



0083139

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

September 11, 2009

Mr. Thomas K. Teynor, Director
Richland Operations Office
United States Department of Energy
P.O. Box 550, MSIN: A5-10
Richland, Washington 99352

Re: Revised *Dangerous Waste Closure/Post Closure Plan for the 1706-KE Waste Treatment System*, DOE/RL-2009-29, Revision 2

Reference: Letter 09-AMRC-0140, dated June 24, 2009, from T. K. Teynor, USDOE-RL, to J. A. Hedges, Ecology, "Submittal of Revised Dangerous Waste Closure/Post Closure Plan for the 1706-KE Waste Treatment System for the State of Washington Department of Ecology (Ecology) Approval"

Dear Mr. Teynor:

The Department of Ecology reviewed the referenced closure plan. The enclosed closure plan contains our comments and changes. We appreciate your work on documenting the removal action. Ecology will approve the closure plan once we verify our comments are incorporated.

If there are any questions, contact me at 509-372-7984.

Sincerely,

Leslie (Les) A. Fort
Acting Environmental Restoration Project Manager
Nuclear Waste Program

aa
Enclosure

cc: See page 2

RECEIVED
SEP 14 2009

EDMC



0083139

Mr. Thomas K. Teynor

September 11, 2009

Page 2

cc w/o enc:

Rod Lobos, EPA

Gabriel Bohnee, NPT

Russell Jim, YN

Susan Leckband, HAB

Ken Niles, ODOE

cc w/enc:

Administrative Record: 100K/Environmental Restoration and T-1-3

Environmental Portal

Hanford Operating Record General File

USDOE-RL Correspondence Control

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SEP 11 2009

EDMC

DOE/RL-2009-29
Revision 2

Hanford Facility Dangerous Waste Closure/Postclosure Plan for the 1706-KE Waste Treatment System

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



U.S. DEPARTMENT OF
ENERGY

Richland Operations
Office

P.O. Box 550 Richland,
Washington 99352

DOE/RL-2009-29
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P.O. Box 550 Richland,
Washington 99352

J.D.A. 9/02/2009
Release Approval Date

DOE/RL-2009-29
Revision 2

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Executive Summary

This closure plan addresses the closure of a waste treatment system located in the 100-K Area of the Hanford Site. The 1706-KE Waste Treatment System was regulated as a Resource Conservation and Recovery Act of 1976¹ treatment, storage, and/or disposal unit. The system had four major components (an ion exchange column, a waste accumulation tank, an evaporator unit, and a condensate collection tank) that treated a variety of laboratory wastes. The system has been clean closed pursuant to WAC 173-303-610, "Closure and Post-Closure."² The closure plan describes the requirements and activities implemented for closure by removal of the components and ancillary equipment. All waste was removed from the components prior to removal and disposal of the 1706-KE Waste Treatment System. The components and ancillary equipment have been removed and disposed in accordance with solid and dangerous waste regulations and Environmental Restoration Disposal Facility waste acceptance criteria. Clean closure has been achieved. Therefore, no postclosure care or monitoring requirements are included in this closure plan.

Comment [gpd1]: This unit was NOT regulated as a TSD until the spill which caused it to be a TSD. It was a Research Design and Development (RD&D) unit which is not regulated by RCRA.

Comment [gpd2]: USDOE/contractor considers the 1706-KE to be clean closed.

Clean Closure has not been achieved, until Ecology accepts the PE Closure certification, and only then.

¹ Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq. ² WAC 173-303-610, "Dangerous Waste Regulations," "Closure and Post-Closure," Washington Administrative Code, Olympia, Washington.

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Terms

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act of 1980

CFR Code of Federal Regulations

DOE U.S. Department of Energy

Ecology Washington State Department of Ecology

EPA U.S. Environmental Protection Agency

ERDF Environmental Restoration Disposal Facility

RCRA Resource Conservation and Recovery Act of 1976

Tri-Party Agreement Ecology et al., 1989, Hanford Federal Facility Agreement and Consent Order

WAC Washington Administrative Code

WTS waste treatment system

1 Introduction

This closure plan describes the completed activities and performance standards for closure of the 1706-KE Waste Treatment System (WTS), a waste management unit that managed dangerous waste. The 1706-KE WTS is a Resource Conservation and Recovery Act of 1976 (RCRA) treatment, storage, and/or disposal unit. The U.S. Department of Energy (DOE), Richland Operations Office, U.S. Environmental Protection Agency (EPA), and Washington State Department of Ecology (Ecology) have agreed to integrate the cleanup and closure of the 1706-KE WTS with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) process. The agreement called for the 1706-KE WTS to be remediated based on the requirements of EPA/541/R-99/039, *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6 and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (100 Area Remaining Sites)*, as provided by EPA, 2004, *Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision*. Field implementation of the closure followed applicable sections of DOE/RL-96-17, *Remedial Design Report/Remedial Action Work Plan for the 100 Area* and DOE/RL-96-22, *100 Area Remedial Action Sampling and Analysis Plan*, as well as other documented agreements, such as the Tri-Party Agreement (Ecology et al., 1989, *Hanford Federal Facility Agreement and Consent Order*) change notices made during the closure action.

