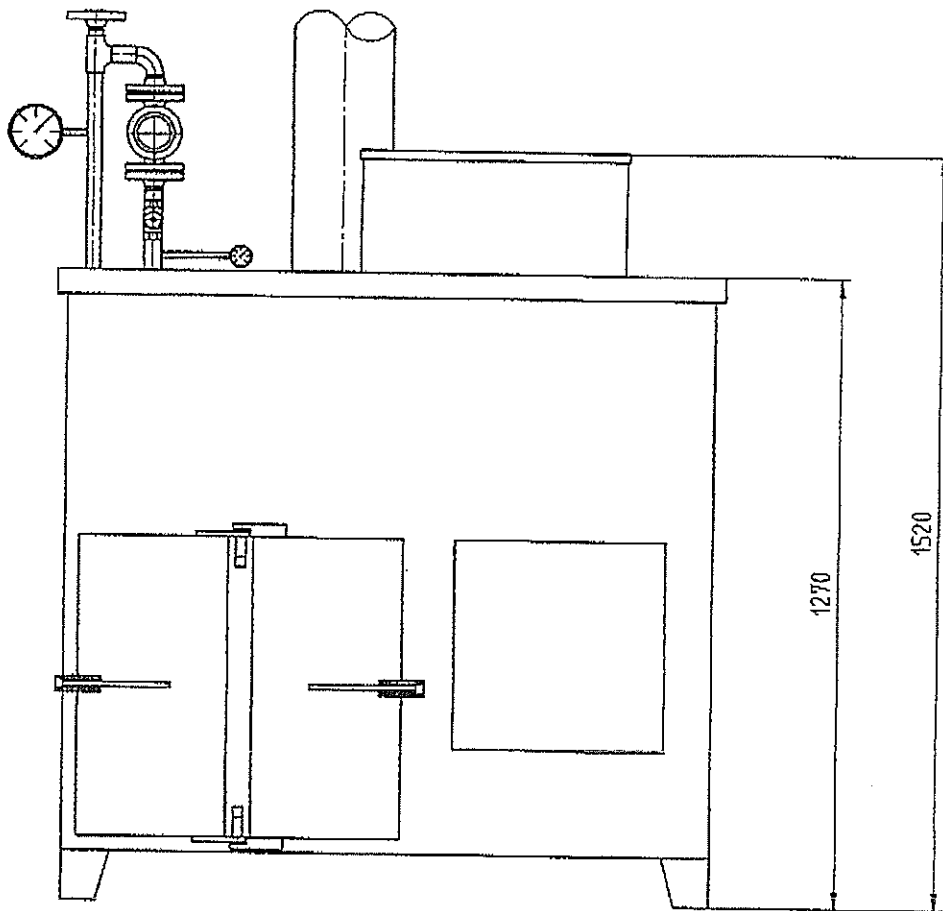
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A	bezeichnung	Datum	Name	Dateiname
		21.07.00	Bert.	
Zust.	Änderung			

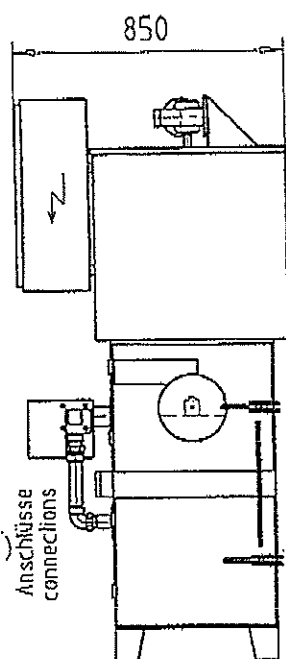
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18.09.2001

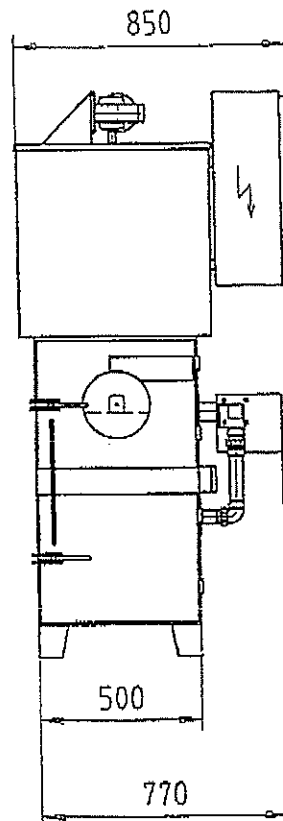


 Schröter GmbH & Co. KG Anlagenbau Maschinen für die Nahrungsmittel-Industrie Postfach 1251 D-33026 Bielefeld-Hausen/Westfalen Telefon 05425/950-0 Telefax 05425/4824				Maßstab 1 : 10		Werkstoff:	
				Raucherzeuger R88			
				Datum		Name	
				Bearb.		24.03.98	
				Gepr.		HST	
				Norm			

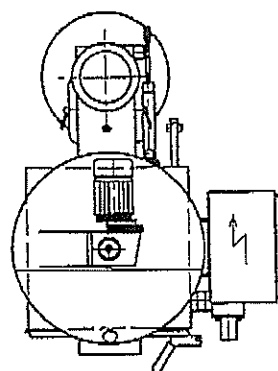
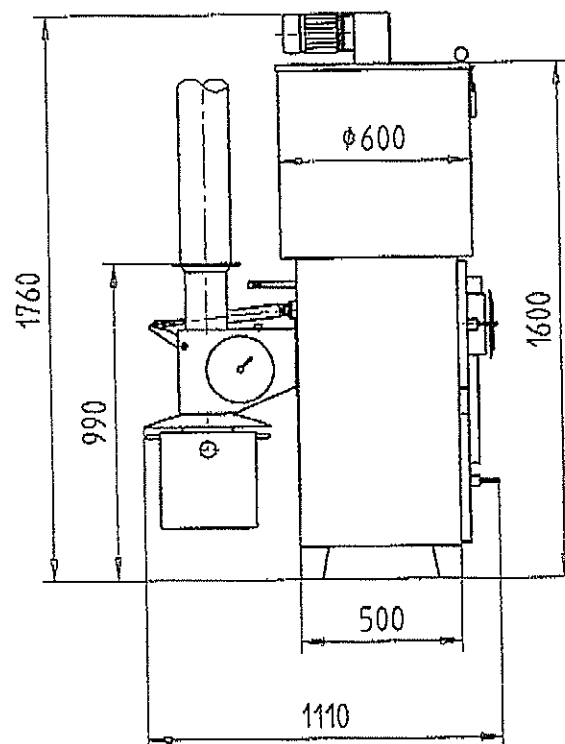
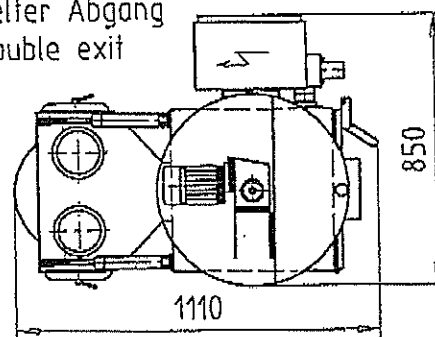
Anschlüsse , connections



Links , left



Rechts , right

einfacher Abgang
single exitdoppelter Abgang
double exit

Schröter GmbH & Co KG
Anlagenbau
Maschinen für die Nahrungsmittel-Industrie
Postfach 1251 D-33826 Borgholzhausen/Westfalen
Telefon 05425/250-0 Telefax 05425/1828

Maßstab 1 : 20

Werkstoff

			Datum	Name
		Beorb	28.08.98	HST
		Gepr		
		Norm		
Zust.	Änderung	Datum	Name	

Raucherzeuger
smoke generator
R91

1156.002.4

Blatt

Bl

NUR MIT CAD ÄNDERN

(RUKON)

TSD Attachment 6

Schroter Stack Test (throughputs)

Fax from:

BRIL-TECH

508 Clinton Street
Defiance, OH 43512
Phone: (419) 782-2430
Fax: (419) 784-9717

Jack Clark
313-477-6735
Brian
248-613-9979

Date: 05/14/96

Number of pages including cover page: 1

To: Sheri Soldatke
Company: Hormel Foods
Fax Number: (507) 437-9805

From: Ken Kaye

Subject: Smoke Generator Information

Dear Sheri:

Here is the Emissions data and woodchip consumption information you requested as follows:

Emissions Data For Schroter Smoke Systems								
		Total Hydrocarbon THC				Emission Conditions		
		Concentration ppm		Mass Flow kg/h		Flow rate	Carbon Monoxide	Formaldehyde Phenol
Smoke Chamber Type	Smoke Generator Type	Minimum	Maximum	Minimum	Maximum	Nm ³ /hour	ppm	mg/Nm ³ mg/Nm ³
HR	R 88	350	600	0.04	0.12	100-200		5-15 5-20
HR	R 91	300	750	0.06	0.28	200-350	1000-3000	5-20 10-20
HR	R 90	250	600	0.05	0.15	150-250	1000-3000	5-20 10-20
HR = Hot Smoke Chamber				R 90, R 91 = Glow Smoke Generator				
ppm = parts per million				R 88 = Steam Smoke Generator				

Woodchip Consumptions: R 88 = 40 lbs/hr
R 91 = 30 lbs/hr

Best Regards,

Ken Kaye
Manager - Engineering

cc: Mr. Dick Watt, Project Engineer

14.7 psia
measured



Schröter GmbH & Co.KG
Anlagenbau

MASCHINEN FÜR DIE NAHRUNGSMITTEL-INDUSTRIE

**Hotsmokehouse with R88 or R91 and direct gasheating
exhaust-data**

exhaust amount = 240 cfm (400 m³/h)

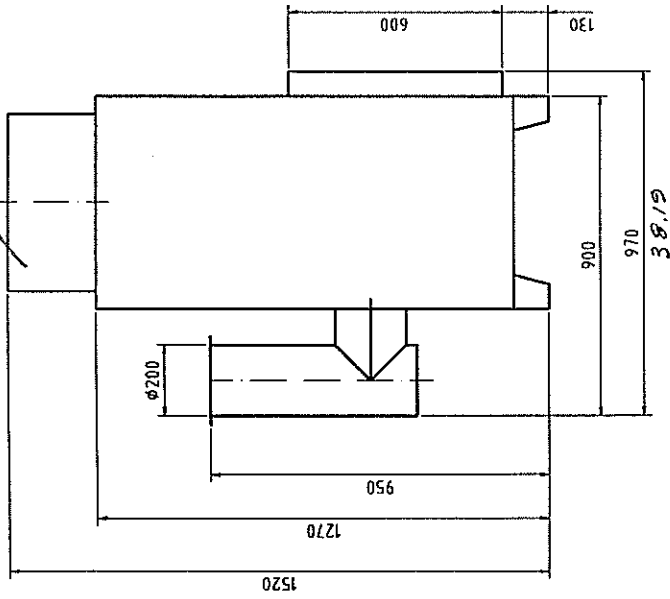
R88 resp. R91 = 120 cfm (200 m³/h) direct gasheating = 120 cfm (200 m³/h)

	mg/m ³	kg/h	lbs/hr
SO _x	1700	0,68	1,49
NO _x	160	0,064	0,14
PM	100	0,04	0,09
PM 10	80	0,032	0,07
VOC	20	0,008	0,02
CO	100	0,04	0,09
Pb *	1	0,0004	0,00

