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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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May 11, 2016

16-NWP-089

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 24, 2016 for the 241-CX Tank System,
RCRA Site ID: WA7890008967, NWP Compliance Index No. 16.557

Dear Ms. Charboneau and Mr. Ciucci:

Thank you for your staff's time during the 241-CX Tank System Non-Financial Records Review inspection on March 24, 2016. The Department of Ecology's compliance report of this inspection is enclosed. The report cites one area of non-compliance and one concern listed in the compliance problems section of the report.

If you have questions or need further information, please contact me at (509) 372-7909 or edward.holbrook@ecy.wa.gov.

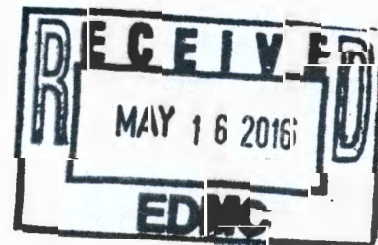
Sincerely,

Edward Holbrook
Dangerous Waste Compliance Inspector
Nuclear Waste Program

tkb

Enclosure

cc: See page 2



Ms. Charboneau and Mr. Ciucci
May 11, 2016
Page 2

16-NWP-089
241-CX Tank System
RCRA Site ID: WA7890008967
NWP Compliance Index No.: 16.557
Inspection Date: March 24, 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
Shawna Berven, DOH
John Martell, DOH
Kathy Conaway, Ecology
Suzanne Dahl, Ecology
Kelly Elsethagen, Ecology
Edward Holbrook, Ecology
Jared Mathey, Ecology
Nina Menard, Ecology
Tim Mullin, Ecology
John Price, Ecology
Alex Smith, 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: 16.557

cc w/o enc:

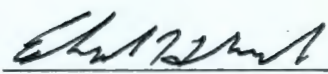
Rod Skeen, CTUIR
Gabriel Bohace, NPT
Russell Jim, YN
NWP Reader File

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

Site: 241-CX Tank System
RCRA Site ID: WA7890008967
Inspection Date: March 24, 2016
Site Contacts: Joel Williams Jr., CH2M Hill Plateau Remediation Company (CHPRC)
Tony McKarns, United States Department of Energy (USDOE)
Phone: (509) 376-4782- Joel Williams Jr.
FAX: (509) 372-2828- Joel Williams Jr.
Site Location: Hanford Site, 200 East Area
Benton County, WA
At This Site Since: 1943 **NAICS #:** 54171, 56221, and 924110
Current Site Status: Dangerous Waste Management Unit Group / Closure Unit Group 15
Compliance Index: 16.557

Ecology

Lead Contact: Edward Holbrook **Phone:** (509) 372-7909 **FAX:** (509) 372-7971
Other Representatives: N/A
Report Date: May 10, 2016
Report By: Edward Holbrook



(Signed)

5/10/16

(Date)

Site Location

The Hanford Site was assigned a single United States Environmental Protection Agency (EPA) identification number, and is considered a single Resource Conservation and Recovery Act of 1976 facility, even though the Hanford Site contains numerous processing areas spread over a large geographic area. The Hanford Site is approximately a 583 square mile tract of land located in Benton County, Washington. It is divided into a number of dangerous waste management units (DWMUs) that 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 use only a few small portions 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 Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, WA7890008967, Revision 8C*, (hereafter referred to as the Permit).

Owner/Operator Information

The USDOE is the owner and operator of the 241-CX Tank System and oversees waste management and cleanup activities ongoing at the Hanford Site. CHPRC is contracted by the USDOE to co-operate the 241-CX Tank System.

Facility Background

According to the 241-CX Tank System Permit Application Part A Form, Revision 6, dated October 1, 2008, the tank system is located east of Building 209-E in the 200 East Area of the Hanford Site. The 241-CX Tank System consists of three tanks. The history and processes associated with the tanks are as follows.

Tank 241-CX-70: This tank has a design capacity of 30,000 gallons. The dangerous waste codes associated with the Tank 241-CX-70 mixed waste are D002 and D007. The waste also

carries the state-only toxic dangerous waste code, WT02. The annual quantity of waste that was treated and stored in Tank 241-CX-70 was approximately 19,000 pounds.

Tank 241-CX-70 was used for approximately one year in the early 1950's, to store radioactive process waste from the reduction and oxidation (REDOX) pilot studies. The REDOX Facility was used for separating plutonium and uranium from irradiated reactor fuel. Waste removal activities for Tank 241-CX-70 were initiated in 1987 with the construction of a sluicing and pumping system. Large volumes of water were used to sluice and pump the mixed waste from Tank 241-CX-70 to the Double-Shell Tank System (Operating Unit Group 12). Approximately 140,000 gallons of water were used to sluice the original waste volume of 10,300 gallons down to 750 gallons. The remaining 750 gallons were kept in Tank 241-CX -70 until December 20, 1991, at which time the waste was placed in containers and transferred to the 224-T Transuranic Waste Storage and Assay Facility.