The 1706-KE WTS was located within the 1706-KE Building in the 100-K Area of the Hanford Site (Figure 1) and had four major components (an ion exchange column, a waste accumulation tank, an evaporator unit, and a condensate collection tank) depicted in Figures 2 through 5. The 1706-KE WTS has been nonoperational since 1987. All waste has been removed from the 1706-KE WTS components and the components and ancillary equipment have been removed and disposed.

The 1706-KE WTS underwent clean closure to the performance standards of WAC 173-303-610(2)(b)(ii), "Closure Performance Standard," with respect to all dangerous waste contamination from dangerous waste/RCRA operations. To accomplish clean closure, the unit and ancillary equipment were removed and disposed to the Environmental Restoration Disposal Facility (ERDF). Because waste or waste constituents were left in place at the completion of closure, no postclosure care or monitoring is anticipated.

The closure activities under this plan supported completion of Milestone M-16-52 by July 31, 2009.

Comment [gpd3]: By default

Comment [gpd4]: Became a RCRA TSD in (give date).

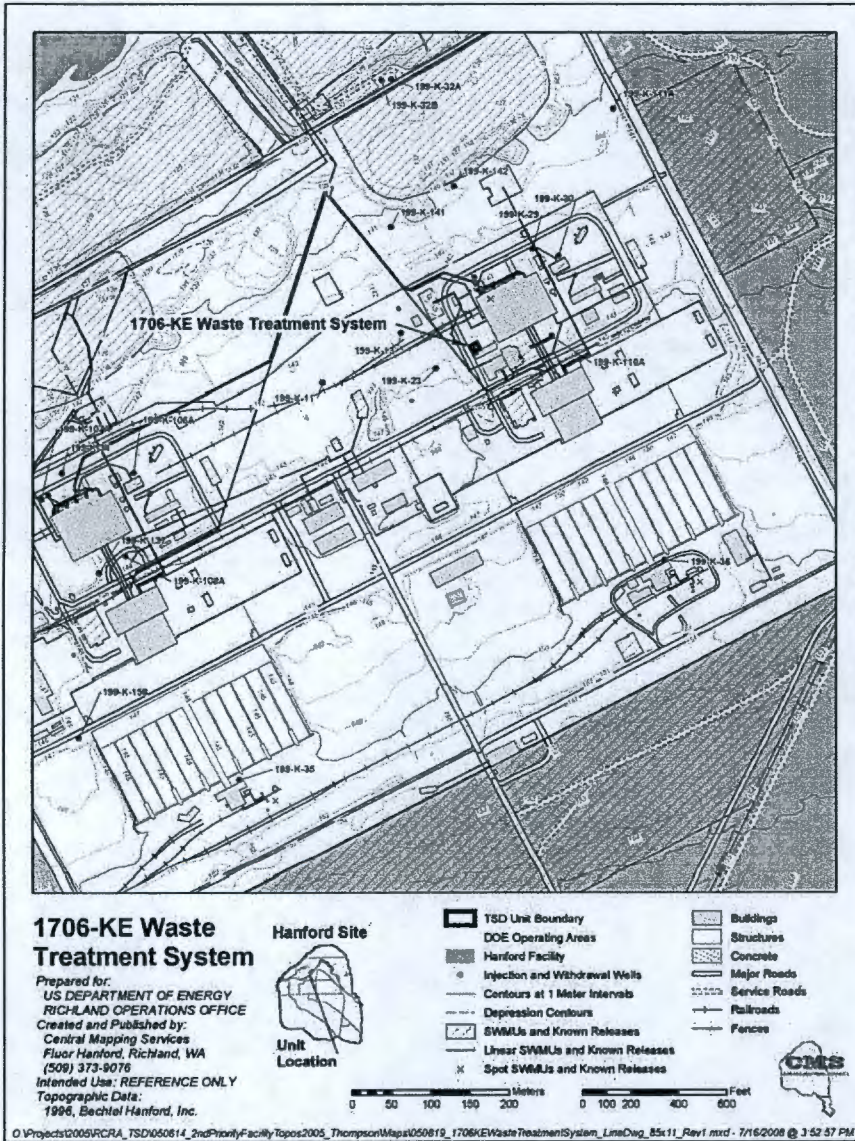
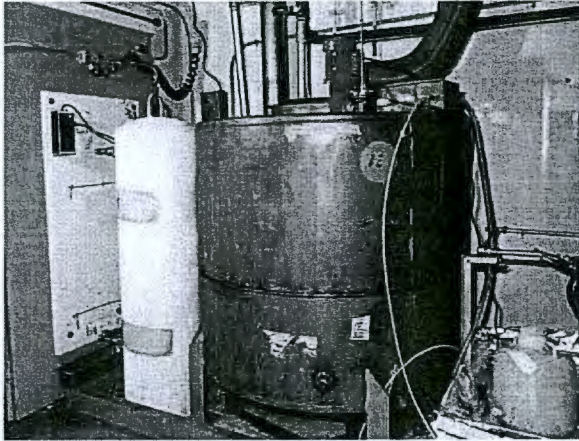


Figure 1. 1706-KE WTS Facility Location



Ion Exchange Column & Waste Accumulation Tank

8700734-1CN Photo Taken 1987

NOTE: Ion exchange column (left) has been removed since the photograph was taken.

Figure 2. Ion Exchange Column and Waste Accumulation Tank

Comment [gpd5]: Please fix to read, "NOTE: Ion exchange column (above) has been removed since this photograph was taken."

