



April 23, 2026

Comments Submitted Electronically at:
<https://ecology.commentinput.com/?id=mSrNcaFdM>

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

RE: Draft Reissue Submittal of a Class 2 Permit Modification Request to the Hanford Facility Resource Conservation and Recovery Act Permit for Modification Notification Form 24590-BOF-PCN-ENV-26-001 for Effluent Management Facility Evaporator Concentrate Loading

To Whom It May Concern:

Thank you for the opportunity to comment on the draft Class 2 Permit Modification addressing the Effluent Management Facility (EMF) Concentrate (Bottoms).

Hanford Challenge is a non-profit, public interest, environmental, and worker advocacy organization located in Seattle, WA. We are an independent 501(c)(3) organization incorporated in the State of Washington since 2008 and registered in Oregon. Our mission is to create a future for the Hanford Nuclear Site that secures human health and safety, advances accountability, and promotes a sustainable environmental legacy.

Hanford Challenge has members who work at the Hanford Site. Other members of Hanford Challenge work and/or recreate near Hanford, where they may also be affected by hazardous materials emitted into the environment by Hanford. All members have a strong interest in ensuring the safe and effective cleanup of the nation's most toxic nuclear site for current and future generations, and who are therefore affected by conditions that endanger human health and the environment.

This comment period addresses tank waste from Hanford's 200 East area and proposes to fast-track a plan to break the recycle loop for the concentrated liquid waste that started as steam coming off the pretreated tank waste as the Low Activity Waste Facility (LAW) melts heat and immobilize this waste in glass. That contaminated steam is mixed with water and concentrated at Hanford's Effluent Management Facility (EMF) for further treatment. The higher density concentrated liquids at the bottom of the collection tank are called the EMF bottoms or EMF concentrate.

The original permit language anticipated that the US Department of Energy (USDOE) would recycle the EMF bottoms back through the LAW melter to be made into glass. The original permit stated that USDOE could break this recycling loop at a later date and send the EMF bottoms for grouting and disposal offsite. This second option was anticipated from the start, just not this early in the operation of the LAW facility or with such large volumes of waste. In this permit mod, USDOE proposes sending the steamy bottoms for grouting and disposal offsite right away instead of waiting until later. Even if the permit is modified, USDOE will still have the option to recycle the EMF bottoms back through the LAW melter to vitrify them instead of grouting them and sending them offsite.

Hanford Challenge believes that the EMF bottoms under consideration here should be immobilized in glass and the recycle loop should not be broken. Glass takes up less disposal space than grout, and Hanford has an operational system designed to vitrify this material. EMF bottoms should be glassified. See our numerous concerns with using grout to immobilize Hanford tank waste: <https://www.hanfordchallenge.org/grout>

If USDOE moves forward with breaking the recycle loop and chooses to grout this waste instead, then it is far preferable to have that work performed by the unionized Local 598 workforce at Perma-Fix Northwest rather than shipping the waste in liquid form to Utah.

Please update this Class 2 Permit Modification to address the following concerns:

- **Do not send EMF bottoms offsite:** Please change the permit to continue glassifying the EMF bottoms in the LAW facility. Remove the proposed change to break the recycle loop for EMF bottoms. Do not allow the EMF bottoms to be grouted and sent offsite for disposal for at least three years to allow the Direct Feed Low Activity Waste (DFLAW) optimization to be fully realized.
- **Prioritize the Smaller Waste Disposal Footprint:** Add a permit condition that requires decreasing rather than increasing the volume of tank waste post-immobilization. Based on our calculations, glassifying waste originating from Hanford high-level waste tanks results in a smaller total volume of immobilized waste needing disposal. During the public meeting for this comment period on March 24, 2026, Department of Ecology and USDOE shared that grout increases the volume of waste needing disposal by three times. Additionally, long-lived radionuclides, such as iodine-129 and technetium-99, which are present in the EMF concentrate, stay fixed in a glass waste form, but leach out of a grouted waste form. USDOE should prioritize keeping these radionuclides from spreading through the environment by vitrifying waste that contains these radionuclides. Perhaps take a note from the ALARA playbook? ASARA - As Small As Reasonably Achievable?
- **Prioritize DFLAW optimization, not a new disposal path for EMF bottoms:** USDOE and its contractors have shared in briefings to the public and the Hanford Advisory Board, that

they are working to optimize the DFLAW system, in particular by reducing the amount of liquid that ends up in the offgas system, which would reduce the total amount of secondary waste coming out of the LAW facility. Reducing the amount of secondary waste should be the priority for time, funding, and capacity, not adding new work scope that redirects time, funding and capacity to an offsite disposal path for EMF bottoms and away from DFLAW optimization. Please add a permit condition that requires USDOE to prioritize DFLAW optimization work for at least three years prior to any consideration of offsite disposal paths for EMF bottoms.

