



U.S. Department of Energy

Hanford Field Office
P.O. Box 550
Richland, Washington 99352

January 26, 2026

26-ECD-0005

Mr. Timothy B. Hamlin, Director
Land, Chemicals and Redevelopment Division
U.S. Environmental Protection Agency
Region 10
1200 6th Avenue, Suite 155
Seattle, Washington 98101

Dear Mr. Hamlin:

COMPLETION REPORT FOR TOXIC SUBSTANCES CONTROL ACT RISK-BASED DISPOSAL APPROVAL FOR THE HANFORD SITE 2,000-GALLON TEST BED INITIATIVE DEMONSTRATION

In accordance with title 40 CFR Part 761, §761.61(c), the U.S. Department of Energy, Hanford Field Office (HFO) received approval from the U.S. Environmental Protection Agency (EPA) for a risk-based disposal approval (RBDA) for pretreatment of Hanford Double Shell Tank (DST) waste for shipment off-site. DST waste is considered Polychlorinated Biphenyls (PCB) remediation waste according to the Framework Agreement for Management of PCB in Hanford Tank Waste, August 31, 2000.

The approved RBDA addressed the on-site elements of HFO's 2,000-Gallon Test Bed Initiative Demonstration, which evaluated the technical and regulatory feasibility of commercial facilities for the treatment and final disposal of Hanford Low-Activity Tank Waste.

If you have any questions, please contact me, or you may contact Corey A. Low, Assistant Manager for Safety and Environment, at (509) 376-4820.

Sincerely,

THOMAS
TEYNOR

Digitally signed by THOMAS
TEYNOR
Date: 2026.01.26 14:24:20
-08'00'

On Behalf Of
Raymond M. Geimer
Manager

ECD:DBC

Attachment and cc: See page 2

Mr. Timothy B. Hamlin
26-ECD-0005

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January 26, 2026

Attachment:

Completion Report for TSCA RBDA
for the Hanford Site 2,000-Gallon TBI

cc w/attach:

C. Buck, Wanapum

L. Contreras, YN

S. L. Dahl-Crumpler, Ecology

M. R. Mullin, EPA

M. Murphy, CTUIR

S. N. Schleif, Ecology

R. Utley, WDOH

Administrative Record (TSD: S-2-3)

Environmental Portal

NWPMail@ecy.wa.gov, Ecology

^Operating Record (HMIS)

WRPS Correspondence

Attachment
26-ECD-0005

Completion Report for Toxic Substance Control Act (TSCA) Risk-based Disposal
Approval (RBDA) for the Hanford Site 2,000-Gallon Test Bed Initiative (TBI)
Research and Development

(11 pages including cover sheet)

**RPP-ENV-65885
Revision 01**

Completion Report for Toxic Substances Control Act (TSCA) Risk-based Disposal Approval (RBDA) for the Hanford Site 2,000- Gallon Test Bed Initiative (TBI) Demonstration

Prepared by

D.M. ASHLEY
Hanford Tank Waste Operations & Closure, LLC

Date Published
December 2025



Prepared for the U.S. Department of Energy
Hanford Field Office

Contract No. 89303324DEM000096

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LIST OF TERMS**Abbreviations and Acronyms**

BMPS	Best Management Practices
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DST	Double-shell tank
Ecology	Washington State Department of Ecology
EPA	U. S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
H2C	Hanford Tank Waste Operations and Closure, LLC
IDF	Integrated Disposal Facility
ITPS	In-Tank Pre-Treatment System
IXC	Ion Exchange Column
LAWPS	Low-Activity Waste Pretreatment System
PCB	Polychlorinated Biphenyls
RBDA	Risk-Based Disposal Approval
RD&D	Research, Development and Demonstration
TBI	Test Bed Initiative
TSCA	Toxic Substances Control Act
WDOH	Washington State Department of Health

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1.0 INTRODUCTION

Hanford Site Double-Shell Tank (DST) waste is considered PCB remediation waste according to the *Framework Agreement for Management of Polychlorinated Biphenyls (PCBs) in Hanford Tank Waste, August 31, 2000*, therefore, cleanup and disposal of DST supernate must be conducted in accordance with the Risk-Based Disposal Approval (RBDA) requirements of 40 CFR 761.61(c). The U.S. Environmental Protection Agency (EPA) approved the RBDA for the disposal of PCB remediation waste from DST SY-101 on September 23, 2024, for the Hanford Site 2,000-gallon Test Bed Initiative (TBI) Demonstration. EPA found that management of PCB remediation waste from DST SY-101 under the 2,000-gallon TBI Demonstration would not pose an unreasonable risk of injury to health or the environment.