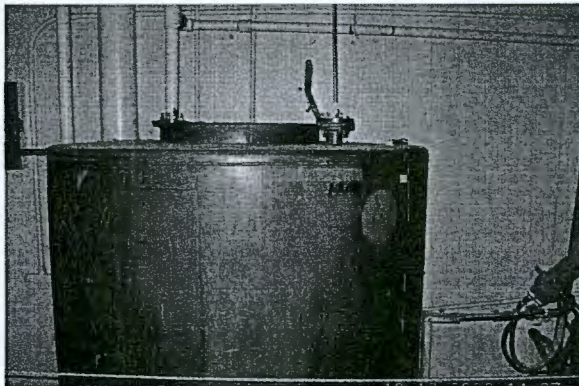
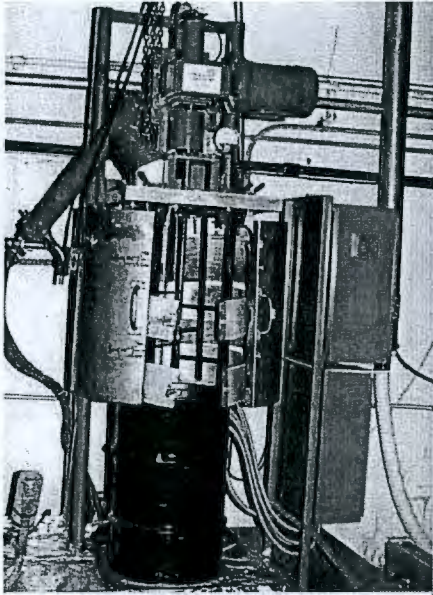
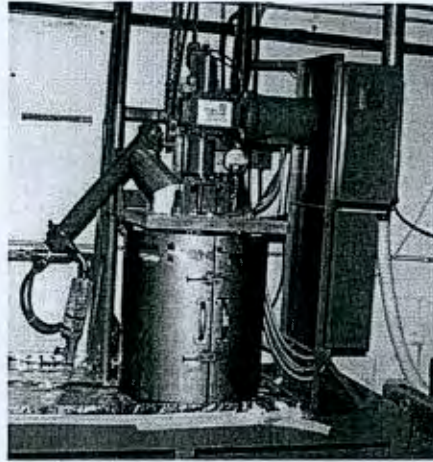


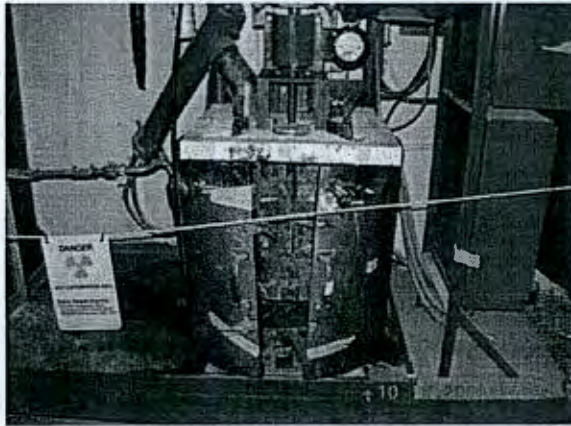
Figure 3. Waste Accumulation Tank



Evaporator Unit in Up Position



Evaporator Unit in Down Position Evaporating Waste



Evaporator Unit

Figure 4. Evaporation Unit

Comment [gpd6]: Showing spill/overflow.

