

December 21, 2020

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Department of Ecology
NWP - Richland

Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, WA 99354

SUBJECT: LERF and ETF Class 2 Modification to the Hanford Dangerous Waste Permit
- Public Comment Period December 15, 2020 to February 13, 2021

Dear Department of Ecology:

The LERF/ETF comment period is materially affected by a recent proposal by DOE regarding TPA milestone M-62-46, (which apparently was subsequently renumbered M-62-50). M-62-46/50 would have provided an integrated DFLAW-ETF tank waste and secondary waste mass balance using a uniform set of assumptions. DOE has, in what appears to be a case of “bait and switch,” proposed to fulfill the milestone with old disconnected work, and presentations not subject to quality assurance.

- The Fact Sheet for the LERF/ETF permit modification notes that a load in station will be expanded, and a back-up load in station constructed apparently for LERF (which feeds ETF), and that unused tanks will be removed from ETF.
- The operation of LERF/ETF in support of the DFLAW and LAWPS missions is affected by the overall integrated flowsheet/mass balance flowsheet from the tank farms to low activity waste pretreatment, to low activity waste vitrification (LAW-WTP) to the Effluent Management Facility (EMF), to recycle to tank farms, and to ETF/LERF.
- Ecology was proactive in requesting a formal mass balance for the integrated system, resulting in TPA Milestone M-62-46, which was agreed as a new milestone on **July 11, 2019**, with the document (a secondary TPA document) due on **January 30, 2021**¹. The text of this milestone is:

M-62-46: Submit to Ecology as a secondary document a Mass Balance Flow from Tank Farms to Low Activity Waste Pretreatment Capability to Low Activity Waste to Effluent Management Facility to Recycle to Tank Farms and to ETF/LERF.

[Note, in subsequent letters, this number was changed to M-62-50].

- The contents of milestone M-62-46 would inform Ecology’s and the public’s review of this LERF/ETF permit modification. Milestone M-62-46 would also be informative of

¹ Letter 19-ORPMGR-0006, Brian Vance to Alexandra Smith, *CORRESPONDENCE REGARDING TANK WASTE RETRIEVAL AND TREATMENT PATHWAY AT HANFORD AND PROPOSED TRI-PARTY AGREEMENT CHANGE PACKAGES*, July 11, 2019, Change Control Form M-62-19-01.

the ongoing dispute between Ecology and DOE as to whether new double shell tanks should be built.

After establishing milestone M-62-46 (aka M-62-50), the Department of Energy reported to Ecology and the public *many times* that the progress on the mass balance secondary document was “on schedule,” as listed below.

- December 2019 Office of River Protection TPA Monthly Report, (covering the period through November 2019),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: On Schedule
- January 2020 Office of River Protection TPA Monthly Report, (covering the period through December 2019),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: On Schedule
- February 2020 Office of River Protection TPA Monthly Report (covering the period through January 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: On Schedule
- March 2020 Office of River Protection TPA Monthly Report (covering the period through February 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: On Schedule
- April 2020 Office of River Protection TPA Monthly Report (covering the period through March 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: On Schedule
- May 2020 Office of River Protection TPA Monthly Report (covering the period through April 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: On Schedule
- June 2020 Office of River Protection TPA Monthly Report (covering the period through May 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow

Due January 31, 2021
Status: *On Schedule*

- July 2020 Office of River Protection TPA Monthly Report (covering the period through June 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: *On Schedule*
- August 2020 Office of River Protection TPA Monthly Report (covering the period through July 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: *On Schedule*
- Office of River Protection TPA Project Managers' Meeting Minutes, August 13, 2020. This TPA record shows an Action 1 (with a start date of January 9, 2020) for DOE to "Provide a status update at *next month's* PMM on Milestone M-062-50, "Submit to Ecology as a Secondary Document, a Mass Balance Flow Sheet." The status of this action, established in January, was **OPEN** as of August 13, 2020. Minutes signed by Brian Harkins, DOE-ORP Project Manager.
- September 2020 Office of River Protection TPA Monthly Report (covering the period through August 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: *On Schedule*
- Office of River Protection TPA Project Managers' Meeting Minutes, September 10, 2020.
This TPA record shows that Action 1, from January 9, 2020 was completed as follows:
Action No. 1 (TF-20-01-01): ORP stated that the status of this action ("Submit to Ecology as a Secondary Document, a Mass Balance Flow Sheet") **is tracked in the monthly TPA report** under Milestone M-062-50, and that it was also providing updates to the Ecology Project Manager. As such, ORP proposed closing the action [without having any input of substance to the TPA meeting minutes]. Ecology agreed.
The action was closed.
- October 2020 Office of River Protection TPA Monthly Report (covering the period through September 2020),
M-062-50 Submit to Ecology as a Secondary Document, a Mass Balance Flow
Due January 31, 2021
Status: *On Schedule*
- **December 4, 2020**, Letter 20-ECD-0057, Glynn Trenchard, ORP, to Stephanie Schleif, ECY, "COMPLETION OF TRI-PARTY AGREEMENT MILESTONE M-062-50."