- **Accelerate the inspection schedule at EMF:** Modify the permit to ensure an accelerated inspection schedule inside EMF, especially along welds which are known for stress corrosion and cracking when receiving and moving halides.

In the event that USDOE proceeds to break the recycle loop for the EMF bottoms, please update the permit to address the following concerns:

- **Prohibit shipment of liquid waste to offsite disposal sites:** Please add a permit condition prohibiting USDOE from shipping EMF concentrate in liquid form to offsite disposal sites. Transporting liquid waste by road or rail all the way to Utah introduces unnecessary risk to workers, communities, and the environment along the route.
- **Require solidification of EMF bottoms at a local facility that uses a unionized workforce:** Please add a permit condition requiring USDOE to solidify EMF bottoms at a local facility that uses a unionized workforce prior to shipment to offsite disposal sites. Ensure that workers at the facility have the ability to call a stop work.
- **Increase rigor and frequency of EMF concentrate sampling protocol:** Please update the permit to include greater frequency of sampling of EMF bottoms. The current permit modification only requires baseline sampling of “the first three batches and then annually thereafter.” ([AR-39398, Chapter 3C.16, Table 5C-5 Liquid Waste Streams, p.370/505 of the pdf of the permit](#), also reproduced below for ease of reference) This is inadequate. As we understand it, EMF operates a continuous process with variations in the waste characteristics. Please require a more rigorous sampling protocol to confirm Waste Treatment Plant and EMF operations, including a plain language explanation of the sampling points for the EMF concentrate. A more conservative sampling plan will better track and monitor natural variations in the waste characteristics. More frequent sampling data would also assist USDOE and its contractors in their efforts to improve DFLAW optimization.

Table 3C-5 Liquid Mixed Waste Streams

Waste Stream	Characterization and Disposal	Sampling Point	Sampling Frequency
EMF evaporator concentrate (bottoms) ¹	Transported to an offsite ² TSD Facility for treatment and disposal	TBD ³ DEP-V-44142	<p>TBD³Sampling will be performed under the following circumstances:</p> <ul style="list-style-type: none"> • <u>First three batches and annually thereafter.</u> • <u>Change in process or new AP-106 waste feed batch. Updated waste profile determined</u> • <u>At request for resampling by the receiving facility.</u>

- **Require a waste staging plan and inspection schedule:** Please add a permit condition requiring USDOE and its contractors to provide a detailed plan for waste staging on the Hanford site. The permit modification allows a maximum of a year of EMF bottoms to be stored onsite at any one time. Require that (1) USDOE to specify where a year of EMF bottoms would be stored; (2) a rigorous inspection schedule to look for corrosion, leaks, and damage to the storage containers; and (3) the storage area be equipped to collect and safely contain leaks in the event that storage containers fail.
- **Require transportation route details:** Please add a permit condition requiring USDOE to submit a detailed plan of transportation routes under consideration for any future plans to ship grouted EMF bottoms offsite for disposal, prior to any shipment of waste. Require, as part of this plan:
 - A public involvement plan to meaningfully engage communities along potential transportation corridors.
 - That all cumulative impacts for planned and potential waste shipments from Hanford to offsite locations be addressed, including TRU waste shipments and waste that may be shipped as part of the West Area Tank Treatment (WATT)/West Area Risk Management (WARM) Projects.

Thank you for your hard work protecting the environmental and human health from the dangers posed by Hanford's legacy of nuclear weapons production.

Sincerely,

A handwritten signature in black ink that reads "Nikolas F. Peterson". The signature is written in a cursive, flowing style.

Nikolas Peterson, Executive Director, Hanford Challenge