

# Hanford Advisory Board Draft Advice

**Topic:** Hanford Facility Dangerous Waste Permit (Site-Wide Permit)

**Authors:**

**Originating Committee:** Committee of the Whole

**Version #1:**      **Color:** \_\_pink\_\_yellow\_X\_green \_\_purple\_\_blue\_\_goldenrod

## Background:

The Draft Hanford Facility Dangerous Waste Permit for the Treatment, Storage, and Disposal of Dangerous Waste (Permit) is the Washington State Department of Ecology's (Ecology) tool for regulating hazardous waste at Hanford. The Permit establishes conditions that the U.S.

Department of Energy (DOE) and its contractors must meet to protect human health and the environment during the construction, operation, cleanup, closure and post-closure of Hanford Site facilities. The Permit, last released in its entirety for review and public comment in 1994, is complex, complicated, and demanding.

The Hanford Advisory Board (Board) has reviewed the draft Permit and is issuing the advice listed below. Accompanying this advice are Addendum 1 and Addendum 2. Addendum 1 includes specific, detailed comments, inputs, and observations that will improve the permit's content and guidance to DOE. Much like a Sounding Board, this addendum is not a consensus product; instead, it represents an unedited collection of responses to the Permit offered by individual Board members. The Board encourages Ecology to review, evaluate and respond to the items in Addendum 1 for inclusion in the permit. Based on the Board's informal discussions with Ecology, it understands that Ecology will respond to the comments, input, and observations.

Addendum 2, which is an unedited, relatively unpolished reference document synthesized by the Board's Site-Wide Permit issue managers, provides additional context and background for the advice points and for the information discussed in Addendum 1.

## Advice:

1. The Board advises Ecology to comprehensively review and revise the Permit(s) condition(s) to ensure that when the permit conditions reflect site closure and refer to unavailable but appropriate past reference documents, the Permit include citations and requirements for periodic re-evaluation (e.g. five- year post- closure re-evaluations). All references in the Permit(s) should be updated and requirements should reflect current or anticipated future actions.
2. The Board advises Ecology to include in unit-specific permit(s) within the appropriate Addenda, all identified documents and the cited revisions to these documents (e.g.: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sampling and Analysis Plans (SAPs) used for groundwater which are referenced rather than included in the Permit, and the full text of all citations to the Tri-Party Agreement and other external documents)). Furthermore, the Board advises Ecology to include active hyperlinks within the Permits to the appropriate section(s) of these cited documents.

3. The Board advises Ecology to use its omnibus authority under Washington Administrative Code (WAC) 173-303-815 and to include Permit(s) condition(s) to ensure that external documents or processes cited by Ecology in the Permit as permit conditions are subject to an equal public review and comment time period as required under WAC 173-303.
4. The Board advises Ecology to maintain a central repository for unit-specific permit information (e.g. design information needs, problem reports, corrective action reports and-so-forth) that is open to public review. In addition, the Board advises Ecology to make these records available electronically with remote access for continuous public review.
5. The Board advises Ecology to make past versions of the Permit available for public review to promote Permit comparisons.
6. The Board advises Ecology to explicitly reserve its Resource Conservation and Recovery Act (RCRA) authority in the Permit instead of yielding its principal decision-making authority to either DOE or the U.S. Environmental Protection Agency (EPA) via CERCLA actions (e.g., deferral to future remedial investigation/feasibility studies, proposed plans, and record of decision documents to meet presently required Dangerous Waste Regulation requirements under WAC 173-303 for corrective actions).
7. The Board advises Ecology to revise the Permit Part A forms and Permit conditions to reflect current operational needs and the waste volumes and appropriate waste codes for waste currently in Hanford storage units (e.g. 400 Area interim waste storage facility and the Low Level Burial Grounds (LLBG)).
8. The Board advises Ecology to evaluate and confirm that all information on the Part A forms is consistent with Washington State Dangerous Waste Regulations (WAC 173-303); the Dangerous Waste Permit Application; the Part A Form and Instruction publication ECY 303-31 (6-2003) requirements as well as information presented in the State Environmental Policy Act checklists submitted with the Part B Permit application, the unit(s) specific draft Permit Conditions, and the draft factsheet(s).
9. The Board advises Ecology to revise the Permit to use enforceable words such as “shall” and “must” when referencing requirements and to make this convention consistent throughout the entire Permit (e.g. III.10.H.5.d.ii “These drawings *shall* include all equipment ...”).
10. The Board advises Ecology to include a Part II or unit-specific Permit condition requiring submittal of a modification request when any unit-specific new waste stream(s) have been identified and that this modification be distributed for public comment and review. Any modification requests for additional or new waste codes should also be distributed for public review according to the WAC process.
11. The Board advises Ecology to include in unit-specific Permit conditions requirements for upgrades and equipment replacement necessary to ensure the safe operation of Hanford RCRA-permitted facilities (e.g. 242-A Evaporator, WTP melters systems, and-so-forth).

