



1238084  
[0077221H]

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950  
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 6, 2016

16-NWP-064

By certified mail

Ms. Stacy Charboneau, Manager  
Richland Operations Office  
United States Department of Energy  
PO Box 550, MSIN: A7-50  
Richland, Washington 99352

Mr. John A. Ciucci, President and CEO  
CH2M HILL Plateau Remediation Company  
PO Box 1600, MSIN: H7-30  
Richland, Washington 99352

Re: Dangerous Waste Compliance Inspection on March 14, 2016 at Hexone Storage and Treatment Facility, RCRA Site ID: WA7890008967, NWP Compliance Index No.: 16.555

Dear Ms. Charboneau and Mr. Ciucci:

Thank you for your staff's time during the Hexone Storage and Treatment Facility inspection on March 14, 2016. The Department of Ecology's compliance report of this inspection is enclosed. The report cites one area of non-compliance and no concerns listed in the compliance problems section of the report. Action required for the area of non-compliance is complete and no further action is required.

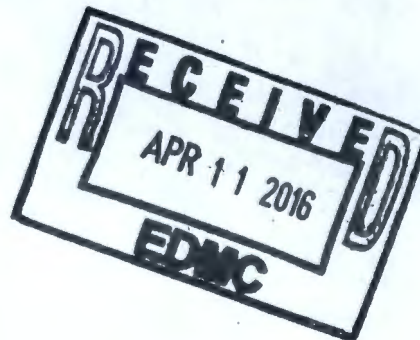
If you have questions or need further information, please contact me at [nancy.ware@ecy.wa.gov](mailto:nancy.ware@ecy.wa.gov) or (509) 372-7912.

Sincerely,

Nancy Ware  
Dangerous Waste Compliance Inspector  
Nuclear Waste Program

tkb  
Enclosure

cc: See page 2



Ms. Charboneau and Mr. Ciucci  
April 6, 2016  
Page 2

16-NWP-064  
Hexone Storage and Treatment Facility  
RCRA Site ID: WA7890008967  
NWP Compliance Index No.: 16.555  
Inspection Date: March 14, 2016

cc electronic w/enc:

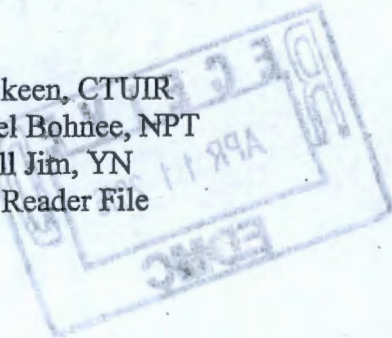
Dave Bartus, EPA  
Jack Boller, EPA  
Dennis Faulk, EPA  
Duane Carter, USDOE  
Cliff Clark, USDOE  
Tony McKarns, USDOE  
Allison Wright, USDOE  
Joel Williams, Jr., CHPRC  
Jon Perry, MSA  
Ken Niles, ODOE  
Kathy Conaway, Ecology  
Suzanne Dahl, Ecology  
Kelly Elsethagen, Ecology  
Jared Mathey, Ecology  
Nina Menard, Ecology  
Tim Mullin, Ecology  
John Price, Ecology  
Tom Tebb, Ecology  
Cheryl Whalen, Ecology  
Environmental Portal  
Hanford Facility Operating Record  
CHPRC Correspondence Control

cc w/enc:

Steve Hudson, HAB  
Administrative Record  
NWP Central File  
NWP Compliance Index File: 16.555

cc w/o enc:

Rod Skeen, CTUIR  
Gabriel Bohnee, NPT  
Russell Jim, YN  
NWP Reader File



**Washington Department of Ecology  
Nuclear Waste Program  
Compliance Report**

---

**Site:** Hexone Storage and Treatment Facility  
**RCRA Site ID:** WA7890008967  
**Inspection Date:** March 14, 2016  
**Site Contacts:** Joel F. Williams Jr., CH2M Hill Plateau Remediation Company (CHPRC)  
Cliff Clark, United States Department of Energy (USDOE)  
**Phone:** (509) 376-4782  
**FAX:** (509) 372-2828  
**Site Location:** 200 West Area / Hanford Site  
Benton County, WA  
**At This Site Since:** 1943 **NAICS#:** 54171, 56221, and 924110  
**Current Site Status:** Treatment, Storage, and Disposal Facility / Closure Unit #19  
**Compliance Index #:** 16.555