* = sum heavy metals

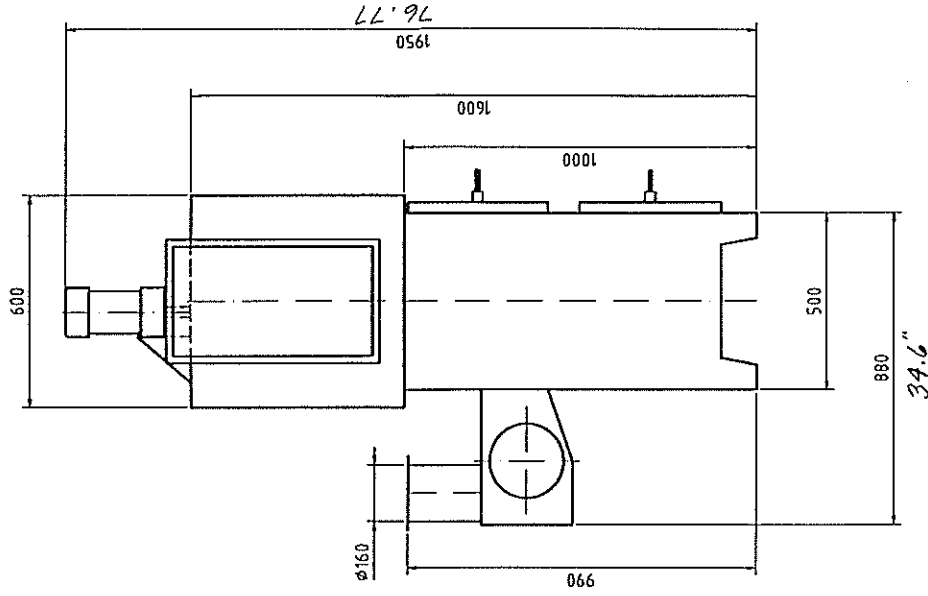
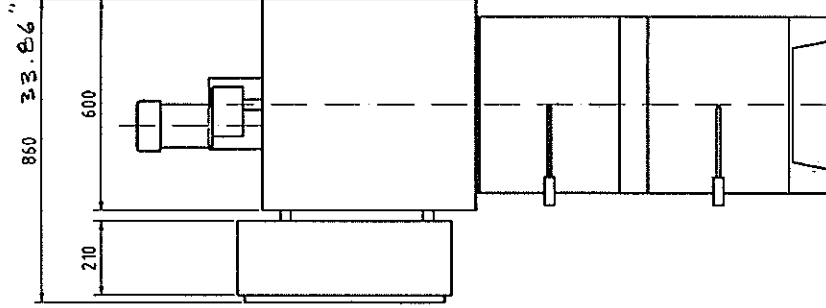
for liquid smoke (instead of R88, R91): CO-value 20-times smaller

R88-BACON



COPY

R91-HAM



Schröter GmbH & Co.		Mettler 1:10		Vertrieb 1:4301	
Maschinen für die Nahrungs- und Genussmittelindustrie		Feine			
Postfach 1251 D-33028 Bielefeld		Tel. 0521 3111-1		Fax 0521 3111-25	
E-Mail: info@schroeter.de		Web: www.schroeter.de			
Norm		Norm			
Datum		Name		Eig. Nr. 77000000000000000000	
Fertigung		Blatt			
Blatt		Blatt			

SMOKE GENERATOR

TSD Attachment 7

Industrial Hygiene Test Results



TOTAL SUSPENDED PARTICULATE MATTER (TSP) COMPLIANCE STUDY

Performed At The

Hormel Foods Corporation

Austin Plant

AQ Facility ID Number: 09900002-104

Agency Interest ID: 3926

Crax Grinding / Truck Loadout Room (EQUI 17), Crax Storage Room Air (EQUI 18) and

Rendering Room Air (EQUI 72)

Austin, Minnesota

Emission Facility Contact Person

Brian Diep

Staff Environmental Engineer - Austin

500 14th Ave NE

Austin, Minnesota 55912

Telephone: 507-434-6166

Email: BLDiep@hormel.com

Test Date(s)

February 9, 2024

Report No.

TRC Environmental Corporation Report 580708

Report Submittal Date

March 25, 2024

TRC Environmental Corporation
1301 Corporate Center Drive - Suite 177
Eagan, Minnesota 55121-1259
USA

T (651) 686-0700
F eaganmn-fax@trccompanies.com



CERTIFICATIONS REQUIRED FOR PERFORMANCE TEST REPORTS
580708

1. Certification of sampling procedures by the team leader of the personnel conducting the sampling procedures:

"I certify under penalty of law that the sampling procedures were performed in accordance with the approved test plan and that the data presented in this test report are, to the best of my knowledge and belief, true, accurate, and complete. All exceptions are listed and explained below."



Signature:
Emissions Testing Group Manager
Title

David Wainio

Printed Name of Person
March 8, 2024
Date

2. Certification of analytical procedures by the person responsible for the laboratory analysis of field samples:

"I certify under penalty of law that the analytical procedures were performed in accordance with the requirements of the test methods and that the data presented for use in the test report were, to the best of my knowledge and belief, true, accurate, and complete. All exceptions are listed and explained below."

See Appendix

Signature:
See Appendix
Title

See Appendix

Printed Name of Person
See Appendix
Date

3. Certification of test report by the senior staff person at the testing company who is responsible for compiling and checking the test report:

"I certify under penalty of law that this test report and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the test information submitted. Based on my inquiry of the person or persons who performed sampling and analysis relating to the performance test, the information submitted in this test report is, to the best of my knowledge and belief, true, accurate, and complete. All exceptions are listed and explained below."



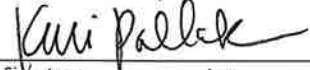
Signature:
Senior Project Manager
Title

Tim Senger

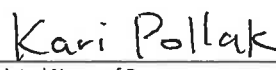
Printed Name of Person
March 11, 2024
Date

4. Certification of test report by owner or operator of the emission facility:

"I certify under penalty of law that the information submitted in this test report accurately reflects the operating conditions at the emission facility during this performance test and describes the date and nature of all operational and maintenance activities that were performed on process and control equipment during the month prior to the performance test. Based on my inquiry of the person or persons who performed the operational and maintenance activities, the information submitted in this test report is, to the best of my knowledge and belief, true, accurate, and complete. All exceptions are listed and explained below."



Signature:
Plant Manager
Title



Printed Name of Person
4-3-2024
Date

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Report Certification

I certify that to the best of my knowledge:

- Testing data and all corresponding information have been checked for accuracy and completeness.
- Sampling and analysis have been conducted in accordance with the approved protocol and applicable reference methods (as applicable).
- All deviations, method modifications, or sampling and analytical anomalies are summarized in the appropriate report narrative(s).

A handwritten signature in black ink, appearing to read "David J. Wainio", written over a horizontal line.

David Wainio
Emissions Testing Group Manager

March 8, 2024

Date

TRC was operating in conformance with the requirements of ASTM D7036-04 during this test program.

A handwritten signature in black ink, appearing to read "B. Randall", written over a horizontal line.

Bruce Randall
TRC Emission Testing Technical Director



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TOTAL SUSPENDED PARTICULATE MATTER (TSP) COMPLIANCE STUDY

1.0 INTRODUCTION

TRC Environmental Corporation, (TRC) performed an industrial hygiene indoor air sampling test program for total suspended particulate matter in ambient indoor air for the Crax Grinding / Truck Loadout Room (EQUI 17), Crax Storage Room Air (EQUI 18) and Rendering Room Air (EQUI 72) at the Austin Plant of Hormel Foods Corporation in Austin, Minnesota on February 9, 2024. The tests were authorized by and performed for Hormel Foods Corporation. The purpose of this test program was to quantify emissions of the pollutants presented in the following table:

Source ID/Sample Location	Permit ID	Pollutants of Concern
Crax Grinding / Truck Loadout Room Air	EQUI 17	Total Suspended Particulate Matter (TSP)*
Crax Storage Room Air	EQUI 18	
Rendering Room Air	EQUI 72	

*TSP is defined as represented filterable PM, Filterable PM10 and Filterable PM2.5 emissions.

The tests were performed in order to determine compliance with the PM limits for the referenced rooms in Minnesota Pollution Control Agency (MPCA) Air Quality Permit Number 09900002-104. The test program was conducted according to the appended TRC site-specific test plan finalized and submitted on January 10, 2024. Any changes from the test plan or problems encountered during the tests are addressed in Section 2.0.

1.1 Project Contact Information

Participants		
Test Facility	Hormel Foods Corporation Austin Plant 500 14th Ave NE Austin, Minnesota 55912	Brian Diep Staff Environmental Engineer - Austin 507-434-6166 BLDiep@hormel.com
Air Emissions Testing Body (AETB)	TRC Environmental Corporation 1301 Corporate Center Drive - Suite 177 Eagan, Minnesota 55121-1259	David Wainio Emissions Testing Group Manager 651-249-8776 (phone) dwainio@trccompanies.com

The tests were conducted by David Wainio of TRC.



The Minnesota Pollution Control Agency (MPCA) was informed of, but did not observe the testing.

1.2 Facility and Process Description

Hormel Foods Corporation operates a meat processing plant in Austin, MN. Hormel manufactures hogs into ham, bacon, dry sausage, fresh sausage, and other meat products. There are many emission sources at the facility, however most of them qualify as insignificant activities under Minn. R. 7007.1300, subparts 3 and 4.

Certain rendering equipment within the Hormel Foods – Austin facility is vented to the ambient room air in one of four rooms. These four rooms have been split into three emission units: EQUI 72 – Rendering Room Air (RP101), EQUI 18 – Crax Storage Room Air (RP109), and EQUI 17 – Crax Grinding Room Air (RP107)/Truck Loadout Room Air (RP108). EQUI 17 is comprised of two individual rooms: the Crax Grinding Room and the Load Out Dock. Hormel/QPP keeps all four rooms at a negative pressure, and the air withdrawn from EQUI 18 and EQUI 72 is sent through an adsorption column before venting to the atmosphere, while air withdrawn from EQUI 17 is sent through a Venturi scrubber and adsorption column in series before venting to the atmosphere. The MPCA requires that emissions from these room air units be quantified in order to demonstrate compliance with PM, PM₁₀, and PM_{2.5} limits at STRU 2 (venting EQUI 17 and EQUI 18) and EQUI 72, used to avoid PSD major source status at the stationary source. The following protocol details industrial hygiene indoor air quality testing for PM, PM₁₀, and PM_{2.5}, which will be performed to quantify emissions in lieu of conventional stack testing for which plant infrastructure is unsuitable to complete.



2.0 SUMMARY AND DISCUSSION OF RESULTS

Three samples were taken in each of the four rooms at various locations. The exact locations each of these samples is appended. Only TSP sampling was conducted and PM₁₀ and PM_{2.5} emissions are assumed to equal TSP. The results are summarized below. Complete results are summarized in Section 6.0.

TSP Concentrations from February 9, 2024 Sampling

EQUI #	Room (Location)	Sample ID	TSP (ug)	TSP (mg)	Volume (L dry)	Volume (m ³)	TSP (mg/m ³)
EQUI 72	Rendering (A)	TRC 89904	390	0.39	648	0.648	0.60
EQUI 72	Rendering (B)	TRC 89905	360	0.36	627	0.627	0.57
EQUI 72	Rendering (C)	TRC 89906	250	0.25	629	0.629	0.40
Average TSP (mg/m³)							0.52
EQUI 17	Crax Grinding (A)	TRC 89907	1200	1.2	632	0.632	1.90
EQUI 17	Crax Grinding (B)	TRC 89908	1300	1.3	601	0.601	2.16
EQUI 17	Crax Grinding (C)	TRC 89909	1000	1	631	0.631	1.58
Average TSP (mg/m³)							1.88
EQUI 18	Crax Storage (A)	TRC 89910	630	0.63	628	0.628	1.00
EQUI 18	Crax Storage (B)	TRC 89911	600	0.6	588	0.588	1.02
EQUI 18	Crax Storage (C)	TRC 89912	1100	1.1	674	0.674	1.63
Average TSP (mg/m³)							1.22
EQUI 17	Truck Loadout (A)	TRC 89913	130	0.13	621	0.621	0.21
EQUI 17	Truck Loadout (B)	TRC 89914	250	0.25	628	0.628	0.40
EQUI 17	Truck Loadout (C)	TRC 89915	53	0.053	617	0.617	0.09
Average TSP (mg/m³)							0.23

Particulate emission rates were calculated as presented in the test protocol with the following equations.

gr/dscf concentrations were calculated using the equation:

$$C_s = \frac{m_n \times 0.01543}{V_{m(std)}}$$

Where:

C_s = Particulate matter concentration (grains/dry standard ft³)

m_n = Net mass of filterable particulate matter collected (mg) + assumed 1:1 condensable PM mass (mg)



Lb/hr emission rates will be calculated using the equation:

$$ER = \frac{C_s \times Q \times 60}{7000}$$

Where:

ER = TSP emission rate calculated using determined room ventilation rates (Q - scfm) (lb/hr)

7000 = grains per pound

The flows Q (room ventilation rates) were provided to TRC by Hormel personnel. These ventilation rates are based off the ventilation systems manufacturer specifications. These rates have not changed from unit startup as there have been no building modifications to change ventilation flow rates. Hormel uses the assumption that if room adsorption scrubbers are operating within specified parameters that room ventilation rates will be equal to manufacturer specifications. Room air flow documentation provided by Hormel is appended. The rendering room ventilation rate is 96,000 cfm. The crax grinding room ventilation rate is 18,000 cfm. The crax storage room and truck loadout room both have ventilation rates of 6,000 cfm.