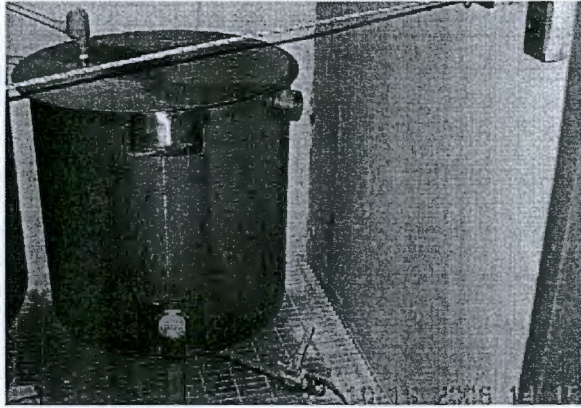


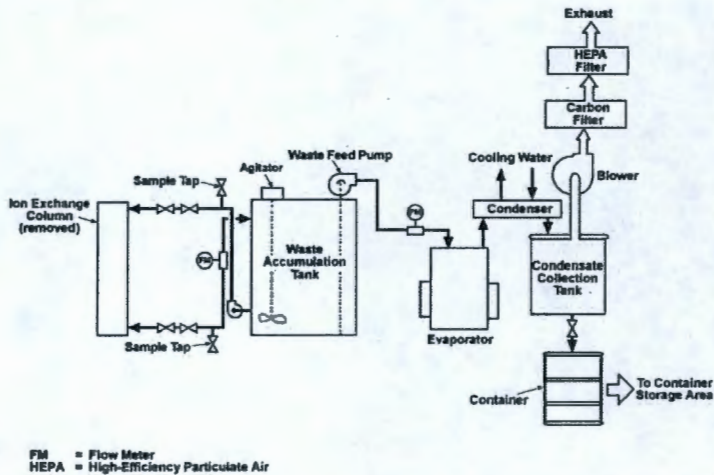
Figure 5. Condensate Collection Tank

2 Facility Description

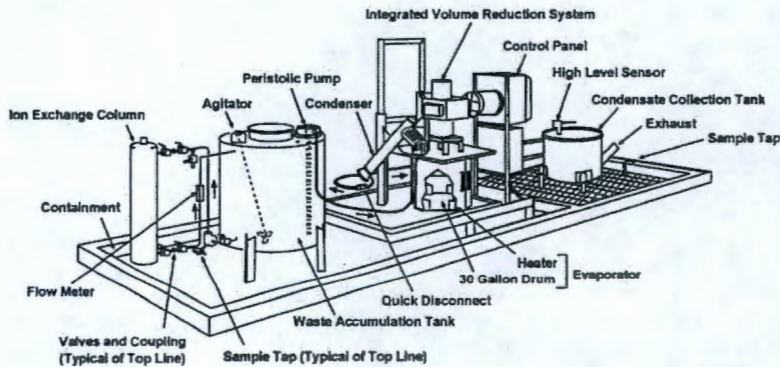
The 1706-KE WTS consisted of a 114 L (30-gal) evaporator unit, a 2,082 L (550-gal) waste accumulation tank, a 0.14 m³ (5-ft³) mixed-bed resin ion exchange column, and a 363 L (96-gal) condensate collection tank (Figure 6).

The maximum process design capacities for tank storage (S02) are 2,445 L (646 gal) and for tank treatment-other (T04) is 5,678 L (1,500 gal).

Comment [gpd7]: below



M765-L1
3-7-87



M765-L2
3-28-87

Figure 6. 1706-KE WTS Schematics

3 Process Information

The 1706-KE WTS was designed and installed for waste management operations in July 1986. The unit was procured to treat mixed waste generated in the laboratories of the 1706-KE Building. The 1706-KE WTS was designed to treat approximately 6,804 kg (15,000 lb) of waste per year.

Waste generated in the 1706-KE Building was transferred from the waste accumulation tank to the ion exchange column and then continuously recirculated to remove the ionic constituents from the waste stream. The waste then was transferred to the evaporator. The evaporator heated and boiled the liquid

Comment [gpd8]: Wasn't it designed and installed for R&D activities.

waste to steam to form residual salts prior to solidification. The steam condensed and collected in the condensate collection tank with the exhaust from the evaporation unit being passed through a high-efficiency particulate air filter prior to discharge. The residual salts were mixed with heated epoxy for solidification and disposal.

Operation of this unit ceased shortly after initial startup because of unanticipated anomalies during operation. In August of 1986, epoxy resin in the evaporator overheated, possibly caused by a development of a steam pocket within the epoxy. Thick white vapor was observed from the 1706-KE WTS and some epoxy was ejected through the observation port onto the ceiling and adjoining wall. The system was immediately shut down. The epoxy cooled and solidified, as shown in Figure 7. The room and the equipment were decontaminated for continued use. The waste associated with the release was removed and appropriately managed. No waste was released outside the radiologically posted area or into the environment (D/T 86-01, 1986, *Epoxy Overheat in 1706-KE 100K*). The 1706-KE WTS has not operated since 1987.

Comment [gpd9]: Where did it go?

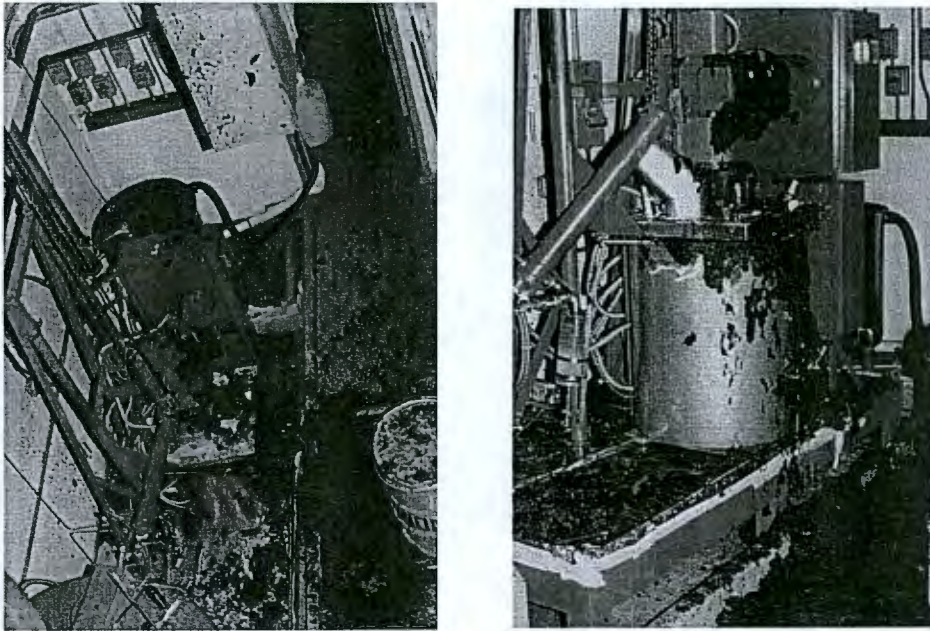


Figure 7. 1986 Epoxy Incident in Evaporator Unit

In July 1987, the accumulation tank was disconnected from the other components, emptied, and cleaned so that it could be used as the feed tank for the Liquid Effluent Treatment Facility studies. To ensure the feed stock would not be contaminated, the tank was physically cleaned and decontaminated with scrub brushes and detergents. It then was filled with demineralized water, to which trace amounts of cesium and iodine were added to simulate 100-N Reactor water. The water was processed through candidate ion exchange resins to evaluate the resins for use in the Liquid Effluent Treatment Facility. The effluent water from these tests was stored in drums, analyzed, and released. At least 10 tanks full were processed between July 1987 and February 1988 when testing ceased.