The 2024 EPA RBDA approval letter requires DOE to submit a completion report to EPA within 180-days following the completion of closure activities under the Research Development & Demonstration (RD&D) permit. The “completion of closure” is defined at the point when activities identified in Table 7-1 of the 2,000-gallon TBI RD&D Permit issued under Washington Administrative Code 173-303-809 have been completed. The completion of closure date occurred on September 24, 2025 which reflects the final on-site transfer of the TBI secondary waste to Environmental Restoration Disposal Facility (ERDF). The completion report required by RBDA Condition 24 must document completion of Conditions 3, 4, 5, 7-11, 18, 20, 22, and 23; and if applicable, Conditions 12-14, 17, 19, and 21.

2.0 DOCUMENTATION OF RBDA CONDITION COMPLETION

RBDA Condition	Evidence of Condition Completion
Condition 3. <i>“DOE must complete pre-treatment and transfer of Tank SY-101 supernate in accordance with RD&D Permit issued by the State of Washington Department of Ecology and the conditions herein.”</i>	Work documents and field interviews. Required records are maintained in the DST Operating Record.
Condition 4. <i>“DOE shall maintain air emissions and ventilation system controls during pre-treatment and transfer activities subject to this approval according to the requirements of the Washington State Department of Health Approval AIR-23-912, and the Washington State Department of Ecology Approval Order No. DE11NWP-001, Rev. 4.”</i>	Work documents and field interviews. Required records are maintained in the DST Operating Record.

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RBDA Condition	Evidence of Condition Completion
<p>Condition 5. <i>“DOE must prepare and maintain all records and documents required by 40CFR §761.123(c)(5) and Subpart K, including but not limited to, the notification of PCB waste activity, and documentation of the work conducted under this Approval. Records must be established and maintained by DOE in one centralized location for a period of 5 years following the EPA’s determination that all work subject to this Approval has been completed. All records must be made available for inspection to authorized representatives of the EPA.”</i></p>	<p>Required records are maintained in the DST Operating Record.</p>
<p>Condition 7. <i>“The EPA may require DOE to collect samples and analyze any samples necessary to verify the findings of no unreasonable risk.”</i></p>	<p>EPA did not request any samples.</p>
<p>Condition 8. <i>“DOE must ensure the offsite transporters, storage, treatment, and/or disposal facilities managing the subject PCB waste are authorized to conduct the activities set forth in the work plans in accordance with all applicable federal, state, and local statutes and regulations.”</i></p>	<p>Authorizations to conduct TBI activities are referenced in the following citations:</p> <p>ORP-68455, 2023, Waste Incidental to Reprocessing Determination for the Test Bed Initiative Demonstration at the Hanford Site, Washington</p> <p>DOE/ORP-2022-02, Revision 0, Final Waste Incidental to Reprocessing Evaluation for the Test Bed Initiative Demonstration</p> <p>89 Federal Register 35008, May 1, 2024, Department of Energy Hanford Mixed Radioactive Waste Land Disposal Restrictions Variance, Final Rule (40 CFR Part 268.44(o) (EPA 2024a)</p> <p>Documentation for evidence of Condition 8 completion is presented in the following report:</p> <p>RPP-RPT-66039, 2025, 2,000-Gallon Test Bed Initiative Demonstration Research and Development and Demonstration Permit Final Report.</p>