---

**Ecology**

**Lead Contact:** Nancy Ware **Phone:** (509) 372-7912 **Fax:** (509) 372-7971  
**Other Representatives:** N/A  
**Report Date:** April 6, 2016  
**Report By:** Nancy Ware

Nancy Ware 4/6/2016  
(Signed) (Date)

---

Site Location

The Hanford Site was assigned a single United States Environmental Protection Agency (EPA) identification number, and is considered a single Resource and Conservation Recovery Act of 1976, as amended, (RCRA) facility even though the Hanford Site contains numerous processing areas spread over a large geographic area. The Hanford Site is a tract of land approximately 586 square miles and is located in Benton County, Washington. This site is divided into distinct Dangerous Waste Management Units (DWMUs) which are administratively organized into "unit groups." A unit group may contain only one DWMU or many; currently, there are 37 unit groups at the Hanford Site. Individual DWMUs utilize only a very small portion of the Hanford Site. Additional descriptive information on the individual DWMUs is contained in unit group permit applications and in Parts III, V, and VI of the Hanford Facility RCRA Permit, Dangerous Waste Portion, WA7890008967, Revision 8C (hereafter referred to as the Permit).

Owner/Operator Information

The USDOE is the owner of the Hanford Site; USDOE – Richland Operations Office (USDOE-RL) oversees waste management and cleanup activities ongoing at the Hanford Site. USDOE-RL and CHPRC co-operate the Hexone Storage and Treatment Facility.

## Facility Background

According to the Hexone Storage and Treatment Facility Permit Part A Application, Revision 7, October 1, 2008:

*The Hexone Storage and Treatment Facility is located in the southeast corner of the 200 West Area of the Hanford Facility. The Hexone Storage and Treatment Facility consisted of two 24,000 gallon (91,000 liter) below grade carbon steel tanks [276-S-141 (S-141) and 276-S-142 (S-142)], a distillation system, and railroad tank cars. The Hexone Storage and Treatment Facility received liquid mixed waste from the Reduction/Oxidation (REDOX) Plant and possibly the Hot Semiworks Plant. The Hexone Storage and Treatment Facility was used from 1951 through 1967 to store reagent-grade methyl isobutyl ketone (hexone) for makeup as a solvent for the REDOX Plant. After 1967, the Hexone Storage and Treatment Facility contained distilled hexone, part or all of which had been used in the REDOX Plant. The S-142 tank also contained normal paraffin hydrocarbon and tributyl phosphate from a one-time campaign to separate americium, curium, and promethium from Shippingport reactor blanket fuel in 1966. Approximately 200 gallons (760 liters) of water were added to the S-141 tank in 1988. The S-142 tank received approximately 1,300 gallons (5,000 liters) of water in 1967, 500 gallons (1,900 liters) in the mid-1970's, and 200 gallons (760 liters) in the mid-1980's. The combined storage design capacities of the tanks (S-141 and S-142) are 48,000 gallons (182,000 liters) (S02). The treatment design capacity of the distillation system was 3,000 gallons (11,400 liters) of waste per day (T04). The storage design capacity of the railroad tank cars was 40,000 gallons (152,000 liters) (S01).*

*The mixed waste was pumped from the S-141 and S-142 tanks through a distillation system to decrease the radioactivity of the waste. The distilled waste was sent to temporary storage in railroad tank cars located within the Hexone Storage and Treatment Facility, until completion of transfers to an offsite incinerator in June of 1992. Three distillation vessels containing process residue have been sampled and are stored elsewhere on the Hanford Site as mixed waste. The S-141 and S-142 tanks currently each contain up to 5 to 30 gallons (19 to 114 liters) of liquid mixed waste containing 93% normal paraffin hydrocarbon and 7% hexone and up to 250 gallons (950 liters) of phosphate tar. The phosphate tar will be stored at the Hanford Site as mixed waste. The railroad tank cars have been emptied, cleaned, and removed. The Hexone Storage and Treatment Facility two tanks are being closed in conjunction with the 200-IS-1 Operable Unit. The tanks have been stabilized by filling them with grout and deactivating the purge system.*