From early 1988 to March of 1990, the waste accumulation tank was used to collect effluents and loop bleeds from the TF-9 high-pressure test loop, which performed long-term corrosion tests in support of the 100-N Reactor tritium fuel cladding program. The effluent in the accumulation tank consisted of demineralized water with ammonium hydroxide added to a pH of 10.3. In addition, a small quantity of low oxidation metal ions solution, ammonium citrate, and 100-N Reactor water were added as part of the laboratory cleanup. The effluent in the accumulation tank was analyzed and treated, as needed. Then tank effluent recirculated through an ion exchange column and was analyzed for radionuclide content.

No waste remained in the 1706-KE WTS condensate collection tank (Figure 8), the evaporator, or waste accumulation tank. Waste removed from the 1706-KE WTS has been disposed to the Low-Level Burial Grounds (WHC, 1990, "1706-KE Waste Treatment System Tank;" WHC, 1996, "Low-Level Burial Grounds Solid Waste Storage/Disposal Records, 1706-94-001700 and 1706-96-000016).

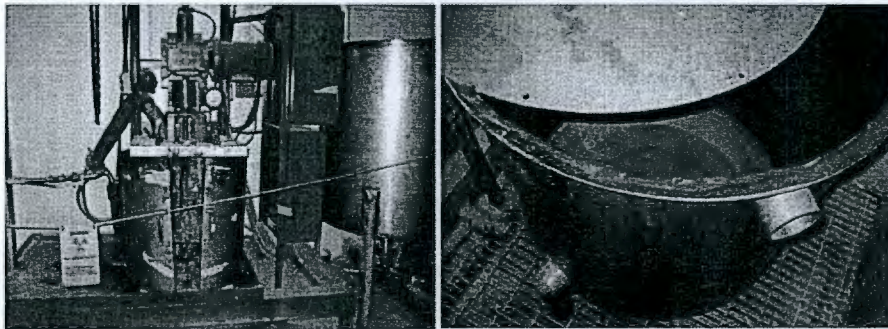


Figure 8. Current 1706-KE WTS Photographs of the Evaporator and the Condensate Collection Tank

The 1706-KE WTS components and ancillary equipment used in operations were removed using standard industrial equipment for structural demolition.

To accomplish removal of the condensate collection tank, evaporator unit, and waste accumulation tank, a hatchway located immediately above the 1706-KE WTS area was used, which allowed direct removal of the components to the outside of the building and for loading into ERDF shipping containers for disposal at the ERDF. Because of the size of the waste accumulation tank in relation to the hatchway, size reduction was performed cutting the component into two halves. The tank halves were then loaded into shipment K100-09-1346. The condensate collection tank and evaporator unit were lifted intact through the hatchway, and loaded into a shipping container in preparation for disposal at the ERDF. Following removal of the tanks, the room in which the tanks were located was cleaned of debris and surveyed for radiological contamination. Incidental debris, including piping and other materials present during the July 7, 2009 walkthrough, was removed and disposed by packaging in ERDF containers and transported to the ERDF. All remaining incidental radiological contamination was fixed in place. No evidence of the WTS-related debris was found. Figure 9 provides photographs of the 1706-KE WTS area, with all components and debris removed as evidence of achieved of clean closure.

Comment [gpd10]: below

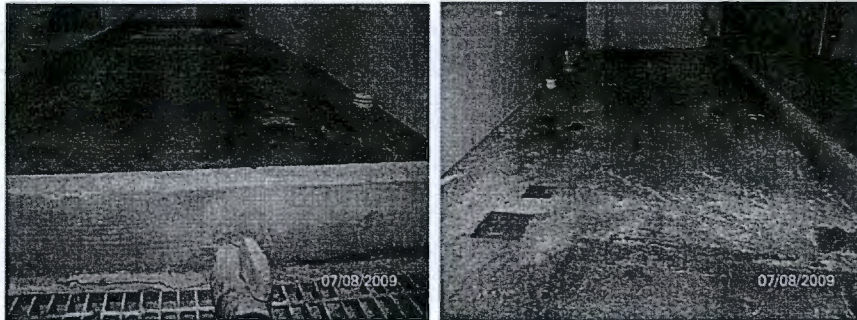


Figure 9. 1706-KE WTS Area After Clean Closure

Removal and packaging of the tanks was accomplished during the period from June 15 through July 1, 2009. The tanks were shipped to the ERDF on July 9, 2009. As of July 9, 2009, all components of the 1706-KE WTS were removed from the 1706-KE Facility and shipped for disposal at the ERDF. The Onsite Waste Tracking Forms K100-09-1346 and K-100-09-1347 document the shipment and disposal of the tanks which were loaded on July 1, 2009. The shipments were transported to ERDF on July 9, 2009. The appendix provides the shipping documentation.