Based on the concentrations and equations above the emission rates were calculated to be:

TSP Emission Rates

Source ID	Limitation Basis	Permitted Emission Limit	Measured Emissions*	% of the Limit
EQUI 17 and EQUI 18	EPA 40 CFR 52.21 (b)(1)(i) and Minn. R. 7007.3000, Minn. Rules 7017.2025 subpart 1. MN air permit 09900002-104	2.68 lb/hr of TSP	0.159 lb/hr of TSP	6%
EQUI 72		8.38 lb/hr of TSP	0.189 lb/hr of TSP	2%

* The measured results are prior to the Adsorption Columns TREA 24, TREA 25 and TREA 26 and the permit limits are post control, so actual emissions should be less than is presented in the table above.

The results above demonstrate that the measured TSP is well below the limits for each source ID and that EQUI 17, 18 and 72 are in compliance with the current permit limits. No problems were encountered with the testing equipment during the test program. The results presented in this report contain no known errors. No changes or problems were encountered that required modification of any procedures presented in the test plan. No adverse test or environmental conditions were encountered during the conduct of this test program.



The following table presents a summary of relevant process and/or Air Pollution Control Equipment (APCE) operating data.

Source ID	Average Process Rate	Average APCE Parameter(s)
EQUI 17 & 18	4 Trucks Loaded during sampling	TREA 24 Rates (164.4 gpm flow rate / 6.2 in.H2O dP)
		TREA 25 Rates (470.6 gpm flow rate / 2.4 in. H2O dP)
EQUI 72	Dupps evaporation rate 4376 gal/hr	TREA 26 Rates (1137.6 gpm flow rate / 5.8 in. H2O dP)

3.0 EMISSION UNIT OPERATING PARAMETERS AND MAINTENANCE

The following information is presented in the appendix of this report:

- Process and APCE flow diagrams
- Process and APCE operating data

The following is a summary of all maintenance and operations inspections performed on Crax Grinding / Truck Loadout Room (EQUI 17), Crax Storage Room Air (EQUI 18) and Rendering Room Air (EQUI 72) in the month prior to the test:

Event	Organization	Event Type	Type	Status	Date Completed	Sched. Start Date	Description
10023947326	001-0060	PPM	Preventive maintenance	Completed	2/6/2024 23:59	2/7/2024	SEMI-ANNUAL, REPLACE LINES, PEROXIDE PUMPS 32K SCRUBBER (PER AIR PERMIT)
10023928468	001-0060	PPM	TEARDOWN, OR CHANGEOVER	Completed	2/4/2024 23:59	2/1/2024	MONTHLY, CLEAN AND INSPECT, SCRUBBER (PER AIR PERMIT)
10023832014	001-0060	PPM	ROUTINE SET-UP, TEARDOWN, OR	Completed	1/7/2024 23:59	1/1/2024	MONTHLY, CLEAN AND INSPECT, SCRUBBER (PER AIR PERMIT)
10023832013	001-0060	PPM	Preventive maintenance	Completed	1/14/2024 23:59	1/1/2024	[EMBD] QUARTERLY, INSPECT, SCRUBBER AND PIPING, NEW RENDERING BLDG (AIR PERMIT)

4.0 TEST PROCEDURES

All testing, sampling, analytical, and calibration procedures used for this test program were performed in accordance with the methods presented in the following sections.

4.1 Determination Total Suspended Particulate by National Institute for Occupational Safety and Health (NIOSH) Method 500/501

Three TSP samples were collected in each of the four separate rooms for a total of 12 samples. Each sample was collected on 37 mm diameter pre weighed Poly Vinyl Chloride (PVC) filter cassettes using calibrated battery-operated air sampling pumps sampling at



approximately 2 liters per minute. Each location varied in height and location to give an accurate representation of each room volume from floor to ceiling. These locations were determined the day before with plant personnel and locations are appended.

The sample rate of each sampling pump was checked prior to and after sampling using a primary gas flow standard calibrator. These rates were averaged and used in conjunction of the sampling time of each pump to determine sample volume. Total sampling time for each filter was approximately five hours.

The samples were analyzed gravimetrically according to the National Institute for Occupational Safety and Health (NIOSH) method 0500 at the Wisconsin Occupational Health Laboratory (WOHL), an American Industrial Hygiene Association (AIHA) accredited laboratory. (#LAP-101070). Apart from the 12 room samples, 2 quality control sample blanks were also submitted, and these results are appended. The lab results were reported in concentration units of milligrams per cubic meter of air.

No deviations from these methodologies were made.

5.0 QUALITY ASSURANCE PROCEDURES

TRC integrates our Quality Management System (QMS) into every aspect of our testing service. We follow the procedures specified in current published versions of the test Method(s) referenced in this report. Any modifications or deviations are specifically identified in the body of the report. We routinely participate in independent, third party audits of our activities, and maintain:

- Accreditation from the Louisiana Environmental Laboratory Accreditation Program (LELAP);
- Accreditation from the Stack Testing Accreditation Council (STAC) and the American Association for Laboratory Accreditation (A2LA) that our operations conform with the requirements of ASTM D 7036 as an Air Emission Testing Body (AETB).

These accreditations demonstrate that our systems for training, equipment maintenance and calibration, document control and project management will fully ensure that project objectives are achieved in a timely and efficient manner with a strict commitment to quality.



All calibrations are performed in accordance with the test Method(s) identified in this report. If a Method allows for more than one calibration approach, or if approved alternatives are available, the calibration documentation in the appendices specifies which approach was used. All measurement devices are calibrated or verified at set intervals against standards traceable to the National Institute of Standards and Technology (NIST). NIST traceability information is available upon request.

ASTM D7036-04 specifies that: *“AETBs shall have and shall apply procedures for estimating the uncertainty of measurement. Conformance with this section may be demonstrated by the use of approved test protocols for all tests. When such protocols are used, reference shall be made to published literature, when available, where estimates of uncertainty for test methods may be found.”* TRC conforms with this section by using approved test protocols for all tests.



6.0 TEST RESULTS SUMMARY

Hormel EQUI 72, EQUI 17 and EQUI 18 Room Air TSP Summary												
EQUI #	Room (Location)	Sample ID	TSP (ug)	TSP (mg)	Volume (L dry)	Volume (m ³)	PM Conc (mg/m ³)	Volume (dscf)	TSP (gr/dscf)	RM AirFlow cfm	TSP (lb/hr)	TSP (lb/hr) Avg
EQUI 72	Rendering (A)	TRC 89904	390	0.39	648	0.648	0.6	22.88	0.00026	96000	0.216	0.189
EQUI 72	Rendering (B)	TRC 89905	360	0.36	627	0.627	0.6	22.14	0.00025	96000	0.206	
EQUI 72	Rendering (C)	TRC 89906	250	0.25	629	0.629	0.4	22.21	0.00017	96000	0.143	
EQUI 17	Crax Grinding (A)	TRC 89907	1200	1.2	632	0.632	1.9	22.32	0.00083	18000	0.128	0.127
EQUI 17	Crax Grinding (B)	TRC 89908	1300	1.3	601	0.601	2.2	21.22	0.00095	18000	0.146	
EQUI 17	Crax Grinding (C)	TRC 89909	1000	1	631	0.631	1.6	22.28	0.00069	18000	0.107	
EQUI 18	Crax Storage (A)	TRC 89910	630	0.63	628	0.628	1.0	22.18	0.00044	6000	0.023	0.027
EQUI 18	Crax Storage (B)	TRC 89911	600	0.6	588	0.588	1.0	20.77	0.00045	6000	0.023	
EQUI 18	Crax Storage (C)	TRC 89912	1100	1.1	674	0.674	1.6	23.80	0.00071	6000	0.037	
EQUI 17	Truck Loadout (A)	TRC 89913	130	0.13	621	0.621	0.2	21.93	0.00009	6000	0.005	0.005
EQUI 17	Truck Loadout (B)	TRC 89914	250	0.25	628	0.628	0.4	22.18	0.00017	6000	0.009	
EQUI 17	Truck Loadout (C)	TRC 89915	53	0.053	617	0.617	0.1	21.79	0.00004	6000	0.002	

APPENDIX

580708 Project Participants

Hormel Foods Corporation Representative

Brian Diep

MPCA Observer

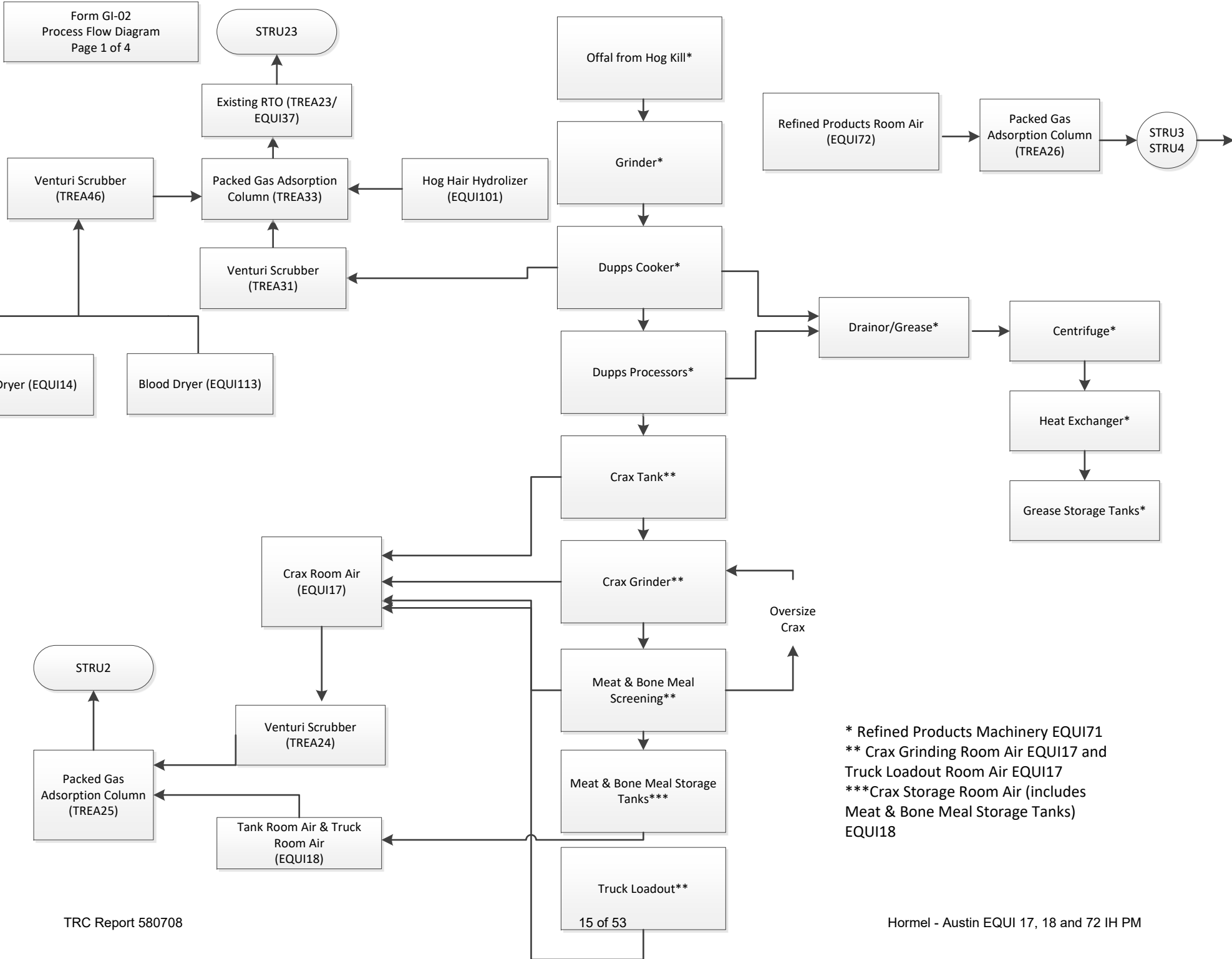
None

TRC Project Manager

David Wainio

TRC Test Crew

David Wainio





**Minnesota Pollution
Control Agency**

520 Lafayette Road
St. Paul, MN 55155-4194

Air Performance Test Form

Performance Test Report Completeness Criteria

The owner or operator of an emissions facility is responsible for submitting a complete test report as defined by Minn. R. 7017.2035. A test report may be rejected if it is deemed incomplete. As a result, this form is designed to ensure that your submittal is complete.