12. The Board advises Ecology to include a Permit condition requiring the use of a Risk Budget Tool to model cumulative effects to groundwater. The Permit condition should also include requirements for submittal of the parameters used in the Risk Budget Tool, with their selection subject to the permit modification process. The Board suggests this condition be included in the Part II conditions. More importantly, the Board asks Ecology **not** to base the Risk Budget Tool on non-validated models.
13. The Board advises Ecology to revise Closure Plan documents to reflect use of Model Toxics Control Act (MTCA) Method B standards. Performance standards for soils should be based initially on the most stringent (lowest) values.
14. The Board advises Ecology to include a Permit(s) condition(s) requiring demonstration of adequate soil characterization and remediation (including both the vertical and lateral extent of the vadose zone), using WAC 173-303-815 under its omnibus authority and under WAC 173-303-645 for all permitted facilities (e.g. tank farms; cribs; ponds; and trenches). The Board advises Ecology to include/revise a permit condition for statistically based sampling design.
15. The Board advises Ecology to provide within the Permit(s) the supporting documentation for any waivers to regulations identified in the permits (WAC 173-303-645(11)).
16. The Board advises Ecology to include a Permit(s) condition(s) requiring all RCRA-regulated near-surface pipelines to be clean-closed per WAC 173-303-610.
17. The Board advises Ecology to recognize that requiring placement of a barrier over the top of an area (e.g. a tank farm) or closing an area to industrial closure standards does not remove the obligations to complete the cleanup to the highest standards practicable, in accordance with WAC 173-303-610 & 665.
18. The Board advises Ecology to require all Emergency Management Plans and Procedures for all Part III (operational) units to be included in Permit(s) Addenda and be subject to the WAC 173-303-834/840 process and coordinated with DOE requirements.
19. The Board advises Ecology to include/revise a Permit(s) condition(s) to ensure that the Independent Qualified Registered Professional Engineer (IQRPE) evaluations for all piping used in operating facilities (Part III units and the Single Shell Tanks) must also evaluate internal corrosion and erosion as well as external galvanic corrosion.
20. The Board advises Ecology to include/revise a Permit(s) condition(s) to require a comprehensive galvanic protection program for buried piping, interplant-connected systems, and in facilities, to assure that vessels, hangers, wiring, wire trays and other components are protected from galvanic, chemical, electrical and other forms of corrosion.
21. The Board advises Ecology to include a Permit(s) condition(s) to ensure that effluent pollutant levels in stack exhaust meet human health exposure criteria at the point of emission.

22. The Board advises Ecology to include/revise a Permit(s) condition(s) to require verification, calibration, and real-time monitoring, utilizing sample apparatus that ensures accurate and representative sampling.
23. The Board advises Ecology to seek direct delegation of authority from EPA for state application of RCRA to wastes released during the time period between initial RCRA legislation by Congress and the delegation by EPA authorizing state implementation of RCRA.
24. The Board advises Ecology to include a Part II condition barring the addition of offsite waste to any future proposed RCRA permitted landfills at Hanford (other than Trench 94), including any future proposed landfill, vault or boreholes as well as barring the transfer of offsite wastes to Hanford storage facilities.
25. The Board advises Ecology to ensure that all Permitted operating units have Contingency Plans as required by WAC 173-303-350 and as designated in Appendix A, 'Crossover Matrix.' The Board also advises Ecology to include individual unit Contingency Plans in the unit-specific Permits.
26. The Board advises Ecology to include a Permit condition requiring characterization for all waste streams processed in RCRA-permitted facilities.
27. The Board advises Ecology to revise/include a Permit condition requiring response planning for criticality and natural phenomenon (e.g. Cascadia seismic events) that address both the direct and indirect effects from such major events.
28. The Board advises Ecology to revise/include a Permit(s) condition(s) to require annual submittal of a schedule for closure of tanks to meet the requirements of Tri-Party Agreement (TPA) Milestones M-045-70 & M-62-45.
29. The Board advises Ecology that it is inappropriate to prospectively accept CERCLA work via the II.Y conditions as satisfying the Dangerous Waste WAC 173-303-645/646 corrective action permit requirements while the remedy selected remains an unproven technology.
30. The Board advises Ecology to include/revise a Permit(s) condition(s) to require the Permittee (DOE) to demonstrate that the Waste Treatment and Immobilization Plant (WTP) design is technically functional, especially in the case of technical issues identified by the Defense Nuclear Facility Safety Board and/or by Ecology staff related to:
  - a. Mixing (especially for non-Newtonian fluids);
  - b. Particle setting (especially for criticality control, but also for heavy metals – lead, chromium, and nickel);
  - c. Hydrogen gas generation and deflagration;
  - d. Erosion and corrosion.

31. The Board advises Ecology to require the removal, treatment, and disposal of the materials in the Plutonium Uranium Extraction Plant (PUREX) tunnels and similar facilities as appropriate.
32. The Board advises Ecology to revise/include a Permit condition to ensure that tank wastes are immobilized in a durable waste form with performance at least equivalent to glass for the entire waste form, and to ensure proper characterization of tank wastes. Specifically the Board advises Ecology that it supports vitrification of wastes and opposes alternate waste forms unless their performance can be shown to be at least “as good as glass” (including secondary waste streams - see HAB Advice #258).