4 Waste Characteristics

The 1706-KE WTS was designed and installed to treat a variety of laboratory waste. The majority of this waste was expected to be acidic or caustic solutions (D002, characteristic, corrosive, dangerous waste).

Comment [gpd11]: as Research and Development unit and

5 Closure Strategy and Performance Standards

This section discusses achievement of the closure strategy and performance standards.

5.1 Closure Strategy

Clean closure of the 1706-KE WTS has been achieved and no further actions are required.

5.2 Performance Standards

Clean closure of the 1706-KE WTS has been accomplished using the closure standard in WAC 173-303-610(2)(b)(ii), which states the following:

For all structures, equipment, bases, liners, etc., clean closure standards will be set by the department on a case-by-case basis in accordance with the closure performance standards of WAC 173-303-610(2)(a)(ii) and in a manner that minimizes or eliminates post-closure escape of dangerous waste constituents.

WAC 173-303-610(2)(a)(ii) further states that a facility must be closed in a manner that meets the following:

Controls, minimizes or eliminates to the extent necessary to protect human health and the environment, post-closure escape of dangerous waste, dangerous constituents, leachate,

contaminated run-off, or dangerous waste decomposition products to the ground, surface water, ground water, or the atmosphere.

The clean closure performance standard involved the physical removal and disposal of the 1706-KE WTS components, including ancillary equipment. To clean close, all components have been removed and managed as waste.

For contaminated structural components of the 1706-KE WTS (e.g., unit components, ancillary equipment), the closure performance standard will be a "clean debris surface" to establish that a component has been decontaminated, or whether the unit or ancillary equipment can be designated as non-hazardous debris. Attainment of a clean debris surface can be verified visually, in accordance with the standard in WAC 173-303-140(2)(a), "Applicability," incorporating 40 CFR 268.45, "Treatment Standards Based on HTMR," Table 1, footnote 3, which states the following.

Comment [gpd12]: spell out

Clean debris surface" means that the surface, when viewed without magnification, will be free of all visible contaminated soil and hazardous (dangerous) waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits will be limited to no more than 5 % of each square inch of surface area.

6 Closure Certification

Closure activities were performed consistent with DOE/RL-96-17 and Ecology Publication 92-91, *Dangerous Waste Regulations Chapter 173-303 WAC*.

Certification of closure will be submitted in accordance with WAC 173-303-610(6), "Certification of Closure." Clean closure has been completed.

At the time of closure certification, the RCRA corrective action status of the 1706-KE WTS will be determined, in accordance with Permit Condition II.Y.2.c.

7 Postclosure Plan

No postclosure activity is required following successful completion of clean closure of the 1706-KE Waste Treatment Unit.

8 References

40 CFR 268.45, "Land Disposal Restrictions," "Treatment Standards for Hazardous Debris," *Code of Federal Regulations*. Available at: http://www.access.gpo.gov/nara/cfr/waisidx_08/40cfr268_08.html.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq. Available at: <http://www.epa.gov/oecaagct/lcla.html#Hazardous%20Substance%20Responses>.

DOE/RL-96-17, *Remedial Design Report Remedial Action Work Plan for the 100 Area*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://www2.hanford.gov/arpir/?content=findpage&AKey=D6542354>.

DOE/RL-96-22, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://www5.hanford.gov/arpir/?content=detail&AKey=D6542136>.

D/T 86-01, 1986, *Epoxy Overheat in 1706-KER 100K*, UNC Nuclear Industries, Richland, Washington. Available at: <http://www5.hanford.gov/arpir/?content=detail&AKey=0903311061>.

Ecology Publication 92-91, 2000, *Dangerous Waste Regulations Chapter 173-303 WAC*, Washington State Department of Ecology, Olympia, Washington. Available at: <http://www.ecy.wa.gov/biblio/9291.html>.

Ecology, EPA, and DOE, 1989, *Hanford Federal Facility Agreement and Consent Order*, 2 vols., as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington. Available at: <http://www.hanford.gov/?page=91&parent=0>.

EPA, 2004, *Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. Available at: <http://www5.hanford.gov/arpir/?content=findpage&AKey=D4855290>.

EPA/541/R-99/039, 1999, *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6 and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (100 Area Remaining Sites)*, U.S. Environmental Protection Agency, Washington State Department of Ecology, and U.S. Department of Energy, Olympia, Washington. Available at: <http://www.epa.gov/superfund/sites/rods/>.

Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq. Available at: <http://www.epa.gov/epawaste/inforesources/online/index.htm>.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, Olympia, Washington. Available at: <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303>.

– WAC 173-303-140, "Land Disposal Restrictions." – WAC 173-303-140(2)(a), "Applicability." – WAC 173-303-610(2), "Closure Performance Standard." – WAC 173-303-610(6), "Certification of Closure."

WHC, 1990, "1706-KE Waste Treatment System Tank" (Internal Memo to L. A. Garner from B. B. Emory), Westinghouse Hanford Company, Richland, Washington, March 30. Available at: <http://www2.hanford.gov/arpir/?content=findpage&AKey=0903311058>.

WHC, 1996, *Low-Level Burial Grounds Solid Waste Storage/Disposal Records, 1706-94-001700 and 1706-96-000016*, Westinghouse Hanford Company, Richland, WA. Available at: <http://www2.hanford.gov/arpir/?content=findpage&AKey=0903311062>.