- 1) Facility name: Hormel Foods Corporation
- 2) Air quality facility ID number (first 8 digits of permit number): 09900002
- 3) Air quality file number: 3926
- 4) Facility location address: 500 14th Avenue Northeast
City: Austin State: MN Zip code: 55912
- 5) Date of performance test: 2-9-2024
- 6) Facility contact person (Individual who is designated to receive agency correspondence related to this test):
Mr./Ms: Mr. Brian Diep Phone: 507-434-6166
Title: Staff Environmental Engineer - Austin Fax: _____
Mailing address: 500 14th Avenue Northeast
City: Austin State: Minnesota Zip code: 55912
e-mail address: BLDiep@hormel.com

7) Test report checklist:

Cover:

☒	Name and location (address) of the emission facility	☒	Date(s) of the performance test
☒	Identification of emission unit(s) tested (i.e. GP002, EU031, SV028, or CE001 – Identification of the tested unit which has the emission limit as designated by your permit [source designators])	☒	Name and address of the testing company or agency
☒	AQ Facility ID Number (first 8 digits of permit number) and AQ File Number	☒	Facility contact person (individual designated to receive agency correspondence), and contact information including title, address, phone number, fax number, and email address

Certification:

☒	Signed and dated certification statements as defined by Minn R. 7017.2040 (An exact duplicate must be included in the CD-ROM copy of the test report)

Introduction:

☒	Reason for testing (i.e. Permit condition, notice of violation, etc., including permit number or name of other applicable compliance document, include correct Rule citation as outlined in permit)	☒	Pollutants tested (for each emission unit tested)
☒	Test location and type of process including source designators as outlined in permit	☒	Observers names including industry and agency observers
☒	Test date(s)	☒	Changes from test plan, problems experienced during test and any other relevant background information

Summary of Results: (see attached Table 1: Summary of Performance Test Results)

☒	Emission results expressed in the same units as the emission limits	☒	Description of collected samples
☒	Process data as related to determination of compliance (must include process rates, process parameters and pollution control equipment parameters that will be used to determine worst case operating conditions and pollution control equipment limitations during the test [see the relevant operator data forms at http://www.pca.state.mn.us/air/performancetest.html])	☐	Visible emissions summary if applicable
☒	Emission limits (as stated in your permit or applicable regulations) and applicable regulations citations as stated in your permit	☒	Discussion of errors, both real and apparent (If no errors occurred, verify by including statement)

Operating Parameters: (see the relevant operator data forms at <http://www.pca.state.mn.us/air/performancetest.html>)

*Note: Readings of discrete data from monitoring instruments must be recorded at least every 15 minutes, or other reasonable time interval as approved, during the test and strip charts or retrieved electronic data from continuous monitors must be included in the test report.

☒	Description of process and air pollution control devices including emission unit(s) tested (i.e. GP002, EU031, SV028, or CE001 – Identification of the tested unit which has the emission limit as designated by your permit [source designators])	☒	Process data and results, with example calculations (Process data must be collected and averaged for each test run and averaged for each series of tests for each unit tested. Process data must be displayed in the same units that were used to determine worst case operating conditions during the test. Process data must be easily understood by personnel not familiar with the process.)
☒	Process and control equipment flow diagrams	☐	Any specially required operation demonstrations

Maintenance:

☒	Description including dates of all maintenance and operational inspections, including major cleaning operations and replacement, repair, or modification of functional components of process or control equipment done in the month prior to the test (Include a statement if no maintenance was performed)

Sampling and Analysis Procedures:

☐	Sampling port location and dimensioned cross section showing all flow disturbances including fans, elbows, dampers, constrictions and pollution control equipment. Measurements should be included on diagram(s).	☒	Brief description of sampling procedures and analytical methods, with discussion of deviations from standard methods (include a statement if no deviations were made), including a statement of source methods used, but not including complete copies of reference methods
☐	Description of sampling point (including duct orientation, number of test ports, number of sampling points, distances to upstream and downstream flow disturbances)	☒	If a method other than a US EPA reference method was used: a statement of the detection limit and the level of accuracy of the method under the conditions of the test and at the concentration of air pollutant that is reported.
☐	Description of sampling train	☐	

Appendix:

☒	Complete results, including any fuel analysis, with example calculations, showing equations used and actual results in equation form on same or adjacent pages, using applicable equations shown in the reference method	☒	Test log (include test times, test interruptions and causes, and any other significant events related to the testing)

☒	Copies of raw field data	☐	Calibration procedures and results including pitot tube, nozzle, meter box, thermometer, barometer calibrations and any other equipment used to collect emissions samples. Instrument calibrations must be performed in accordance to the reference method used and calibration values must be displayed on the same data recorder from which emissions results are calculated.
☒	Laboratory report with chain of custody record	☒	Project participants and titles
☒	Raw production data, signed by plant official who can interpret, and be held accountable for the data	☒	A copy of the most recent version of the test plan and a copy of the commissioner's written approval of the test plan

Additional Information:

☐	Any other special requirement of the test method, test plan, applicable requirement or compliance document	☐	Any other information necessary to evaluate compliance with Minn R. 7017.2020 and 7017.2025 as requested by the commissioner.

REFERENCED TABLE

Table 1: Summary of Performance Test Results

1(a) Emission Unit Tested	1(b) Limitation Basis	1(c) Pollutant and Emission Limit	1(d) Test Result
EQUI 17 and EQUI 18	Title I Condition : Avoid major source under 40CFR 52.21 (b) (1) (i) and Minn. R. 7007.3000	PM, PM10, and PM2.5 <= 2.68 lb/hr	PM, PM10 and PM2.5 = 0.157 lb/hr
EQUI72	Title I Condition : Avoid major source under 40CFR 52.21 (b) (1) (i) and Minn. R. 7007.3000	PM, PM10 and <= 8.38 lb/hr	PM, PM10 and PM2.5 = 0.189 lb/hr
EXAMPLE Boiler No. 3 (EU 042/ SV 440)	Minn. Stat. 116.07, subd. 4a	Particulate (B): 12 lbs/hour	Particulate (B): 4.1 lbs/hour
		VOC: 13 lbs/hour as carbon	VOC: 2.3 lbs/hour as carbon
	Title I Condition: 40 CFR § 52.21(j) (BACT limit); Minn. R. 7007.3000	Carbon Monoxide: 0.090 lbs/MMBtu	Carbon Monoxide: 0.00078 lbs/MMBtu
		Volatile Organic Compounds: 0.0090 lbs/MMBtu	Volatile Organic Compounds: 0.00050 lbs/MMBtu
	Title I Condition: 40 CFR § 52.21(k) (modeling); Minn. R. 7007.3000	Carbon Monoxide: 33.6 lbs/hour	Carbon Monoxide: 0.26 lbs/hour

Table References:

(A) Filterable particulate matter as determined by U.S. Environmental Protection Agency (EPA) Method 5.

(B) Filterable plus organic condensable particulate matter as determined by EPA Method 5 and Method 202/ Minn. R. 7011.0725.

(C) Particles with an aerodynamic diameter less than or equal to a nominal ten micrometers (PM₁₀) as determined by EPA Methods 5 and 202.

Instructions for Completing this Form:

- 1) Facility Name -- Enter your facility name.
- 2) AQ Facility ID No. -- Fill in your Air Quality Facility ID Number. This is the first eight digits of the permit number for all new permits issued under the new operating permit program. In the future, this number will replace the AQ File Number in item 3) below.
- 3) AQ File No. -- Fill in your AQ File Number. This is the first group of characters in your current Air Emission Facility Permit. For example, for permit number 1899AB-93-OT-1, the AQ Facility ID number would be 1899AB. Can be found in the upper right hand corner of the Test Plan Approval.
- 4) Facility Location -- Fill in the facility's street address and the city and county where the facility is located.
- 5) Date of Performance Test -- Enter the date of your performance test.
- 6) Facility Contact Person -- Fill in the contact information for the person that the MPCA may contact regarding this performance test.
- 7) Test Report Check List: This checklist is to ensure that your test submittal includes all of the required information.

Reference Table:

- 1) Summary of Performance Test Results:
 - 1a) Emission Unit Tested: As designated by permit (i.e. EU, SV, etc.)

- 1b) Limitation Basis: All applicable rule citations from permit that apply to tested unit(s).
- 1c) Pollutant and Emission Limit: Pollutant to be tested and emission limit as outlined in permit
- 1d) Test Result: State test result.



**Minnesota Pollution
Control Agency**

520 Lafayette Road
St. Paul, MN 55155-4194

Air Performance Test Form

Operating Data Summary for Process Sources

Facility Information (please print)

Company name: Hormel Foods Corporation

Equipment ID No: EQUI 17

Test date(s): February 9, 2024

Equipment and Operating Data

- Process equipment description: Crax Grinding / Truck Loadout Room air treated at TREA 25 (Air Packed - Gas Adsorption column) then TREA 24 (Venturi Scrubber) and is sent to stack # STRU2
- Were the process and control equipment operated consistent with normal procedures? ☒ Yes ☐ No If no, explain
- Include copy of production records or instrumentation which indicates rate of production or operation of the equipment, i.e., units per hour, pounds per hour, pressure, air flow, etc.
- Date(s) and procedure(s) of last maintenance/cleaning within 6 months:
☒ Remains unchanged from information provided in test plan
- Process rate (amount of raw material or finished product per hour, wet or dry basis) while combusting (list fuel type(s) and ratios as appropriate):

Process Parameter: list type and units	Run 1	Run 2	Run 3	Average
Trucks Loaded				4 Trucks loaded in 5 hours
Fuel Input (list units):				
Heat Input (10 ⁶ British thermal units/hour)				

- Summarize control equipment operating data documented during testing. Values reported should reflect maximum, minimum, averages, or as approved in the test plan. (See test plan and approval letter)

Examples of APC equipment and parameters generally monitored. Monitor as in test plan and/or approval letter.

- **Scrubber** (list type of scrubber): ΔP (in. w.c.) and feed rate (gpm and psig)
- **Catalytic Incinerator**: ($^{\circ}F_{in}$, $^{\circ}F_{out}$) and Thermal Incinerator: ($^{\circ}F_{temperature}$)
- **Baghouse, Cyclone, and Multi-clone**: ΔP (in. w.c.)
- **ESP**: Number and identity of operating field(s)

APC and parameter monitored	Run 1	Run 2	Run 3	Average
32K Room Air Scrubber (TREA 25) flow gal per min				470.6 gpm
32K Room Air Scrubber (TREA 25) pressure dp in. H2O				2.4 in. H2O
24K Crax Room Venturi Scrubber (TREA 24) flow gal per min				164.4 gmp
24K Crax Room Venturi Scrubber (TREA 24) pressure dp in. H2O				6.2 in. H2O
List pollutant & averaging basis.--should reflect permit	Run 1	Run 1	Run 1	Average
Continuous Opacity Monitor(list hourly average):				
Monitor (list averaging basis):				
Monitor (list averaging basis):				

Abbreviations: APC=air pollution control
lbs.=pounds

gpm.=gallons per minute
psig=pressure per square inch gauge

in. w.c.=inches of water column
 ΔP =pressure drop

Note: This form provides only a summary of the operating conditions during the performance test. Additional and more detailed records are required to meet the requirements of Minn. R. 7017.2035, subp. 3. This form is to be submitted as part of the performance test report.



**Minnesota Pollution
Control Agency**

520 Lafayette Road
St. Paul, MN 55155-4194

Air Performance Test Form

Operating Data Summary for Process Sources

Facility Information (please print)

Company name: Hormel Foods Corporation

Equipment ID No: EQUI 18

Test date(s): February 9, 2024

Equipment and Operating Data

- Process equipment description: Crax Storage air treated at TREA 25 (Air Packed - Gas Adsorption column) and is sent to stack # STRU2
- Were the process and control equipment operated consistent with normal procedures? ☒ Yes ☐ No If no, explain _____
- Include copy of production records or instrumentation which indicates rate of production or operation of the equipment, i.e., units per hour, pounds per hour, pressure, air flow, etc.
- Date(s) and procedure(s) of last maintenance/cleaning within 6 months:
☒ Remains unchanged from information provided in test plan
- Process rate (amount of raw material or finished product per hour, wet or dry basis) while combusting (list fuel type(s) and ratios as appropriate): _____

Process Parameter: list type and units	Run 1	Run 2	Run 3	Average
Trucks Loaded				4 Trucks loaded in 5 hours
Fuel Input (list units):				
Heat Input (10 ⁶ British thermal units/hour)				

- Summarize control equipment operating data documented during testing. Values reported should reflect maximum, minimum, averages, or as approved in the test plan. (See test plan and approval letter)

Examples of APC equipment and parameters generally monitored. Monitor as in test plan and/or approval letter.