This letter proposes to **do away with the requirement for a separate secondary mass balance document**, and instead reference data from April 2017 for WTP and EMF; from May 2019 for Tank Side Cesium Removal, and from EMF/LERF information provided at meetings/presentations in March, April and October of 2020. This proposal is an attempt to renegotiate a milestone outside of public review.

1. My first comment is that I would appreciate if Ecology would reject ORP's proposal to alter TPA Milestone M-062-50. This milestone was supposed to be an integrated, up to date mass balance, and it was reported to the public as "On Schedule" as a single secondary document, month after month after month. Further, some of the information proposed to be substituted predates the establishment of the milestone, none of it is integrated, and some is presentation slides, which have no QA associated with them, as opposed to formal, checked, TPA documents. Ecology should receive a consistent set of assumptions to check to see if they are reasonable, and a set of results to show volumes and compositions underlying the present permit modification request parameters (such as the capacity of the expanded and new equipment), and also to compare to DOE promises about Double Shell Tank space. For example, a DOE official made an unsupported assertion to the DOE Office of Inspector General (DOE-OIG-20-57) that tank waste operations will "eliminate" the concern regarding sufficient DST space availability. It would help to know whether this conclusion is supported in the mass balance or if volumes of DST waste will pile up during DFLAW.

At a minimum, all reference material (including "Powerpoint" presentations) cited by DOE in letter **20-ECD-0057** should be compiled and made available to the public for review in the TPA administrative record, as a single secondary document, by the due date of January 31, 2021, so we can see for ourselves whether DOE's assumptions are consistently documented and integrated.

Of note is that DOE has not described what they were doing during the months of "on schedule" reporting for the milestone. Was this a case of continued time card fraud because they were not actually working on a mass balance? Or is it a case where the results were something DOE did not like and did not wish to share? It would be helpful for Ecology to hold DOE accountable to the original milestone.

Additional comments where a mass balance could improve the current permit modification for LERF/ETF are below.

2. Per addendum page B.7, ETF products now include brine as well as powder. Brine is intended for "*treatment at an authorized dangerous waste facility.*" DOE Should identify the facility and verify this is acceptable under the "*authorized facility's*" permits. If there is no facility with an active valid permits, DOE will have an orphan waste. ~~Is~~ the brine stream affected by the new grout skid that is in design, according to the monthly reports? Can it grout this brine? Please do not send, as was previously identified, ETF brine to PERMA-FIX Northwest in Richland. The brine can generate toxic gases when the pH is adjusted, and, without a mass balance, no one can tell how much ammonia or technetium, or tritium, or NOx sources will be included. Recently a Hanford Tank waste simulant evolved toxic NOx

gas when treated improperly, according to the DNFSB². The same thing could happen much closer to City of Richland residents if treatment occurs at PFNW. Safety and regulatory problems at Perma-Fix Northwest are identified in detail in a new Hanford Challenge report³.

3. Page addendum C.1 adds “WTP aqueous waste” to the list of wastes to be treated at ETF. As a result, there are new feeds and new products to be considered in this permit request. RPP-IQRPE-50074, page 35, identifies Page RPP-RPT-62679, 2020, *ETF Truck Load-In Expansion Project Non-Metallic Materials Report*, Rev. 1, Washington River Protection Solutions, LLC, Richland, Washington, as the source of information on the “*composition of the various ETF waste streams.*” No stream data are provided. Presumably, an integrated mass balance was used to prepare the waste stream composition. Ecology should ask for a copy of RPP-RPT-62679 to track down the source of the composition inputs to see if they are reliable and complete, and ask that the composition ranges be provided in the permit, similar to tank waste compositions listed for the Hose in Hose Transfer line specification (which is part of the LERF/ETF permit).
4. Page Addendum C.13 deletes “39,000” gallons and refers to the “Part A” form in Addendum A for the maximum volume of dangerous waste that can be stored in containers. When I look at the Part A, I found that it says “the container design capacity 39,000 gallons, and the treatment capacity 5,000 gallons are “empirical” numbers based on maximum “anticipated” treatment. The basis for the “anticipated” amounts is not provided, but would be documented with a basis had DOE prepared an integrated mass balance. Ecology should ask for the basis documentation for these “anticipated” values, which include liquids from the current proposed permit modification.
5. Page Addendum B.8 states that aqueous waste from the WTP analytical laboratory is also transferred to LERF/ETF. It would help to have the integrated mass balance to provide a basis for the estimated flows of ALL the streams going to ETF/LERF. Was this stream included in the IQRPE report? The proposed permit modification does not say.