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RBDA Condition	Evidence of Condition Completion
Condition 9. <i>“DOE must provide access to this Approval and any incorporated documents and requirements to all personnel conducting work pursuant to this Approval.”</i>	The RBDA Approval and all associated work-controlling documents were accessible to personnel during performance of the TBI Demonstration through the Integrated Document Management System and/or company work control applications. Personnel conducting the work could request management assistance to locate the documents.
Condition 10. <i>“DOE must ensure that its officers, employees, agents, contractors, and subcontractors comply with the requirements of this Approval.”</i>	DOE performed management assessments and oversight for the duration of TBI demonstration processes.
Condition 11. <i>“DOE will ensure that all field work conducted pursuant to this Approval is conducted in compliance with all applicable health and safety standards, as required by federal, state, and local regulations and ordinances. DOE will make any plans developed to protect worker health and safety available to the EPA upon request.”</i>	Documentation for evidence of Condition 11 completion is presented in the work documents applicable to TBI. The field work was conducted according to company policy and DOE worker safety & health programs and standards. Required records are maintained in the DST Operating Record and are available upon request.
Condition 17. <i>“If DOE makes any requests for extension in accordance with the RD&D Permit issued by the State of Washington Department of Ecology, DOE must also notify the EPA.”</i>	ENV-RBDA-NOT-25-0001, Notification of RD&D Permit Extension, April 10, 2025.
Condition 18. <i>“All equipment used for carrying out activities covered by this approval external to Tank SY-101 shall comply with the requirements of the RD&D Permit. DOE shall maintain and conduct pre-treatment and transfer operations according to procedures in the RD&D Permit.”</i>	Documentation for evidence of Condition 18 completion is presented in the following reports: RPP-IQRPE-50128, 2024, <i>IQRPE Design Assessment Report for the Test Bed Initiative</i> RPP-IQRPE-50157, 2024, <i>IQRPE Installation Assessment Report for the TBI System</i> RPP-IQRPE-50158, 2024, <i>IQRPE Design Assessment Report for TBI Extraction</i> RPP-IQRPE-50162, 2024, <i>IQRPE Installation Assessment Report for TBI Extraction</i>

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RBDA Condition	Evidence of Condition Completion
	<p>RPP-RPT-66039, 2025, <i>2,000-Gallon Test Bed Initiative Demonstration Research and Development and Demonstration Permit Final Report</i>.</p> <p>Required work documents are maintained in the DST Operating Record.</p>
<p>Condition 20. <i>“DOE shall maintain and operate a leak detection system as required by the RD&D Permit for all aboveground system components that contain liquid tank or pretreated waste. This includes, but is not limited to, an electronic leak detection element on the delay tote top-hat that will alarm. If the system alarms, the operator will shut down the in-tank pump or delay tote pump if running.”</i></p>	<p>The TBI operating procedure described the leak detection equipment, alarms and responses. This procedure, along with other required records, is maintained in the DST Operating Record.</p>
<p>Condition 22. <i>“DOE must implement Greener Cleanup BMPS identified in their application, which include:</i></p> <p><i>a. Request the off-site commercial treatment facilities clean and return the process totes for reuse at Hanford instead of declaring the process totes as a waste;</i></p> <p><i>b. Implement the DOE Environmental Management System ISO 14001 requirements.”</i></p>	<p>EnergySolutions (Clive, UT) shipped three empty process totes back to Hanford on May 15, 2025. Totes received by Hanford Tank Waste Operations and Closure (H2C) on May 19, 2025.</p> <p>Waste Control Specialists (Andrews County, TX) shipped three empty process totes back to Hanford on June 26, 2025. Totes received by H2C on June 30, 2025.</p> <p>H2C implemented Integrated Environmental Stewardship and Resource Efficiency and Protection program requirements in conjunction with Integrated Safety Management System (ISMS) company plans and policy.</p>
<p>Condition 23. <i>“Except for the ion exchange column that will be separated from the ITPS, secondary waste generated as a result of activities subject to this approval shall be managed according to the applicable requirements of 40 CFR Part 761 and disposed at the Integrated Disposal Facility (IDF), or if the IDF is not yet operational, at the Environmental Restoration Disposal Facility, provided that the waste meets the ERDF waste</i></p>	<p>Documentation for evidence of Condition 23 completion is presented in the following reports:</p> <p>RPP-IQRPE-50166, Rev 00, Test Bed Initiative – IQRPE Certification of Closure Completion Report, October 02, 2025.</p> <p>Required work documents and waste management records are maintained in the DST Operating Record.</p>