• Scrubber (list type of scrubber): ΔP (in. w.c.) and feed rate (gpm and psig) • Catalytic Incinerator : ($^{\circ}F_{in}$, $^{\circ}F_{out}$) and Thermal Incinerator: ($^{\circ}F_{temperature}$)		• Baghouse, Cyclone, and Multi-clone: ΔP (in. w.c.) • ESP: Number and identity of operating field(s)		
APC and parameter monitored	Run 1	Run 2	Run 3	Average
32K Room Air Scrubber (TREA 25) flow gal per min				470.6 gpm
32K Room Air Scrubber (TREA 25) pressure dp in. H2O				2.4 in. H2O
List pollutant & averaging basis.--should reflect permit	Run 1	Run 1	Run 1	Average
Continuous Opacity Monitor(list hourly average):				
Monitor (list averaging basis):				
Monitor (list averaging basis):				

Abbreviations: APC=air pollution control
lbs.=pounds

gpm.=gallons per minute
psig=pressure per square inch gauge

in. w.c.=inches of water column
 ΔP =pressure drop

Note: This form provides only a summary of the operating conditions during the performance test. Additional and more detailed records are required to meet the requirements of Minn. R. 7017.2035, subp. 3. This form is to be submitted as part of the performance test report.



**Minnesota Pollution
Control Agency**

520 Lafayette Road
St. Paul, MN 55155-4194

Air Performance Test Form

Operating Data Summary for Process Sources

Facility Information (please print)

Company name: Hormel Foods Corporation

Equipment ID No: EQUI 72

Test date(s): February 9, 2024

Equipment and Operating Data

- Process equipment description: Refined Products Room Air - air is treated at TREA 26 (Air Packed - Gas Adsorption column) and is sent to stack # STRU 3 and # STRU 4
- Were the process and control equipment operated consistent with normal procedures? ☒ Yes ☐ No If no, explain _____
- Include copy of production records or instrumentation which indicates rate of production or operation of the equipment, i.e., units per hour, pounds per hour, pressure, air flow, etc.
- Date(s) and procedure(s) of last maintenance/cleaning within 6 months:
☒ Remains unchanged from information provided in test plan
- Process rate (amount of raw material or finished product per hour, wet or dry basis) while combusting (list fuel type(s) and ratios as appropriate): _____

Process Parameter: list type and units	Run 1	Run 2	Run 3	Average
Dupps Dryer Evaporation Rate (Gal/hr)				4376 gal/hr
Fuel Input (list units):				N/A
Heat Input (10⁶ British thermal units/hour)				N/A

- Summarize control equipment operating data documented during testing. Values reported should reflect maximum, minimum, averages, or as approved in the test plan. (See test plan and approval letter)

Examples of APC equipment and parameters generally monitored. Monitor as in test plan and/or approval letter.

- **Scrubber** (list type of scrubber): ΔP (in. w.c.) and feed rate (gpm and psig)
- **Catalytic Incinerator** : ($^{\circ}F_{in}$, $^{\circ}F_{out}$) and Thermal Incinerator: ($^{\circ}F_{temperature}$)
- **Baghouse, Cyclone, and Multi-clone**: ΔP (in. w.c.)
- **ESP**: Number and identity of operating field(s)

APC and parameter monitored	Run 1	Run 2	Run 3	Average
100K Room Air Scrubber (TREA 26) flow gal per min				1137.6 gpm
100K Room Air Scrubber (TREA 26) pressure dp in. H2O				5.8 in. H2O
List pollutant & averaging basis.--should reflect permit	Run 1	Run 1	Run 1	Average
Continuous Opacity Monitor(list hourly average):				
Monitor (list averaging basis):				
Monitor (list averaging basis):				

Abbreviations: APC=air pollution control
lbs.=pounds

gpm.=gallons per minute
psig=pressure per square inch gauge

in. w.c.=inches of water column
 ΔP =pressure drop

Note: This form provides only a summary of the operating conditions during the performance test. Additional and more detailed records are required to meet the requirements of Minn. R. 7017.2035, subp. 3. This form is to be submitted as part of the performance test report.

PRODUCTION RATES			
		Filling	Finished Fat Tank
		Silo #1 Level	8600 Gallon
	2/20/2019	in lbs	% Full
Start	8:00	63,229	3.0
	8:15	67,874	7.9
	8:30	75,020	12.4
	8:45	82,609	15.7
	9:00	81,142	19.5
	9:15	41,493	24.2
	9:30	94,175	27.4
	9:45	95,475	32.5
	10:00	102,468	37.7
	10:15	107,420	42.9
	10:30	109,095	48.0
	10:45	114,038	53.2
	11:00	120,142	57.9
	11:15	122,309	63.2
	11:30	126,557	68.1
	11:45	133,432	72.5
	12:00	133,265	75.6
	12:15	140,362	78.7
	12:30	140,655	82.9
	12:45	143,680	87.6
END	13:00	144903	92
	TOTAL	81,674	89.0

Truck Scale Tickets				
	Start Fill	End Fill	certified Scale Tickets	
Truck 1	810	908	51,560	lbs
Truck 2	927	1024	51,380	lbs
Truck 3	1044	1141	51,080	lbs
Truck 4	1155	1310	50,880	lbs
Duration			5.00	hours
Total			204,905	lbs

CALCULATIONS						
Total lb Produced	81,674					
Total lb Loaded into Truck - Based off Scale Tickets	204,905	lbs	Based off of certified scale tickets			
Total lbs of GWG	54898	8600	Gallon Storage Tank			
		0.86	Specific Gravity of CWG - per Dean Steines			
		8.34	Lbs Water Per Gallon			
Total Trucks loaded	4.00	trucks				
Total Hours	4.92	hours				
Hourly Rate MBM	16,612	lbs/hr				
Hourly Rate CWG	11,166	lbs/hr				
% solids Average	40%		During the test, raw material solids were higher than on average. This can be seen			
Condensate Average	22755.32	lb/hr*	*as shown from trending data			
Condensate during Test	22078.95	lb/hr*	*as shown from trending data			
Test vs Average	0.970276401					
Reduction in moisture	3%		Reduction in moisture corellates to an increase in solids content			
% solids during test	43%					

Emptying Silo #2 Level in lbs	Truck #1		Truck #2		Truck #3		Truck #4					
	Time	Time	Time	Time	Time	Time	Time	Time	Time	Time	Time	Time
	Start Load	End Load	Start Load	End Load	Start Load	End Load	Start Load	End Load	Start Load	End Load	Start Load	End Load
220,574		810	908									
219,057												
216,479												
214,127												
211,938												
196,155												
182,034				927	1024							
171,782												
165,904												
161,337												
134,647												
129,986						1044	1141					
124,494												
125,162												
123,961												
98,175								1155	1310			
60,008												
53,491												
54,223												
54,408												
26,414												

Trucks must wait 10 minutes after loading before opening door
Must fill 4 trucks through duration of test

HORMEL FOODS CORPORATION - AUSTIN PLANT INDOOR AIR QUALITY TESTING MONITORING

Inputs are in red

Date: PM Total Test 1 2.09.24

Dupps Cooker (Rendering Machinery) Evaporation rate

	16,612	lbs production	Meat and Bone Meal
+	11,166	lbs production	Choice White Grease
=	27,778	Total lbs production	Total Dupps Production (Rendering Machinery)
x	99%	% solids product	Solids content of finished product
=	27,500	lbs solids	
÷	43%	% solids in raw material	
=	63,954	lbs raw materials	
-	27,500	Total lbs solids	
=	36,454	lbs water	
÷	1.000	hours/day	Hours of production in 24 hour period
=	36,454	lbs water/hour	lbs water/hour Dupps cooker evaporates
÷	8.33	lbs/gal water	Conversion
=	4,376	gal/hour	Dupps gal/hour evaporated
	90%	Minimum Testing Capacity	
	3,529.8	gal/hour	Minimum Dupps gal/hour evaporated

2-9-24

Indoor Air Quality Testing CE Equipment Monitoring

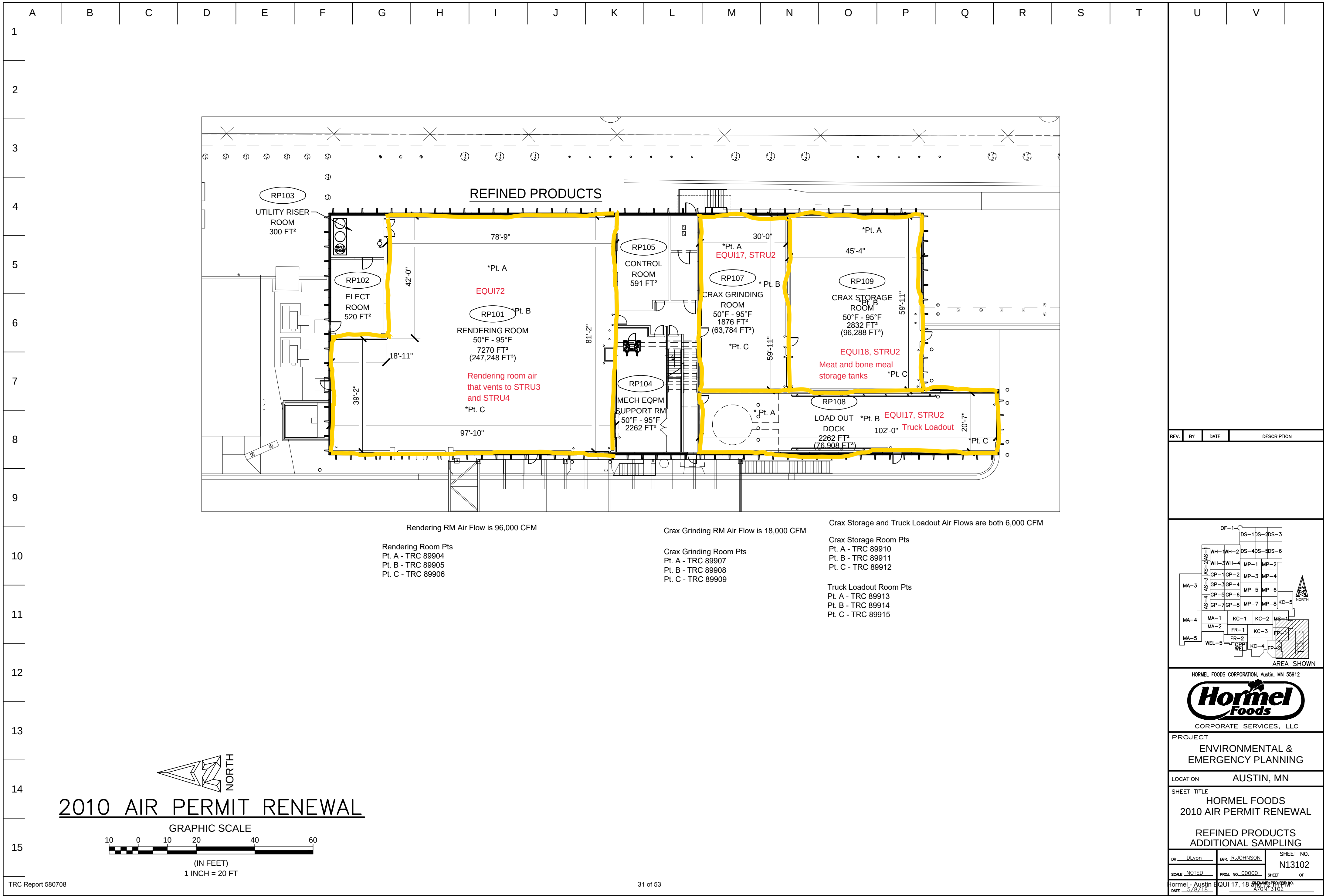
Start Time: 8:00 AM

Date	Time	100K Room Air Scrubber (TREA 26)		32K Truck Loadout Room Air Scrubber (TREA25)		24K Crax Room Venturi Scrubber (TREA 24)		All MAU's in operation?
		Flow	Differential Pressure	Flow	Differential Pressure	Flow	Differential Pressure	
		≥ 1100 GPM	≥ 2.2 inches of water	≥ 350 GPM	≥ 2.2 inches of water	≥ 110 GPM	≥ 5.0	
2.9.24	8:00 AM	1137	5.75"	470	2.2	104	5.8	Y
	8:15 AM	1136	5.75"	470.2	2.4	104.3	6.2	Y
	8:30 AM	1137	5.8"	470.4	2.5"	104.4	6.1"	Y
	8:45 AM	1139	5.8"	470.6	2.4"	104.4	6.1"	Y
	9:00 AM	1138	5.7"	471.0	2.4"	104.5	6.2"	Y
	9:15 AM	1137	5.8"	470.7	2.4"	104.6	6.2"	Y
	9:30 AM	1131	5.8"	471.1	2.4"	104.5	6.4"	Y
	9:45 AM	1138	5.7"	470.5	2.4"	104.4	6.2"	Y
	10:00 AM	1138	5.8"	470.7	2.4"	104.4	6.3"	Y
	10:15 AM	1137	5.7"	470.1	2.4"	104.4	6.2"	Y
	10:30 AM	1138	5.8"	471	2.4"	104.7	6.3"	Y
	10:45 AM	1137	5.7"	470.7	2.4"	104.2	6.3"	Y
	11:00 PM	1136	5.7"	470.7	2.4"	104.2	6.2"	Y
	11:15 PM	1137	5.6"	470.4	2.4"	104.5	6.3"	Y
	11:30 PM	1137	5.7	470.8	2.3"	104.5	6.3"	Y
	11:45 PM	1187	6"	470.2	2.3"	104.7	6.2"	Y
	12:00 PM	1138	5.7"	470.2	2.4"	104.5	6.3"	Y
	12:15 PM	1139	5.8"	470.5	2.3"	104.4	6.1"	Y
	12:30 PM	1137	5.7"	471.3	2.4"	104.2	6.2"	Y
	12:45 PM	1139	5.8"	470.4	2.4"	104.6	6.3"	Y
	1:00 PM	1138	6.2"	470.5	2.4"	104.6	6.2"	Y