Tank 241-CX-71: This tank has a design capacity of 1,000 gallons. The waste code associated with the Tank 241-CX-71 mixed waste is the state-only toxic dangerous waste code, WT02. The annual quantity of waste that was treated and stored in Tank 241-CX-71 was approximately 33,400 pounds. Tank 241-CX-71 was used from 1952 through 1957 for neutralizing the 201-C process condensate and the coil and condenser cooling water. The waste was neutralized by contacting a bed of limestone aggregate placed in the tank. After a decontamination flush in June 1957, Tank 241-CX-71 was placed out of service.

Tank 241-CX-72: This tank has a design capacity of 2,340 gallons. The dangerous waste codes associated with the Tank 241-CX-72 mixed waste are D002, D004 through D011. The waste also carries the state-only toxic dangerous waste codes, WT01 and WT02. There is also the possibility that decontamination flushes that occurred from the Strontium Semiworks Complex, were transferred to Tank 241-CX -72. The annual quantity of waste treated and stored in Tank 241-CX-72 was approximately 19,530 pounds.

Tank 241-CX-72 was used for approximately one year in 1956 when 2,305 gallons of Strontium Semiworks Complex waste was transferred into the tank for storage. Tank 241-CX-72 was used as an experimental tank to study the concentration of waste generated from the Strontium Semiworks Complex pilot studies. The tank also studied the characteristics of self-concentrating waste from the Plutonium Uranium Extraction (PUREX) process where the waste in the tank was heated until nearly dry.

From 1960 through 1967, Tank 241-CX-72 remained idle until taken out of service in 1967. In 1978, the tank was documented as empty. Level measurements were taken in 1986, indicating the tank was empty, after which the tank was filled with grout. In 1988, a rod from the paddle system of Tank 241-CX-72 was pulled out of the tank. Based on the contamination found on the rod, the tank is estimated to have 24 feet of grout, which was placed over an 11-foot deep heel of mixed waste.

Compliance Background

On June 30, 2015, USDOE's and CHPRC's 241-CX Tank System inspection schedule and inspection records were reviewed as part of a Washington State Department of Ecology (Ecology) scheduled inspection. Ecology found one area of non-compliance and three areas of concern during the review of the records. The December 1, 2015, compliance report cited Washington Administrative Code 173-303-320(2)(d), for a failure to maintain inspection logs with the inspectors printed name, time of the inspection, and the date and nature of repairs or remedial actions taken.

On February 8, 2016, Ecology received documentation of corrective actions taken to return to compliance, which indicated the areas of non-compliance were corrected.

Inspection Summary

On March 24, 2016, I sent an email titled, *Ecology Inspection Notice – Compliance Index # 16.557* to USDOE and CHRPC. In the notice I described that Ecology was conducting an inspection of 241-CX Tank System and reviewing records as requested below.

Please provide a copy of the general inspection schedule, Technical Procedure 2CP-SUR-C-04001 CPSM-PRO-OP-52673 Surveillance of Hot Semi Tanks 241-CX-70, -71, & -72 (I currently have Revision 2 Change 2, if this document has been revised then provide a copy with the latest revisions), and all records of inspection for the last year for 241-CX Tank System.

On March 31, 2016, I received the following documentation from Mr. Joel Williams, CHPRC.

- *Response Table: Washington State Department of Ecology (Ecology) Request For Documents/Information Per Email Dated March 24, 2016 For The 241-CX Tank System (Closure Unit 15) Non-Financial Records Review Compliance Inspection Dated March 24, 2016*
- *Data Sheets from 2CP-SUR-C-04001, Surveillance of Hot Semi Tanks 241-CX-70, -71, & -72 Revision 2, Change 2*
 - *Data Sheet 1 – Site Surveillance*
 - *Data Sheet 2 – Hot Semi Tanks 241-CX-70, -71, & -72 Surveillance – Comments Sheet*

I observed the Data Sheet 1 – Site Surveillance, listed 241-CX-70 tank site, 241-CX-71 tank site, and 241-CX-72 greenhouse. I observed next to the 241-CX-70 tank site, 241-CX-71 tank site, and 241-CX-72 greenhouse two initials and a written date of “11-11-15” for each listed tank.

I observed the items to be inspected on the Data Sheet 1 – Site Surveillance are as follows.

