

Waste Treatability Studies Report for the Hanford Site Calendar Year 2017

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management



P.O. Box 550
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PURPOSE

The purpose of this report is to address treatability study reporting requirements for the Calendar Year (CY) 2017 reporting period.

REQUIREMENTS

In accordance with WAC 173-303-071(3)(r), generators and sample collectors are required to report the following:

- The amount of waste shipped
- The name, address, and U.S. Environmental Protection Agency (EPA)/state identification number of the laboratory or testing facility that received the waste
- The date the shipment was made
- Whether or not unused samples and residues were returned to the generator.

In accordance with WAC 173-303-071(3)(s), laboratory and testing facilities are required to report the following:

- The name, address, and EPA/state identification number of the laboratory or testing facility conducting the treatability studies
- The types (by process) of treatability studies conducted
- The names and addresses of persons for whom studies have been conducted (including their EPA/state identification numbers)
- The total quantity of waste in storage each day
- The quantity and types of waste subjected to treatability studies
- When each treatability study was conducted
- The final disposition of residues and unused sample from each treatability study
- Estimation of the number of studies and the amount of waste expected to be used in treatability studies during the current year.

DATA

During CY 2017, Hanford Site workers engaged in activities subject to treatability study reporting requirements. Tables 1, 2, and 3 provide information called for under WAC 173-303-071(3)(r) and WAC 173-303-071(3)(s).

Table 1. Generator and Sample Collectors.

| <p>The Name, Address, & EPA/State ID# of the Lab or Testing Facility that Received the Waste</p> | <p>CATEGORY^{1,2} 1. Media Contaminated with Nonacute Dangerous Waste 2. Nonacute Dangerous Waste Other than Contaminated Media 3. Acutely Hazardous Waste 4. Media Contaminated with Acutely Hazardous Waste</p> | <p>Waste Stream Description</p> | <p>Treatment Process Being Evaluated</p> | <p>Amount of Sample Shipped (kg)</p> | <p>Shipment Date from Hanford to Testing Facility</p> | <p>Were Unused Sample(s) Returned to Generator? (Yes/No/NA)</p> | <p>Were Residue(s) Returned to Generator? (Yes/No/NA)</p> |
|--|--|--|--|--------------------------------------|---|---|---|
| <p>Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999 Richland, WA 99352 EPA ID# WA7890008967</p> | <p>2</p> | <p>Hanford Double Shell Tank Supernate</p> | <p>Vitrification</p> | <p>6.3 Kg</p> | <p>4/14/2017</p> | <p>No</p> | <p>No</p> |
| <p>Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999 Richland, WA 99352 EPA ID# WA7890008967</p> | <p>2</p> | <p>Hanford Double Shell Tank Supernate</p> | <p>Vitrification</p> | <p>6.3 Kg</p> | <p>4/28/2017</p> | <p>No</p> | <p>No</p> |
| <p>Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999</p> | <p>2</p> | <p>Hanford Double Shell Tank Supernate</p> | <p>Vitrification</p> | <p>5.7 Kg</p> | <p>10/13/2017</p> | <p>No</p> | <p>No</p> |

| The Name, Address, & EPA/State ID# of the Lab or Testing Facility that Received the Waste | CATEGORY^{1,2} 1. Media Contaminated with Nonacute Dangerous Waste 2. Nonacute Dangerous Waste Other than Contaminated Media 3. Acutely Hazardous Waste 4. Media Contaminated with Acutely Hazardous Waste | Waste Stream Description | Treatment Process Being Evaluated | Amount of Sample Shipped (kg) | Shipment Date from Hanford to Testing Facility | Were Unused Sample(s) Returned to Generator? (Yes/No/NA) | Were Residue(s) Returned to Generator? (Yes/No/NA) |
|---|---|---|-----------------------------------|-------------------------------|--|--|--|
| Richland, WA 99352 EPA ID# WA7890008967 | | | | | | | |
| Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999 Richland, WA 99352 EPA ID# WA7890008967 | 2 | Hanford Double Shell Tank Supernate | Vitrification | 5.7 Kg | 10/20/2017 | No | No |
| PermaFix Northwest Richland, Inc 2025 Battelle Blvd., Richland, WA 99354 EPA ID# WAR000010355 | 2 | Hanford Double Shell Tank Supernate | Stabilization | 12.854 Kg | 10/26/2017 | No | No |

¹ “Acute hazardous waste” means dangerous waste sources (listed in WAC [173-303-9904](#)) F020, F021, F022, F023, F026, or F027 and discarded chemical products (listed in WAC [173-303-9903](#)) that are identified with a dangerous waste number beginning with a "P", including those wastes mixed with source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954.

² These sample categories are associated with quantity limits [[WAC 173-303-071\(3\)\(r\)\(ii\)\(A\)](#)].