11:25
100K trip
reset
12:11
Drive
Fault

				0800		0810		0800		Truck #1		Truck #2		Truck #3		Truck #4	
				Filling	Emptying	Finished Fat Tank											
				Silo #1 Level	Silo #2 Level												
				in lbs	in lbs	% Full				Time	Time	Time	Time	Time	Time	Time	Time
				Duration						Start Load	End Load	Start Load	End Load	Start Load	End Load	Start Load	End Load
Start	0:00	63229	220574	3						8310	6958	6927	1024	1044	1141	1155	1310
	0:15	67874	219051	7.9													
	0:30	75020	216479	12.4													
	0:45	82609	214127	15.7													
	1:00	81142	211938	19.5													
	1:15	91493	196155	24.2													
	1:30	94175	182034	27.4													
	1:45	95475	171782	32.5													
	2:00	102468	165904	37.7													
	2:15	107420	161337	42.9													
	2:30	109095	134647	48													
	2:45	114038	129986	53.2													
	3:00	120142	124191	57.9													
	3:15	122309	125162	63.2													
	3:30	126557	123961	68.1													
	3:45	133432	98175	72.5													
End	4:00	133465	60008	75.6													
	4:15	140362	53491	78.7													
	4:30	140655	54223	82.9													
	4:45	143680	54408	87.6													
	5:00	144903	52895	92													
Total lb Produced				0	26141	Trucks must wait 10 minutes after loading before opening door											
Total lb Loaded into Truck				0		Must fill 4 trucks through duration of test											
Total lbs of GWG				0	* confirm 70000 lbs	Must be running at 11,000 lb/hr MBM and 11,000 lb/hr CWG											
Total Trucks loaded				0													

How many lbs of MBM in each truck?



Hormel IH Field Notes:

2/9/2024

Location : Rendering Room

LOC Pts	Pump Used	Pre Flow Checks			Avg	Post Flow Checks			Avg	% Diff Pre/Post	Filter Used	TRC ID	Tare (g)		L/Min	Time min	Volume (L)
A	30	2.132	2.15	2.123	2.135	2.185	2.185	2.19	2.186667	2.420	228420737	TRC 89904	0.013878	Avg Flow	2.16	300	648.25
B	34	2.069	2.034	2.03	2.044	2.145	2.137	2.125	2.135667	4.468	228420740	TRC 89905	0.012424	Avg Flow	2.09	300	627.00
C	37	2.077	2.062	2.057	2.065	2.129	2.131	2.132	2.130667	3.163	228420748	TRC 89906	0.01219	Avg Flow	2.10	300	629.40

Location Notes : A - 9.5 ft up, 64.5 ft from west wall, 40 ft from south wall, 57.5 ft from north wall, 15.5 ft from east wall
 B - 17.5 ft up, 39 ft from west wall, 35 ft from south wall, 62.5 ft from north wall, 42 ft from east wall
 C - 5.5 ft up, 10 ft from west wall, 40 ft from south wall, 57.5 ft from north wall, 71.5 ft from east wall

Location : Crax Grinding Room

LOC Pts	Pump Used	Pre Flow Checks			Avg	Post Flow Checks			Avg	% Diff Pre/Post	Filter Used	TRC ID	Tare (g)		L/Min	Time min	Volume (L)
A	39	2.087	2.098	2.067	2.084	2.131	2.13	2.129	2.13	2.207	228420733	TRC 89907	0.015572	Avg Flow	2.11	300	632.10
B	40	1.962	2.011	2.008	1.994	2.011	2.013	2.022	2.015333	1.087	228420746	TRC 89908	0.013686	Avg Flow	2.00	300	601.35
C	42	2.081	2.089	2.077	2.082	2.125	2.125	2.125	2.125	2.049	228420747	TRC 89909	0.01246	Avg Flow	2.10	300	631.10

Location Notes : A - 6 ft up, 50 ft. from west wall, 16 ft from south wall, 13.5 ft from north wall, 10 ft. from east wall
 B - 12 ft. up, 30 ft. from west wall, 7 ft. from south wall, 22 ft. from north wall, 29 ft. from east wall
 C - 19.5 ft up, 9 ft. from west wall, 18.5 ft from south wall, 10.5 ft from north wall, 50 ft. from east wall

Location : Crax Storage Room

LOC Pts	Pump Used	Pre Flow Checks			Avg	Post Flow Checks			Avg	% Diff Pre/Post	Filter Used	TRC ID	Tare (g)		L/Min	Time min	Volume (L)
A	45	2.058	2.066	2.059	2.061	2.125	2.125	2.126	2.125333	3.121	228420720	TRC 89910	0.014393	Avg Flow	2.09	300	627.95
B	46	1.953	1.951	1.951	1.952	1.968	1.971	1.97	1.969667	0.922	228420724	TRC 89911	0.013648	Avg Flow	1.96	300	588.20
C	47	2.21	2.221	2.221	2.217	2.276	2.278	2.271	2.275	2.601	228420751	TRC 89912	0.013126	Avg Flow	2.25	300	673.85

Location Notes : A - 10.5 ft. up, 56.5 ft. from west wall, 11 ft. from south wall, 33.5 ft from north wall, 4 ft. from east wall
 B - 24 ft. up, 30 ft. from west wall, 19 ft. from south wall, 26.5 ft. from north wall, 31 ft. from east wall
 C - 5 ft. up, 5 ft. from west wall, 5 ft. from south wall, 35 ft. from north wall, 55 ft. from east wall

Location : Truck Loadout

LOC Pts	Pump Used	Pre Flow Checks			Avg	Post Flow Checks			Avg	% Diff Pre/Post	Filter Used	TRC ID	Tare (g)		L/Min	Time min	Volume (L)
A	48	2.028	2.012	2.026	2.022	2.121	2.121	2.121	2.121	4.896	228420719	TRC 89913	0.013247	Avg Flow	2.07	300	621.45
B	49	2.067	2.066	2.062	2.065	2.12	2.12	2.119	2.119667	2.647	228420731	TRC 89914	0.014476	Avg Flow	2.09	300	627.70
C	50	1.996	2.004	2.016	2.005	2.11	2.108	2.106	2.108	5.120	228420760	TRC 89915	0.013844	Avg Flow	2.06	300	617.00

Location Notes : A - 10 ft. up, 13 ft. from west wall, 83 ft. from south wall, 18 ft. from north wall, 7.5 ft. from east wall
 B - 17 ft. up, 7 ft. from west wall, 49 ft. from south wall, 51.5 ft. from north wall, 13 ft. from east wall
 C - 6 ft. up, 4 ft. from west wall, 22 ft. from south wall, 80.5 ft. from north wall, 16.5 ft. from east wall

Blank Filters sent in	TRC ID	Tare (g)
Blank 1	228420743 TRC 89916	0.012532
Blank 2	228420759 TRC 89917	0.012248

Certificate of Calibration

A.P. BUCK, INC. mini-BUCK CALIBRATOR™

Serial No: 030517 Date Calibrated: 9-13-23 Next Calibration due date: 9-13-24

Model No: ☐ M-1 ☐ M-5 ☒ M-30 ☐ M-30B

Applicable Measurement Standards

Description	MFR.	Model	Serial #	N. I. S. T.
☐ 100ml Burette	Kimble	17027F-100	1219	SPECIAL17027F
☐ 1000ml Burette	Kimble	17081	0002	ASTM E542
☐ 1000ml Burette	Kimble	17081	0003	ASTM E542
☐ 1000ml Burette	Kimble	17081	1003	ASTM E542
☒ 1000ml Burette	Kimble	17081	1004	ASTM E542
☐ 1000ml Burette	Kimble	17081	2087	ASTM E542
☐ Stopwatch	Fisher	14-649,5	130029257	EL015
☒ Stopwatch	Fisher	14-649,5	51096701	EL015

AMBIENT CONDITIONS: Temperature $74 \pm 3^{\circ}\text{F}$ Relative Humidity $50 \pm 10\%$

This instrument as received on 9-13-23 at A.P. Buck Inc.'s facility was found to be:

- ☐ Unable to calibrate as received due to condition of unit .
☒ Within specification of $\pm 0.5\%$ of the display reading .
☐ Not in specification by _____ % High. _____ % Low of the display

The instrument listed above has been adjusted to nominal, utilizing a 1,000 ml burette and an electronic digital stopwatch, which are traceable to the National Institute of Standards & Technology (NIST). The accuracy of the instruments used to perform calibration is greater than 4 to 1. The A.P. Buck, Inc. Calibration system is in compliance with ANSI Z540-1 and IEC guide 25.

☒ Unit within specifications after calibration.

Calibration was conducted with A.P. Buck, Inc. Calibration Procedure APB-1 Rev. 6.2 with a constant flow pump using the Bubble-meter method. A.P. Buck, Inc. guarantees the accuracy and repeatability of $\pm 0.5\%$ for any display reading as described under the instruction manual "Principles of Operation". Responsibilities shall in no event, nor for any cause whatsoever, exceed the price charged for the calibration represented by this certification.

QA APPROVAL BY: *Fernando*

Information contained in this document should not be reproduced in any form without the written consent of A.P. Buck Inc. It is for reference only and cannot be used as a form of endorsement by any private or governmental regulatory body.

A.P. BUCK, INC.
7101 Presidents Drive, Suite 110
Orlando, FL 32809
Phone: 407-851-8602 · Fax: 407-851-8910



CCAR-001 REV-06 11/1/2020



**Wisconsin Occupational
Health Laboratory**

WISCONSIN STATE LABORATORY OF HYGIENE
UNIVERSITY OF WISCONSIN-MADISON

2601 Agriculture Drive
Madison, WI 53718
Phone: (800) 446-0403
Web: wohl-lab.org
AIHA LAP, LLC Laboratory ID: LAP-101070

DAVID WAINIO
TRC ENVIRONMENTAL
CORPORATION
21 GROFFOM RD N
WINDSOR, CT 06095

Lab Workorder ID 721247
Visit/Project ID HORMEL IH
PO C212787
Received February 12, 2024
Reported February 14, 2024
Report ID 11579561
Previous Report IDs 11574054

Dear DAVID WAINIO:

Enclosed are the analytical results for sample(s) received by the laboratory on February 12, 2024. All samples/specimens received by the laboratory were acceptable for testing. Sample results were not blank corrected, and all quality control met laboratory standards unless otherwise noted in the report narrative. All results apply to the samples as received and reported concentrations were calculated with information supplied by the sample submitter.

Please contact the lab if you have any questions concerning this report.

Sincerely,

Steve Strebel, Laboratory Director

Analyst - AARON HIRSCH



Final Report

Lab ID: 721247001	Sample ID: TRC 89904	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RE REPORTED TO ADD PO

RESULTS

Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	648 L	53 ug			390 ug	0.60 mg/m3	

Lab ID: 721247002	Sample ID: TRC 89905	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS

Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	627 L	53 ug			360 ug	0.57 mg/m3	

Lab ID: 721247003	Sample ID: TRC 89906	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS

Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	629 L	53 ug			250 ug	0.40 mg/m3	



Final Report

Lab ID: 721247004	Sample ID: TRC 89907	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	632 L	53 ug			1200 ug	1.9 mg/m3	

Lab ID: 721247005	Sample ID: TRC 89908	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	601 L	53 ug			1300 ug	2.2 mg/m3	

Lab ID: 721247006	Sample ID: TRC 89909	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	631 L	53 ug			1000 ug	1.6 mg/m3	



Final Report

Lab ID: 721247007	Sample ID: TRC 89910	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	628 L	53 ug			630 ug	1.0 mg/m3	

Lab ID: 721247008	Sample ID: TRC 89911	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	588 L	53 ug			600 ug	1.0 mg/m3	

Lab ID: 721247009	Sample ID: TRC 89912	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	674 L	53 ug			1100 ug	1.6 mg/m3	



Final Report

Lab ID: 721247010	Sample ID: TRC 89913	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	621 L	53 ug			130 ug	0.21 mg/m3	

Lab ID: 721247011	Sample ID: TRC 89914	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	628 L	53 ug			250 ug	0.40 mg/m3	

Lab ID: 721247012	Sample ID: TRC 89915	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time: 300 M

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024	617 L	53 ug			<53 ug	<0.086 mg/m3	



Final Report

Lab ID: 721247013	Sample ID: TRC 89916	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time:

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024		53 ug			<53 ug	n/a	

Lab ID: 721247014	Sample ID: TRC 89917	Media: PVC filter (Weighed or unweighed)
Sampling Date: 2/9/2024	Matrix: Air	Sampled Time:

RESULTS									
Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Total Dust	NIOSH 0500	2/12/2024		53 ug			<53 ug	n/a	

Abbreviations:

mg = milligrams ppm or ppmv = parts per million /m3 = per cubic meter
ug = micrograms ppb or ppbv = parts per billion ng = nanograms
< Less Than. The analyte, if present, is at a level too low to be accurately quantitated by the method used

Displayed values on report have been rounded to 2 significant figures. Please contact the laboratory if you have any questions regarding our result calculation or rounding. All samples were received by the laboratory in acceptable condition unless otherwise noted.