Appendix

Shipping

Records

Shipping Records

The ERDF accepted the 1706-KE Waste Treatment System tanks transported on July 9, 2009. Onsite Waste Tracking Forms K100-09-1346 and K-100-09-1347 document the shipment and disposal of the tanks.

One-Use Waste Tracking Form K100-09-1346		Page 1 of 1
Disposal location information		
1. Disposal Coordinates	N: _____	W: _____
2. LTR	_____	
3. Disposal: Initials _____ Date _____		
3a. <input checked="" type="checkbox"/> Decease <input type="checkbox"/> Stockpile <input type="checkbox"/> Treatment - Batch # _____		3b. <input type="checkbox"/> Placed Pending Action* <input type="checkbox"/> MACRO <input type="checkbox"/> GROUT FILL
4. Transport approval number K100-09-1346		5. Date Shipped _____
6. Generator's US EPA ID NO: WA78B008967	7. Generator's name & mailing address: U.S. Department of Energy Richland Operations, P.O. Box 550 Richland, WA 99352	8. Transporter company name: WCH
9. Point of Origin: 100KE / OHC	10. Waste vol. (m ³) 11.3398	11. TI N/A
12. Billing Code XR0919	13. Date Filled 7-1-09	14. Label N/A
15. Net wt. (kg) 18143.7	16. Gross wt. (kg) 18143.7	17. Exclusive Use Shipment <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
18. Container# 2935	19. Container BULK METAL BOX	20. # of Containers 1
21. US DOT description (PSN, HC, ID number, PG) RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY, LSA (II), FISSILE EXCEPTED, 7, UN3321, SOLID, ELEMENTAL, EXCLUSIVE USE SHIPMENT		
SPA Checklist #: N/A DE-Ct: 2.32E-05 NRC CLASS: A		
22. Waste Profile No.: WP1706KE001 Rev# 0		23. Template: 1706KE DEMO
<small>This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.</small>		
24. Signature HASSON, JOHN W <i>[Signature]</i>		25. LDR Treatment Required <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
26. Applicable waste codes NONE		
27. Emergency Contact 509-373-3800		28. Total TBqs 1.80E-02
29. Sum of Fractions: Initial: 3.46E-04 Combustible: 2.24E-04 Soil, Powder, Metals: 1.17E-04 Grout, Concrete: 1.03E-04		
30. Description STANDARD BULK WASTE		
WSRP: OHC-RP-W0012 001 <i>split tank</i>		
31. Soil/Debris Estimate: <input type="checkbox"/> SOIL <input type="checkbox"/> 50/50 <input checked="" type="checkbox"/> Debris <input type="checkbox"/> All Metal		
32. Soil/Debris Actual (optional): <input type="checkbox"/> SOIL <input type="checkbox"/> 50/50 <input type="checkbox"/> Debris <input type="checkbox"/> All Metal		
33. Radionuclides		
Radionuclide	Limit (Ci/m ³)	Actual (Ci/m ³)
Am-241	5.40E-02	1.87E-07
C-14	5.10E+00	5.71E-03
Cp-60	NL	2.51E-03
Cs-137	3.20E+01	8.16E-07
Fe-55	NL	1.76E-04
H-3	NL	3.92E-04
Nb-93m	NL	7.10E-05
Ni-59	2.10E+02	2.91E-04
Ni-63	7.00E+02	2.85E-02
Pu-239	2.90E-02	2.40E-07
Pu-241	5.60E+00	1.21E-06
Sb-126	NL	8.80E-06
Sn-121m	5.60E+03	3.04E-04
Zr-93	1.40E+02	9.14E-05

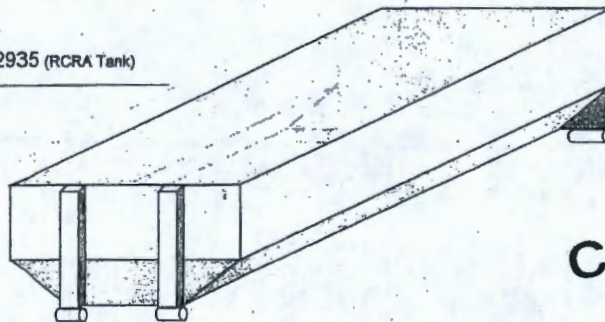
OWTF RCT FORM

Radiological Data for OWTF #: K100-02-1346

Surface Dose Rate of Package <input checked="" type="checkbox"/> <0.005 or _____ mSv/hr <0.5 or _____ mrem/hr (N + P)	Dose Rate @ 1 Meter from Surface of Package <input checked="" type="checkbox"/> <0.005 or _____ mSv/hr <0.5 or _____ mrem/hr (N + P)	Dose Rate @ 30 cm from Surface of Package <input checked="" type="checkbox"/> <1.0 or _____ mSv/hr <100 or _____ mrem/hr (N + P)	Smears of Outer Container <input checked="" type="checkbox"/> <0.4 Bq (22 dpm) β / cm ² <input checked="" type="checkbox"/> <0.04 Bq (2.2 dpm) α / cm ² <input checked="" type="checkbox"/> < Tbl. 2-2 HSRCM Onsite Limits	TRUCK LOAD OR EXCLUSIVE USE Surface <input checked="" type="checkbox"/> <2 mSv/hr (200 mrem/hr) @ 2 meters <input checked="" type="checkbox"/> <0.1 mSv/hr (10 mrem/hr)
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Additional Data and instructions (include Readings on Internal Packaging):

ERDF Can # : 2935 (RCRA Tank)



COPY

Signature - Radiation Monitoring <i>[Signature]</i>	Bldg. <u>10-872</u>	Survey No. <u>466 3 or 4</u>	Date <u>7-1-09</u>
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Attach to the OWTF.