Thank you for considering these comments.

CC: David Bowen,
Stephanie Schleif
Washington Department of Ecology Nuclear Waste Program

² See DNFSB Hanford Activity Report for the Week Ending November 27, 2020, located at <https://www.dnfsb.gov/sites/default/files/document/22431/Hanford%20Week%20Ending%20November%2027%202020.pdf>

³ “Risky Business at Perma-Fix Northwest, The Inside Story on Hanford’s Off-Site Radioactive Treatment Facility,” Updated December 4, 2020, Located at: <https://static1.squarespace.com/static/568adf4125981deb769d96b2/t/5fce533274a40730fbc928bf/1607357241336/2020+12.04+PermaFix+Report+updated.pdf>



**U.S. Department of Energy
Hanford Site**

December 4, 2020

20-ECD-0057

Ms. Stephanie N. Schleif
Acting Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Schleif:

COMPLETION OF TRI-PARTY AGREEMENT MILESTONE M-062-50

Tri-Party Agreement (TPA) Milestone M-062-50 states the following:

“Submit to Ecology, **as a secondary document**, a Mass Balance Flow from Tank Farms to Low Activity Waste Pretreatment Capability to Low Activity Waste to Effluent Management Facility to Recycle to Tank Farms and to LERF/ETF.”

Mass balance information has been submitted with various permit application related to the following facilities include:

- Waste Treatment and Immobilization Plant (WTP) Direct Feed Low-Activity Waste and Effluent Management Facility (EMF) mass balance information was submitted in April 2017.
- Tank Side Cesium Removal mass balance information was submitted in May 2019.
- Erik Olds provided revised information for EMF mass balance to the Liquid Effluent Retention Facility/Effluent Treatment Facility to Washington State Department of Ecology (Ecology) on March 25, 2020. A briefing was provided on April 13, 2020, and a subsequent briefing was provided on October 27, 2020.

In addition to the continued submittal of mass balance information related to the permit application and modifications, which addresses the more near term request related to mass balance information, Ecology has two WTP Interim Compliance Schedule Items, which address the longer-term issue related to mass balance.

Interim Compliance Schedule Item states the following related to mass balance, which were agreed upon in November 2017:

WTP-47 states: "Within nine (9) months of completion of the Pretreatment Facility (PTF) and High Level Waste (HLW) redesign, complete a gap analysis to determine if the PTF and HLW redesign changes affect the WTP mass balance. The analysis will be submitted to Ecology for inclusion in the Administrative Record." Due date September 30, 2025.

WTP-48 states: "After completing five (5) years of operations under the DFLAW configuration, complete a gap analysis to determine if DFLAW operations affect the WTP mass balance. The analysis will be submitted to Ecology for inclusion in the Administrative Record." Due date June 30, 2029.

U.S. Department of Energy (DOE) believes the requirement to submit mass balance information with permit submittals, and the interim compliance schedule items already in place meet the intent of the TPA milestone. Based on the information presented above, and discussions with John Price on November 2, 2020 DOE and Ecology believe TPA M-62-50 is complete.

If you have any questions, please contact me, or your staff may contact Christopher J. Kemp, Director, Environmental Compliance Division, Office of River Protection, on (509) 373-0649, or Janet Diediker, Low Activity Waste Pretreatment System Federal Project Director, Office of River Protection, on (509) 372-3043.

Sincerely,



Digitally signed by GLYN D. TRENCHARD
DN: c=us, o=u.s. government,
ou=department of energy, ou=Energy IT
Services, ou=Hanford Site, ou=People,
cn=GLYN D. TRENCHARD
Date: 2020.12.04 09:31:12 -08'00'

Glyn D. Trenchard, Assistant Manager
Technical and Regulatory Support
Office of River Protection

ECD:MEB

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