The results in this report apply only to the samples, specifically listed above, and tested at the Wisconsin Occupational Health Laboratory

This report is not to be reproduced except in its entirety

End of Analytical Report

WISCONSIN OCCUPATIONAL HEALTH LABORATORY (WOHL) SAMPLE SUBMISSION FORM

Bill To TRC
Accounts Payable
21 Griffin Road N.
Windsor, CT 06095
 Project Hormel IH
 P.O. # See Instructions

WOHL COMP# _____
 Phone # 651-249-8776
 FAX # _____
 Email Address dwainio@trccompanies.com
 Date Sampled 02/09/2024

Send Results To ATTN:
 David Wainio
 email : dwainio@trccompanies.com

02/12/24 11:24
 41
 721247

☐ RUSH ☐ PRIORITY ☒ NORMAL
 { must be prearranged }

SPECIAL INSTRUCTIONS
 Send a job confirmation email to David Wainio with pricing of analysis. We will generate a PO from that.

Invoice emails portal:
<https://vendorportal.trccompanies.com>

02/12/24 11:24
 TRC 89904



721247001

GROUP SAMPLES BY MEDIA USED AND ANALYSIS REQUESTED. ♦

02/12/24 11:24
 TRC 89905



721247002

02/12/24 11:24
 TRC 89906



721247003

02/12/24 11:24
 TRC 89907



721247004

02/12/24 11:24
 TRC 89908



721247005

02/12/24 11:24
 TRC 89909



721247006

CUSTOMER FIELD #	SAMPLE MEDIA	WIPE SAMPLES	FOR AIR SAMPLES ONLY					ANALYSIS REQUEST
		SIZE OF AREA WIPED EX: 2 IN x 2 IN	TIME ON	TIME OFF	TOTAL TIME (MINS)	FLOW RATE (L/MIN)	VOLUME (LITERS)	
TRC 89904	Filter	N/A	8:00	13:00	300	2.16	648.25	Total Dust
TRC 89905	Filter	N/A	8:01	13:01	300	2.09	627.00	Total Dust
TRC 89906	Filter	N/A	7:59	12:59	300	2.10	629.40	Total Dust
TRC 89907	Filter	N/A	8:02	13:02	300	2.11	632.10	Total Dust
TRC 89908	Filter	N/A	8:02	13:02	300	2.00	601.35	Total Dust
TRC 89909	Filter	N/A	8:03	13:03	300	2.10	631.10	Total Dust

STUDY: Relinquished
 & Other Shippers

ational Health Lab
 Drive
 18

US Postal Service

Wisconsin Occupational Health Lab
 PO Box 7996
 Madison, WI 53707-7996

Date 2-9-24
 Phone 608 224-6210
 800 446-0403
 FAX 608 224-6213

Received Patti A. Tatler
Sampling Questions
WOHLsampling@mail.slh.wisc.edu
Web Page/Order Media
<http://www.slh.wisc.edu/wohl>

SAMPLE CONDITION

_____ OK

_____ NOT OK
 See Sample Receipt Record

REC'D FEB 12 2024

WISCONSIN OCCUPATIONAL HEALTH LABORATORY (WOHL) SAMPLE SUBMISSION FORM

Bill To TRC
Accounts Payable
21 Griffin Road N.
Windsor, CT 06095
 Project Hormel IH
 P.O. # See Instructions

WOHL COMP# _____
 Phone # 651-249-8776
 FAX # _____
 Email Address dwainio@trccompanies.com
 Date Sampled 02/09/2024

Send Results To ATTN:
 David Wainio
 email : dwainio@trccompanies.com

SPECIAL INSTRUCTIONS

Send a job confirmation email to David Wainio with pricing of analysis. We will generate a PO from that.

Invoice emails portal:
<https://vendorportal.trccompanies.com>

T 02/12/24 11:24
 TRC 89910

☐ RUSH ☐ PRIORITY ☒ NORMAL
 { must be prearranged }



721247007

UP SAMPLES BY MEDIA USED AND ANALYSIS REQUESTED. ♦

02/12/24 11:24
 TRC 89911



721247008

02/12/24 11:24
 TRC 89912



721247009

02/12/24 11:24
 TRC 89913



721247010

02/12/24 11:24
 TRC 89914



721247011

02/12/24 11:24
 TRC 89915



721247012

02/12/24 11:24
 TRC 89916



721247013

CUSTOMER FIELD #	SAMPLE MEDIA	WIPE SAMPLES	FOR AIR SAMPLES ONLY					ANALYSIS REQUEST
		SIZE OF AREA WIPED EX: 2 IN x 2 IN	TIME ON	TIME OFF	TOTAL TIME (MINS)	FLOW RATE (L/MIN)	VOLUME (LITERS)	
TRC 89910	Filter	N/A	8:05	13:05	300	2.09	627.95	Total Dust
TRC 89911	Filter	N/A	8:05	13:05	300	1.96	588.20	Total Dust
TRC 89912	Filter	N/A	8:04	13:04	300	2.25	673.85	Total Dust
TRC 89913	Filter	N/A	8:07	13:07	300	2.07	621.45	Total Dust
TRC 89914	Filter	N/A	8:08	13:08	300	2.09	627.70	Total Dust
TRC 89915	Filter	N/A	8:07	13:07	300	2.06	617.00	Total Dust
TRC 89916	Filler	N/A	N/A	NA	0	0	0	Total Dust (Method Blank)
TRC 89917	Filler	N/A	N/A	N/A	0	0	0	Total Dust (Method Blank)

STODY: Relinquished

Postal Service

Date

Received

Patti A. Tatlock REC'D FEB 12 2024

02/12/24 11:24
 TRC 89916



721247013

02/12/24 11:24
 TRC 89917



721247014

sin Occupational Health Lab
 7996
 WI 53707-7996

Phone 608 224-6210
 800 446-0403
 FAX 608 224-6213

Sampling Questions
WOHLsampling@mail.slh.wisc.edu
 Web Page/Order Media
<http://www.slh.wisc.edu/wohl>

SAMPLE CONDITION

OK

NOT OK
 See Sample Receipt Record

Example Calculations - PM Concentrations and Emissions Rates

Conversion Factors Used :

$$1 \text{ ug to } 1 \text{ mg} = \text{ug} / 1000$$

$$1 \text{ L to } 1 \text{ m}^3 = \text{L} / 1000$$

$$1 \text{ m}^3 \text{ to cf} = \text{m}^3 * 35.315$$

$$1 \text{ mg to grains} = \text{mg} * 0.01543$$

PM Concentration :

$$\text{mg/m}^3 = \text{PM weight (mg)} / ((\text{volume (L)} / 1000))$$

Example - Rendering Room Location A:

Lab weight gain : 390 ug

$$\text{Lab weight gain as mg} = 390 \text{ ug} / 1000 = 0.390 \text{ mg}$$

Volume for Rendering Room Location A :

A Volume (dry L) - 648 L

$$\text{A Volume (dry m}^3) = 648 \text{ L} / 1000 = 0.648 \text{ m}^3$$

$$\text{A Volume (dscf)} = 0.648 \text{ m}^3 * 35.315 = 22.88 \text{ dscf}$$

PM Concentration :

$$\text{gr/dscf} = \text{mg} * 0.01543 / \text{Volume (dscf)}$$

Example - Rendering Room Location A:

$$\text{gr} / \text{dscf} = 0.390 * 0.01543 / 22.88 = 0.000263 \text{ gr/dscf}$$

PM Emission Rate (lb/hr)

$$\text{lb/hr} = \text{PM conc (gr/dscf)} * \text{Room Flow (cfm)} * 60 / 7000$$

$$7000 = \text{gr} / \text{lb}$$

Example - Rendering Room Location A:

$$\text{lb/hr} = 0.000263 * 96000 * 60 / 7000 = 0.216 \text{ lb/hr}$$

Diep_Brian_L

From: Settle, Rebecca (She/Her/Hers) (MPCA) <Rebecca.Settle@state.mn.us>
Sent: Thursday, February 1, 2024 3:48 PM
To: Diep_Brian_L
Cc: Provow, Ross (MPCA); Espe_Brandon_T; Rehaume_Larry_M
Subject: [EXTERNAL] TPAL Hormel Foods Indoor PM EQUIs 17 18 72 FEB24

Follow Up Flag: Follow up
Flag Status: Flagged

You don't often get email from rebecca.settle@state.mn.us. [Learn why this is important](#)

Include a copy of the Test Plan and this Test Plan Approval Email in the Final Report

Test Plan Approval Letter

Facility: Hormel Foods Corporation – Austin Plant
Address: 500 14th Ave NE, Austin MN, 55912
Contact Person/Phone: Brian Diep/507-434-6166 (ext. 6166)
Test Date: February 8-9, 2024
Test Plan Submittal Date: January 10, 2024
Pretest Meeting Date: February 1, 2024
Units to be Tested: Crax Grinding/Truck Loadout Room (EQUI 17), Crax Storage Room Air (EQUI 18), Rendering Room Air (EQUI 72)
Agency Interest ID: 3926

Your test plan has been approved by the Minnesota Pollution Control Agency (MPCA) as follows:

Test plan approved with the following provisions:

1. Include in the final test report all process and pollution control equipment operating data collected at 15 minute intervals (minimum) and averaged for each test run and test. This information must be clear and easily understood by individuals not familiar with the process. All information needed to show process operating rate and pollution control equipment compliant operation must be included. A link to reporting forms can be found below.
2. An acceptable report must comply with Minn. Rule 7017.2035 PERFORMANCE TEST REPORTING REQUIREMENTS. Use of the PTRCC form will help assure that a complete test report is submitted to the MPCA.
3. The test schedule may be adjusted due to operations, weather, or other extenuating circumstances for individual units listed as part of this approval. Please contact the MPCA if tests will need to be completed outside of the time listed on the test plans.
4. Testing to be within 90% of max operating rate, with at least 4 trucks loaded during the testing for EQUIs 17 and 18. Testing for EQUI 72 will be within 90% of max operating rate with a range of 3,200-4,400 gallons of water evaporated per hour.

In the event of a failure:

Please be aware that enforcement action will be taken for performance test failures, indicating emissions above applicable limits, which can include a monetary penalty. Upon discovery of the test failure, the Regulated Party must take immediate action to reduce emissions to remain in compliance with its permitted limits. The actions taken should be documented, as they will become part of the record of corrective actions. If a monetary penalty is required,

the amount of time from the date of the failed test to the date of the passed test, or other compliance demonstration, will be taken into consideration. It is in the Regulated Party's best interest to demonstrate compliance with its permitted emissions limits through a passed retest or other compliance demonstration as soon as possible after a failed test.

All periods of noncompliance with emission limits must be reported to the MPCA, this includes any periods of engineering tests. The requirements outlined under the Notification of Deviations Endangering Human Health or the Environment, Minn. R. 7019.1000, subp. 1., shall be followed. This information should also be clearly stated and readily available in the executive summary of the test report.

Submit electronic copies of test report to SubmitStackTest.PCA@state.mn.us

Additional information regarding submittal: <https://www.pca.state.mn.us/sites/default/files/aq1-39.pdf>

Reporting forms available at: <http://www.pca.state.mn.us/jsrid16>

Best,

Rebecca D. Settle (she/her) | Environmental Specialist

Minnesota Pollution Control Agency (MPCA)

Industrial Division

520 Lafayette Road No. | St. Paul, Minnesota | 55155-4194

651-757-2582

Email | Rebecca.Settle@state.mn.us



Our mission is to protect and improve the environment and human health.