Completed by the Radiological Control Technician (RCT) including surface dose rate in Sieverts, dose rate at 1 meter, re-movable contamination smear surveys in becquerels, vehicle dose rates in Sieverts, along with the RCT's signature, the building, survey number and date.

NOTE: For onsite shipments requiring HNF-5173 release limits, check appropriate box to verify application of Table 2-2 limits.

A-6004-031 (1105)

Onsite Waste Tracking Form
K110-09-1347



Disposal location information

1. Disposal Coordinates N: _____ W: _____ 2. LTR _____

3. Disposal: Initials _____ Date _____

3a. Disposal Stockpile Treatment - Batch # _____

3b. Placed Pending Action* MACRO GROUT FILL

Action/Disposal Completed Initials _____ Date _____

4. Transport approval number **K110-09-1347** 5. Date Shipped _____

6. Generator's US EPA ID NO: WA789008987

7. Generator's name & mailing address: U.S. Department of Energy
Richland Operations, P.O. Box 650
Richland, WA 99352

8. Transporter company name: WCH

9. Point of Origin: 100KE / OHC 10. Waste vol. (m³) 11.3398 11. TI N/A

12. Billing Code XR0919 13. Date Filled 7-1-09 14. Label W/A

15. Net wt. (kg) 18143.7 16. Gross wt. (kg) 18143.7 17. Exclusive Use Shipment Y N

18. Container# 3146 19. Container BULK METAL BOX 20. # of Containers 1

21. US DOT description (PSN, HC, ID number, PG) RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY, LSA (II), FISSILE EXCEPTED, 7, UN3321, SOLID, ELEMENTAL, EXCLUSIVE USE SHIPMENT

SPA Checklist #: N/A DE-CI: 2.32E-05 NRC CLASS: A

22. Waste Profile No.: **WP1706KE001 Rev# 0** 23. Template: 170SKE DEMO

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

24. Signature HASSON, JOHN W *John Hasson* 25. LDR Treatment Required Y N

26. Applicable waste codes NONE

27. Emergency Contact: 509-373-3800 28. Total TBq's 1.00E-02

29. Sum of Fractions: Initial: 3.48E-04 Combustible: 2.24E-04 Soil, Powder, Metals: 1.17E-04 Grout, Concrete: 1.03E-04

30. Description
STANDARD BULK WASTE

WSRP: OHC-RP-W0012 001 *asbestos transite - small transite*

31. Soil/Debris Estimate: SOIL 50/50 Debris All Metal

32. Soil/Debris Actual (optional): SOIL 50/50 Debris All Metal

33. Radionuclides

Radionuclide	Limit (Ci/m ³)	Actual (Ci/m ³)
Am-241	5.40E-02	1.87E-07
C-14	5.10E+00	5.71E-03
Co-60	NL	2.51E-03
Cs-137	3.20E+01	8.16E-07
Fe-55	NL	1.76E-04
H-3	NL	3.92E-04
Nb-93m	NL	7.10E-05
Ni-59	2.10E+02	2.91E-04
Ni-63	7.00E+02	2.85E-02
Pu-239	2.90E-02	2.40E-07
Pu-241	5.60E+00	1.21E-06
Sb-125	NL	8.80E-05
Sn-121m	5.60E+03	3.04E-04
Zr-93	1.40E+02	9.14E-05

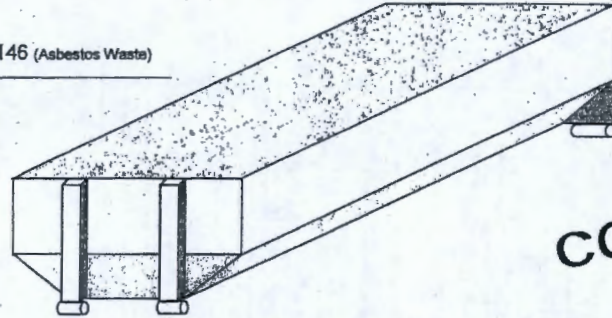
OWTF RCT FORM

Radiological Data for OWTF #: K100-09-1347

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Additional Data and Instructions (Include Readings on Internal Packaging):

ERDF Can # 3146 (Asbestos Waste)



COPY

Signature - Radiation Monitoring <i>[Signature]</i>	Bldg. <u>M-872</u>	Survey No. <u>1166 4-4</u>	Date <u>7-1-09</u>
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Attach to the OWTF.
 Completed by the Radiological Control Technician (RCT) including surface dose rate in Sieverts, dose rate at 1 meter, re-moveable contamination smear surveys in becquerels, vehicle dose rates in Sieverts, along with the RCT's signature, the building, survey number and date.
 NOTE: For onsite shipments requiring HNF-5173 release limits, check appropriate box to verify application of Table 2-2 limits. A-8004-031 (11/05)