N/A – “Not Applicable”

Table 2. Laboratories and Testing Facilities.

| Name, Address, & EPA/State ID# of the Lab or Testing Facility Conducting the Treatability Studies | CATEGORY^{1,2} 1. Media Contaminated with Nonacute Dangerous Waste 2. Nonacute Dangerous Waste Other than Contaminated Media 3. Acutely Hazardous Waste 4. Media Contaminated with Acutely Hazardous Waste | Types of Treatability Studies Conducted (Treatment Process) | Name, Address, & EPA/State ID# of Persons ³ for whom Studies were Conducted | Quantity of Waste Subjected to Treatability Studies (kg) | When was Treatability Study Conducted? | Total Quantity of Waste in Storage Each Day (kg) | Final Disposition of Residues & Unused Sample |
|--|---|---|---|--|--|--|---|
| Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999 Richland, WA 99352 ⁴ EPA ID# WA7890008967 | 2 | Vitrification | Washington River Protection Solutions Tank 241-AP-105 P.O. Box 850 Richland, WA 99352 EPA ID# WA7890008967 | 6.3 Kg | N/A | 6.3 Kg | N/A |
| Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999 Richland, WA 99352 ⁴ EPA ID# WA7890008967 | 2 | Vitrification | Washington River Protection Solutions Tank 241-AP-105 P.O. Box 850 Richland, WA 99352 EPA ID# WA7890008967 | 6.3 Kg | N/A | 6.3 Kg | N/A |

| Name, Address, & EPA/State ID# of the Lab or Testing Facility Conducting the Treatability Studies | CATEGORY ^{1,2} 1. Media Contaminated with Nonacute Dangerous Waste 2. Nonacute Dangerous Waste Other than Contaminated Media 3. Acutely Hazardous Waste 4. Media Contaminated with Acutely Hazardous Waste | Types of Treatability Studies Conducted (Treatment Process) | Name, Address, & EPA/State ID# of Persons ³ for whom Studies were Conducted | Quantity of Waste Subjected to Treatability Studies (kg) | When was Treatability Study Conducted? | Total Quantity of Waste in Storage Each Day (kg) | Final Disposition of Residues & Unused Sample |
|--|---|---|---|--|--|--|---|
| Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999 Richland, WA 99352 ⁵ EPA ID# WA7890008967 | 2 | Vitrification | Washington River Protection Solutions Tank 241-AP-107 P.O. Box 850 Richland, WA 99352 EPA ID# WA7890008967 | 5.7 Kg | N/A | 5.7 Kg | N/A |
| Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999 Richland, WA 99352 ⁵ EPA ID# WA7890008967 | 2 | Vitrification | Washington River Protection Solutions Tank 241-AP-107 P.O. Box 850 Richland, WA 99352 EPA ID# WA7890008967 | 5.7 Kg | N/A | 5.7 Kg | N/A |

¹ "Acute hazardous waste" means dangerous waste sources (listed in WAC [173-303-9904](#)) F020, F021, F022, F023, F026, or F027 and discarded chemical products (listed in WAC [173-303-9903](#)) that are identified with a dangerous waste number beginning with a "P", including those wastes mixed with source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954.

²These sample categories are associated with quantity limits [[WAC 173-303-071\(3\)\(s\)\(iii\) & \(iv\)](#)].

³“Person” means an individual, trust, firm, joint stock company, federal agency, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a state, or any interstate body.

⁴Facility that received Hanford Tank waste samples in 2017. Shipment on 4/14/2017 at 6.3 Kg and shipment on 4/28/2017 at 6.3 Kg from Washington River Protection Solutions Tank 241-AP-105. These two shipments were combined on 10/31/2017 and the actual tests will start in CY 2018 and will be reported in the CY 2018 report.

⁵Facility that received Hanford Tank waste in 2017. Shipment on 10/13/2017 at 5.7 Kg from AP-107, and shipment on 10/20/2017 at 5.7 Kg from Washington River Protection Solutions Tank 241-AP-107. The actual tests will actually start in CY 2018 and will be reported in the 2018 report

N/A – “Not Applicable”

Note: Research on Hanford Tank Waste is an on-going process that runs in parallel with Treatability Studies. Shipments of characterization samples were shipped to the 325 Building in stages in calendar year 2017. Subsamples will be extracted from the RPL sample archive for Treatability Studies in 2018 as needed, while still meeting the [WAC 173-303-071\(3\)\(s\)\(v\)](#) one year time frame.

Table 3: Laboratories and Testing Facilities.

| Name, Address, & EPA/State ID# of the Lab or Testing Facility Conducting the Treatability Studies | Estimated Number of Studies to be Conducted During CY 2018 | Estimated Amount of Waste Expected to be Used in Treatability Studies During CY 2018 (kg) |
|--|--|---|
| Pacific Northwest National Laboratory 325 Building Radiochemical Processing Laboratory P.O. Box 999 Richland, WA 99352 EPA ID# WA7890008967 | 2 | 24 Kg total |

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