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RBDA Condition	Evidence of Condition Completion
<p><i>acceptance criteria. Secondary wastes will not accumulate for more than 90 days. Consistent with the RD&D permit, the ion exchange column will be separated from the ITPS and packaged for transfer to the Hanford Site 200 East area for storage with the ion exchange columns generated from the Tank Side Cesium Removal operations under the Direct Feed Low Activity Waste program. The ion exchange column will be stored under the DFLAW RBDA approval issued May 12, 2022.”</i></p>	
<p>Conditions 12-14, 19, and 21:</p>	<p><i>Not applicable to the completion report.</i></p>

2.0 CONCLUSION

In conclusion, DOE’s documentation of completion of the conditions of the EPA’s RBDA for TBI has been fulfilled, and the 2,000-gallon TBI Demonstration was accomplished successfully, in accordance with all applicable federal, state, and local regulations.

3.0 REFERENCES

40 CFR Part 268, “Waste Excluded from the Treatment Standards Under § 268.40”, *Code of Federal Regulations*, as amended.

89 FR 35008, 2024 “Department of Energy Hanford Mixed Radioactive Waste Land Disposal Restrictions Variance”, Final Rule, *Federal Register*, Vol 89, pp. 35008-35010, dated May 1, 2024.

DOE/ORP-2022-02, “*Final Waste Incidental to Reprocessing Evaluation for the Test Bed Initiative Demonstration*,” U.S. Department of Energy, Washington, D.C.

Ecology 2024, *Dangerous Waste Research, Development and Demonstration Permit for the 2,000-Gallon Test Bed Initiative Demonstration*, Environmental Protection Agency (EPA) ID Number WA 7890008967, June 18, 2024, 24-NWP-114, State of Washington Department of Ecology, Richland, Washington.

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Ecology, EPA, and DOE, 2000, “*Framework Agreement for the Management of Polychlorinated Biphenyls (PCBs) in Hanford Tank Waste*”, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy.

EPA 2024b, Letter U.S. Environmental Protection Agency, “Application for a Toxic Substance Control Act (TSCA) Risk-based Disposal Approval (RBDA) for the Hanford Site 2,000-gallon Test Bed Initiative (TBI) Demonstration; 761.61(c),” U.S. Environmental Protection Agency, Seattle, Washington, dated September 23, 2024.

ORP-68455, Waste Incidental to Reprocessing Determination for the Test Bed Initiative Demonstration at the Hanford Site, Washington, U.S. Department of Energy, Hanford Field Office, Richland, Washington, dated March 16, 2023.

RPP-IQRPE-50128, 2024, *DA-361651-01, IQRPE Design Assessment Report for Test Bed Initiative*, Meier Architecture Engineering, Kennewick, WA

RPP-IQRPE-50157, 2024, *IA-361651-01, IQRPE Installation Assessment Report for the TBI System*, Meier Architecture Engineering, Kennewick, WA

RPP-IQRPE-50158, 2024, *DA-361651-02, IQRPE Design Assessment Report for TBI Extraction*, Meier Architecture Engineering, Kennewick, WA

RPP-IQRPE-50162, 2025, *IA-361651-02, IQRPE Installation Assessment Report for TBI Extraction*, Meier Architecture Engineering, Kennewick, WA

RPP-IQRPE-50166, 2025, *Test Bed Initiative – IQRPE Certification of Closure and Completion Report*, Meier Architecture Engineering, Kennewick, WA

RPP-RPT-66039, 2025, *2,000-Gallon Test Bed Initiative Demonstration Research and Development and Demonstration Permit Final Report*, Hanford Tank Waste Operations and Closure, LLC (H2C), Richland, WA

Woehle, A., 2025, ENV-RBDA-NOT-25-001, “*Notification of RD&D Permit Extension*”, (email to U.S. EPA Region 10), Hanford Tank Waste Operations and Closure, LLC (H2C), Richland, WA