- *Site Secure – Criteria: Site boundary in place; no signs of removal or tampering of flanges on exposed tank risers; flanges are tightly sealed.*
- *Structural Integrity – Criteria: There is no new damage or deterioration, e.g., structural faults, damaged/friable asbestos, openings, or holes in buildings/walls/ceilings/doors that would allow pests into the facility, no unpainted or deteriorating wooden pieces, upper edge of roof and flashing is in good condition, and there are no obvious abnormal or unsafe conditions.*
- *Animal/Pest Intrusion – Criteria: There is no new evidence of animal issues/intrusion, e.g., bird nests/droppings, anthills, beehives, termite nests, etc.*
- *Housekeeping – Criteria: Accumulation of dirt, sand, debris, tumbleweeds, etc., or equipment, material, etc., in/around the building is not acceptable.*
- *Occupational Hazards – Criteria: There are no occupational hazards that may endanger personnel, e.g., tripping and slipping hazards, broken steps, missing handrails, exit door egress locked or obstructed.*
- *Signage – Criteria: No missing or fallen signs or postings (e.g., radiological, confined space, electrical, etc.) Gates and entries to the facilities should be posted with “WARNING NO UNAUTHORIZED ACCESS” (or equivalent wording) signs.*

- **Containers** – Criteria: *There are no unlabeled or unidentified containers or hazardous materials observed.*
- **Combustible Material Storage** – Criteria: *There is no observed instance of unauthorized storage of combustible materials.*
- **Combustible Loading** – Criteria: *Combustible loading conditions are within allowable limitations and consistent with analyzed accidents.*
- **Subsidence** - Criteria: *There is no evidence of land subsidence.*

I observed that all of the items were marked “yes,” except for “Signage” on the Data Sheet 1. I observed “Signage” was marked “no,” with a circled one written next to the check mark on the Data Sheet 1. On page 2 of the Data Sheet 1 – Site Surveillance I observed spaces for the printed name, signature and dates of the inspection for the following.

- *Performed by NCO 1*
- *Performed by FPE or Delegate*
- *Performed by NCO 2*
- *FWS Review*

I observed that page 2 was marked out with written asterisk and “NA.” I did not observe any of the spaces filled out with the printed name, signature, or date. Near the bottom of Page 2 I observed another asterisk with the following written comment.

** Refer to data sheet 2 page 14 for approvals. W. Doremus II, 3-30-16*

I also observed the handwritten signature of W. Doremus II, next to the written name.

I observed the following on the Data Sheet 2 – Hot Semi Tanks 241-CX-70, -71, & -72 Surveillance – Comments Sheet.

Multiple signs need removed and replaced. West side of building has 2 roof access signs. Need only one sign. CX-003.

Sign within sign needs removed CX-004.

No signs on North side. CX-011.

241-CX-70 need sign replaced. CX-015.

241-CX-71 needs to have 200 Area S&M Facility Sign?

Hanford fire may require this bldg. that houses CX-72 to have a bldg. number. It currently has no bldg. number.

Below, on the Data Sheet 2, in the “Performed by NCO 1” and “Perform by NCO 2” I observed handwritten names, signatures, and the date of “11-11-15.” The handwritten names and signatures appeared to be that of the inspectors. I did not observe the time of the inspection on the Data Sheet 1 or Data Sheet 2 provided. There appears to be a remedial action taken, with the following note observed at the bottom of the Data Sheet 2.

See work record entry, 1/14/16 per DA Ray Stevens this is N/A

Next to the note dated “1/14/16” I observed initials, but could not identify the initials.

On February 6, 2016, I received an updated Data Sheet 1 template (used by inspectors during inspections) for the 241-CX Tank System. The updated Data Sheet 1 provided a space for the time of the inspection. Ecology’s compliance report (Compliance Index No.: 15.540) identified the missing time of the inspection as an area of non-compliance on December 1, 2015. The latest annual surveillance of the 241-CX Tank System was conducted on November 11, 2015.

Compliance Problems

The Dangerous Waste inspection on March 27, 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 60 days of receipt 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: Edward Holbrook
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 Edward Holbrook 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:
Edward Holbrook at (509) 372-7909**

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.

Compliance Index #: 16.557
May 10, 2016
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241-CX Tank System
RCRA Site ID: WA7890008967
Inspection Date: March 24, 2016

Observations: I did not observe the time of the inspection on Data Sheet 1 or Data Sheet 2 for the November 11, 2015, inspection.

Action Required: On February 6, 2016, Ecology received documentation that the times of the inspection will be documented on the Data Sheet 1 – Site Surveillance. I observed the updated Data Sheet 1 has a space to document the time of the inspection. **No Further Action Required.**

Concern:

- 1) The use of the Data Sheet 2 printed name, signature, and date spaces to identify when and who completed the inspection criteria on the Data Sheet 1 could lead to an incomplete inspection log. Instructions for filling out and completing Data Sheet 1 and Data Sheet 2 are provided in the technical procedures, *2CP-SUR-C-04001, Surveillance of Hot Semi Tanks 241-CX-70, -71, & -72.*

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 Edward Holbrook at (509) 372-7909 (Voice) or use the Washington State Relay operator by dialing either 711 or 1-800-833-6388 (TTY).