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From: Diep_Brian_L <BLDiep@hormel.com>

Sent: Thursday, January 25, 2024 1:52 PM

To: PCA, SubmitStackTest (MPCA) <SubmitStackTest.PCA@state.mn.us>; Stock, Curtis (MPCA) <curtis.stock@state.mn.us>; Provow, Ross (MPCA) <Ross.Provow@state.mn.us>; 'marin.ryan@state.mn.us' <marin.ryan@state.mn.us>

Subject: RE: Hormel Foods - Austin Plant Test Plan Submittal

Some people who received this message don't often get email from bldiep@hormel.com. [Learn why this is important](#)

This message may be from an external email source.

Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

Hi,

Just making sure this was sent out to the proper channels.

Thanks,

Brian Diep

Staff Environmental Engineer - Austin

Work: (507) 434-6166 (ext. 6166)

Mobile: (773)-512-1613

Hormel Foods Corp



From: Diep_Brian_L

Sent: Wednesday, January 10, 2024 5:02 PM

To: SubmitStackTest@state.mn.us; curtis.stock@state.mn.us; ross.provow@state.mn.us; marin.ryan@state.mn.us

Cc: Espe_Brandon_T <BTESpe@Hormel.com>; Rehaume_Larry_M <lmrehaume@hormel.com>

Subject: Hormel Foods - Austin Plant Test Plan Submittal

Hello,

Please find attached to this email the submission of a test plan for the Hormel Foods – Austin Plant as a 30 day notice prior to beginning of testing, as required by Permit No. 09900002-104 (the latest iteration of this permit as of writing this email). If there are any questions regarding this test plan, please reach me via email or at the following numbers listed below.

Thank you,

Brian Diep

Staff Environmental Engineer - Austin

Work: (507) 434-6166 (ext. 6166)

Mobile: (773)-512-1613

Hormel Foods Corp



BE AWARE: This email originates from outside of the Hormel Foods network. Please proceed cautiously before you click any links, open any attachments, or provide any information or requested action.

Test Plan for Total Suspended Particulate Matter (TSP) Performance Test

Part I: General Information

1. Name and address of emission facility: Hormel Foods Corporation – Austin Plant
500 14th Ave NE
Austin MN, 55912
 2. Emission facility contact person: Brian Diep
Staff Environmental Engineer - Austin
507-434-6166 (ext 6166)
 3. Permit number(s): Air Emission Permit 09900002-104
 4. Reason emission points are to be tested: To quantify TSP emissions for rooms EQUI 72, EQUI 18 and EQUI 17 during worst case conditions as required by the air permit.
 5. Drawing of emission points: See Attachments
 6. Physical location of emission unit: Same as above
Stationary
 7. Independent Testing Company Contact: David Wainio
Emissions Testing Group Manager
- Name of Independent Testing Company: TRC
1301 Corporate Center Drive – Suite 177
Eagan, MN 55121
- Telephone Number: (651) 686-8700

Part II. Testing Requirements

1. The following is a description of each Pollutant to be tested, the applicable emission limits, and the applicable rule or regulation for each emission limit:

EQUI #	Pollutant	Emission Limit	Applicable Rule or Regulation	Sampling Method	Length of Test Run
EQUI 17 and 18	TSP*	2.68 lb/hr	EPA 40 CFR 52.21 (b)(1)(i) and Minn. R. 7007.3000, Minn. Rules 7017.2025 subpart 1.	NIOSH Method 0501	Not less than 4 hours or exceed 5 hours
EQUI 72		8.38 lb/hr	MN air permit 09900002-104		

*TSP is defined as represent filterable PM, Filterable PM10 and Filterable PM2.5 emissions.

Operating conditions of sources to be tested - Source operating parameters required by the permit are presented in Part III.

Part III. Operating Conditions

1. Process to be tested:

EQUI#	Process Equipment Description	Parameter	Operating Conditions During Test	Control Equipment Description
EQUI 17	Crax Grinding / Truck Loadout Room	Truck Load Out operations (minimum # of trucks)	At least 4 trucks must be loaded during the testing.	Venturi Scrubber and adsorption column
EQUI 18	Crax Storage Room Air			
EQUI 72	Rendering Room Air	Gal/hr Water Evaporated	3,200 – 4,400 gal/hr	Adsorption column

2. The following are the normal ranges of process operating rates:

EQUI #	Normal Range of Process Operating Rates
EQUI 17	The Crax Grinding and Truck Loadout rooms make up EQUI 17. The emissions in the Load out Dock are intermittent so at least 4 trucks will be loaded during the indoor air quality sampling.
EQUI 18	The Crax Storage Room makes up EQUI 18. At least 4 trucks will be loaded during the indoor air quality sampling
EQUI 72	The refined products room (Dupps Processing room) is EQUI 72. Normal operation is considered approximately 3,200-4,500 gal/hr evaporated.

3. The following is a description of how each piece of process equipment will be monitored during the test:

EQUI #	Process Equipment Description	Description of How This Will Be Monitored During Testing
EQUI 17	Crax Grinding / Truck Loadout Room	Plant operations will begin preparing the process for the target operating conditions the morning of the test day. Prior to testing, the test team will contact the plant coordinator to verify operation at target conditions. If the plant process is ready, sampling will commence shortly thereafter. The TREA 24 (24K Crax Venturi Scrubber), TREA 25 (32K Truck Loadout Scrubber), TREA 26 (100K Room Air Scrubber) will be monitored during the testing. Room airflow will be monitored by recording differential pressure and water flow of these scrubbers to see that they are performing to the air balance documented.
EQUI 18	Crax Storage Room Air	
EQUI 72	Rendering Room Air	

4. The following is a description of how each piece of control equipment will be monitored during the test:

EQUI #	Air Pollution Control Description	Description of How This Will Be Monitored During Testing
EQUI 17	Venturi Scrubber, Adsorption Column	TREA 24 : Pressure drop and water flow rate will be recorded every 15 minutes. Pressure drop is to be ≥ 4.0 in H ₂ O and water flow rate is to be ≥ 100.0 gallons per minute
EQUI 18	Adsorption Column	TREA 25 : Pressure drop and water flow rate will be recorded every 15 minutes. Pressure drop is to be ≥ 2.0 in H ₂ O and water flow rate is to be ≥ 320.0 gallons per minute
EQUI 72	Adsorption Column	TREA 26 : Pressure drop and water flow rate will be recorded every 15 minutes. Pressure drop is to be ≥ 2.0 in H ₂ O and water flow rate is to be ≥ 1000.0 gallons per minute

Part IV. Test Methods

1. Listed below in section 2 are the methods to be used for this test.
2. The following is a description of the number of test runs, length of test runs, and sampling rate for each pollutant.
 - A. NIOSH Method 0501 for the determination of room air particulate loading. Three simultaneous samples will be collected at varying room locations and heights of 5 feet, 10 feet and 15 feet in each room for at least 4 hours but less than 5 hours as indicated on the plant diagram as practicable.
 - B. Room ventilation airflow rates will be determined by verification of scrubber equipment upkeep.
 - C. PM, PM₁₀ and PM_{2.5} emission rates will be determined using the following equations and assumptions. All PM will be $\pm$ PM₁₀ = PM_{2.5}. A 1:1 filterable pm to condensable pm ratio will be assumed. gr/dscf concentrations will be calculated using the equation:

$$C_s = \frac{m_n \times 0.01543}{V_{m(std)}}$$

Where:

C_s = Particulate matter concentration (grains/dry standard ft³)

m_n = Net mass of filterable particulate matter collected (mg) + assumed 1:1 condensable PM mass (mg)

Lb/hr emission rates will be calculated using the equation:

$$ER = \frac{C_s \times Q \times 60}{7000}$$

Where:

ER = TSP emission rate calculated using determined room ventilation rates (Q - scfm) (lb/hr)

7000 = grains per pound

Part V. Other

1. PM emissions will be reported based on the filterable assumed organic condensible fractions.
Emissions will be reported on a concentration (gr/dscf) and emission rate (lb/hr) basis using the language presented in Hormel Air permit appendix D (attached).
2. Test schedule: Testing is tentatively scheduled to be conducted February 9, 2024.

Hormel Air Permit Appendix D and Plant Diagram

Appendix D. Industrial Hygiene Indoor Air Quality Testing Protocol

Certain rendering equipment within the Hormel Foods – Austin facility is vented to the ambient room air in one of four rooms. These four rooms have been split into three emission units: EQUI 72 – Rendering Room Air, EQUI 18 – Crax Storage Room Air, and EQUI 17 – Crax Grinding/Truck Loadout Room Air. EQUI 17 is comprised of two individual rooms: the Crax Grinding Room and the Load Out Dock. Hormel/QPP keeps all four rooms at a negative pressure, and the air withdrawn from EQUI 18 and EQUI 72 is sent through an adsorption column before venting to the atmosphere, while air withdrawn from EQUI 17 is sent through a Venturi scrubber and adsorption column in series before venting to the atmosphere. The MPCA requires that emissions from these room air units be quantified in order to demonstrate compliance with PM, PM₁₀, and PM_{2.5} limits at STRU 2 (venting EQUI 17 and EQUI 18) and EQUI 72, used to avoid PSD major source status at the stationary source. The following protocol details industrial hygiene indoor air quality testing for PM, PM₁₀, and PM_{2.5}, which will be performed to quantify emissions in lieu of conventional stack testing for which plant infrastructure is unsuitable to complete.

Testing Methodology

Total suspended particulate matter (TSP) samples will be collected at three different points in each room air unit described above for a total of nine samples. The samples will be collected in accordance with National Institute of Occupational Safety and Health (NIOSH) Method 0501 with the following additional protocol as directed by the MPCA:

- The filters used will be capable of capturing particulate matter less than 2.5 microns in diameter (PM_{2.5}). Exact equipment to be used will be provided in the performance test plan and approved by MPCA compliance staff prior to testing.
- The three sampling points in each room will be varied in height, within reason, to give an accurate representation of the entire room volume from floor to ceiling. Exact sampling points will be disclosed to and approved by MPCA compliance staff prior to testing.
- The sampling time for each sample collected will not be less than four hours or exceed five hours.
- Protocol will be established to minimize disruption to the room air sampling by limiting non-essential access to the rooms.

The collected samples will be analyzed gravimetrically according to NIOSH Method 0501 at a laboratory accredited by the American Industrial Hygiene Association (AIHA). A quality control sample blank will be submitted with the sample set. The results will be reported in concentration units of gr/dscf.

EQUI 17 worst-case conditions

Similar to conventional performance testing, the indoor air quality testing must be conducted at worst-case conditions. The emissions in the Load Out Dock portion of EQUI 17 – Crax Grinding/Truck Load Out Room Air, are from intermittent truck load out operations. Hormel/QPP has indicated a maximum of four trucks could be loaded out in a 4-5 hour time period. Therefore, at least four trucks must be loaded during the indoor air sampling time in the load out dock portion of EQUI 17. To minimize emissions that may escape the Truck Load Out Room when the bay door opens to allow the truck to leave following load out, Hormel/QPP will require each truck to remain in the room for 10 minutes following completion of the load out process before opening the bay door.

Evaluation of results

The three samples from each room will be arithmetically averaged to yield the room's average TSP concentration. Airflow rate (ft³/min) from each of the rooms sampled will be provided by Hormel following testing of each room's ventilation system by a third-party engineering firm. The product of average room air concentration and airflow rate will give a lb/hr value of TSP for each room.

In an effort to reduce testing burden, Hormel has chosen to conservatively interpret TSP to represent PM, filterable PM₁₀, and filterable PM_{2.5} emissions. To account for condensable PM unable to be measured using NIOSH Method 0501, a

1:1 filterable PM to condensable PM ratio will be assumed. That is, for every one pound of filterable PM (measured as TSP), it is assumed there is one pound of condensable PM present that is not being measured. This ratio is seen as adequately conservative based on the 1.65:1 filterable to condensable ratio for controlled blood drying operations (AP-42 9.5.3). Furthermore, the operations housed in the rooms to be sampled consist primarily of grinding, storage, and truck loading: operations that are less likely to emit condensable PM than high temperature rendering operations such as blood drying, cooking, etc. Similar to EPA Method 202 calculations, the condensable PM will be added to filterable PM_{10} and filterable $PM_{2.5}$ measurements in order to give total PM_{10} and total $PM_{2.5}$ results.

Testing Locations

The drawing below, provided by Hormel, details the layout of the refined products area containing EQUI 17, EQUI 18, and EQUI 72. The four rooms highlighted will each contain three air-sampling locations, for a total of 12 sampling locations. The exact locations within each room will be provided in the performance test plan and approved by MPCA compliance staff prior to testing

**SP - Room Sampling Points. @ 5 ft , 10ft and 15ft
in height as practicable**