*The S-141 tank was used to store waste hexone (F003) that was used as a solvent in the REDOX Plant. The mixed waste was considered ignitable (D001) and a toxic state-only waste (WT02). The estimated annual quantity of waste that was treated and stored in the S-141 tank was approximately 20,000 gallons (76,000 liters).*

*The S-142 tank also was used to store hexone waste. In addition, the S-142 tank also stored normal paraffin hydrocarbon and tributyl phosphate waste. This waste resulted from a one-time campaign to separate americium, curium, and promethium from Shippingport reactor blanket fuel in 1966. The estimated annual quantity of waste that was treated and stored in the S-142 tank was approximately 16,000 gallons (61,000 liters).*

### Compliance Background for the Hexone Storage and Treatment Facility

December 1, 2015 – The Department of Ecology (Ecology) conducted a non-financial record review inspection of the Hexone Storage and Treatment Facility. The Ecology inspection resulted in the finding of two areas of non-compliance. The first non-compliance listed the failure to document the time of the inspection on inspection logs. The second non-compliance listed the failure to retain dangerous waste (DW) inspection logs in the operating record. The two areas of non-compliance have been resolved and returned to compliance as discussed later.

### Inspection Summary

This inspection was an unannounced non-financial record review (NRR), which was performed as part of the complete annual inspection of the Hanford site by the Ecology Nuclear Waste Program (NWP). The scope of the inspection was limited to a review of the facility's DW inspection schedule for the Hexone Storage and Treatment Facility and associated inspection records for the past year. No site inspection was performed.

I requested a copy of the facility's inspection schedule and records for inspections performed during 2015. Mr. Williams provided me with a copy of 2CP-SUR-S-04004, CPSM-PRO-OP-50685, Revision 2, Change 5, *REDOX Surveillance*, and a copy of 2CP-SUR-S-04004, CPSM-PRO-OP-50685, Data Sheet 1 – REDOX Exterior Surveillance, dated October 7, 2015.

WAC 173-303-320(2) requires that:

*The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that help prevent, detect, or respond to hazards to the public health or the environment. In addition: (b) the schedule must identify the types of problems which are to be looked for during inspections.*

I observed that 2CP-SUR-S-04004, CPSM-PRO-OP-50685, *REDOX Surveillance*, Section 1.3, *Applicability*, listed a schedule for an annual surveillance, which included an "exterior only" surveillance of 276-S-141 Tank and 276-S-142 Tank. Section 1.5, *Facility Description*, states:

*Hexone storage tanks 276 S 141 and 276 S 142 are buried north of the 276 S Building. These single-shell, carbon-steel tanks were used to store makeup solvent for the REDOX Facility during operations. The residual sludge in the tanks from the distillation process was grouted as an interim closure in 2002. Only exterior surveillances are performed on these tanks.*

I observed that 2CP-SUR-S-04004, CPSM-PRO-OP-50685, Data Sheet 1 – REDOX Exterior Surveillance, consisted of two pages, with page 2 being the signature page for the DW inspection log. Data Sheet 1 lists the following types of problems to be looked for during the surveillance.

- Building/Area Security
- Structural Integrity
- Animal/Pest Intrusion
- Electrical Hazards
- Ground Subsidence (exterior)
- Housekeeping
- Occupational Hazards

- Signage
- Water Intrusion (Leaks)
- Containers
- Combustible Material Storage
- Combustible Loading
- Exits (for exterior surveillance)

WAC 173-303-320(2)(d) states:

*The owner or operator must keep an inspection log or summary, including at least the date and time of the inspection, the printed name and the handwritten signature of the inspector, a notation of the observations made, an account of spills or discharges in accordance with WAC 173-303-145, and the date and nature of any repairs or remedial actions taken.*

I observed that the DW inspection records submitted to Ecology, included 2CP-SUR-S-04004, CPSM-PRO-OP-50685, Data Sheet 1 – REDOX Exterior Surveillance, dated October 7, 2015, and Data Sheet 3 REDOX Surveillance – Comments Sheet. I observed the inspection log did not include the time of the inspection.

I reviewed letter, 16-ESQ-0035, Stacy Charboneau, USDOE-RL, to Jane Hedges, Ecology, dated February 8, 2016, "Response to the Dangerous Waste Compliance Inspection on June 30, 2015, for the Hanford Site Hexone Storage and Treatment Resource Conservation and Recovery Act Site ID: WA7890008967, Nuclear Waste Program Compliance Index Number: 15.539." Enclosure 2 to the letter, "Receipt of Regulatory Requested Documents Note to the File for Hexone Storage and Treatment Facility Operating Record," page 4, lists a note to the file which was placed in the facility operating record on December 14, 2015.

I observed the note to file stated,

*This Note to the File is to document that the HSTF inspection records completed prior to this date were lacking the time of inspection as identified in Ecology's compliance inspection report transmitted via letter 15-NWP-204.*

### Compliance Problems

The Dangerous Waste inspection on March 14, 2016, found the following compliance problems.

Each problem is covered in three parts:

- (1) **Citation from the regulations.**
- (2) **Specific observations** from the inspection that highlight the problem.
- (3) **Required actions** needed to fix the problem and achieve compliance.

The problems listed below must be corrected to comply with Washington Dangerous Waste Regulations (Chapter 173-303 WAC), or other environmental laws or regulations. Complete the required actions listed below and respond to Ecology at the following address within the timeframe listed in the Action Required section of this compliance report. Include all supporting documentation such as photographs, records, and statements explaining the actions taken and dates completed to return to compliance.

Attention: Nancy Ware  
Washington Department of Ecology  
Nuclear Waste Program  
3100 Port of Benton Blvd  
Richland, WA 99354

You may request an extension of the deadlines to achieve compliance. Make the request in writing, including the reasons an extension is necessary and proposed date(s) for completion, and send it to Nancy Ware before the date specified above. Ecology will provide a written approval or denial of your request.

**If you have any questions about information in this Compliance Report, please call:  
Nancy Ware at (509) 372-7912**

This does not relieve you of your continuing responsibility to comply with the regulations at all times.

**1. WAC 173-303-400(3), as referenced by the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion Revision 8C – Condition I.A Effect of Permit.**

**WAC 173-303-320(2): The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that help prevent, detect, or respond to hazards to the public health or the environment. In addition:**

**(d) The owner or operator must keep an inspection log or summary, including at least the date and time of the inspection, the printed name and the handwritten signature of the inspector, a notation of the observations made, an account of spills or discharges in accordance with WAC 173-303-145, and the date and nature of any repairs or remedial actions taken. The log or summary must be kept at the facility for at least five years from the date of inspection.**

**Observations:** I observed that the 2CP-SUR-S-04004, CPSM-PRO-OP-50685, Data Sheet 1 – REDOX Exterior Surveillance, dated October 7, 2015, record did not include the time of the inspection.

**Action Required:** Letter, 16-ESQ-0035, Stacy Charboneau, USDOE-RL, to Jane Hedges, Ecology, dated February 8, 2016, "Response to the Dangerous Waste Compliance Inspection on June 30, 2015, for the Hanford Site Hexone Storage and Treatment Resource Conservation and Recovery Act Site ID: WA7890008967, Nuclear Waste Program Compliance Index Number: 15.539," Enclosure 2, "Receipt of Regulatory Requested Documents Note to the File for Hexone Storage and Treatment Facility Operating Record," documents that a note to the file was already placed in the facility operating record on December 14, 2015, stating that the time was missing on past inspection records. **No further action is required.**

The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status or sexual orientation. If you have special accommodation needs or require this document in alternative format, please contact Nancy Ware at (509) 372-7912 (Voice) or use the Washington State Relay operator by dialing either 711 or 1-800-833-6388 (TTY).