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

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L. D. Arnold 09/02/2009
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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 1976*[1] 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. Because clean closure is anticipated, no postclosure care or monitoring requirements are included in this closure plan.

[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.

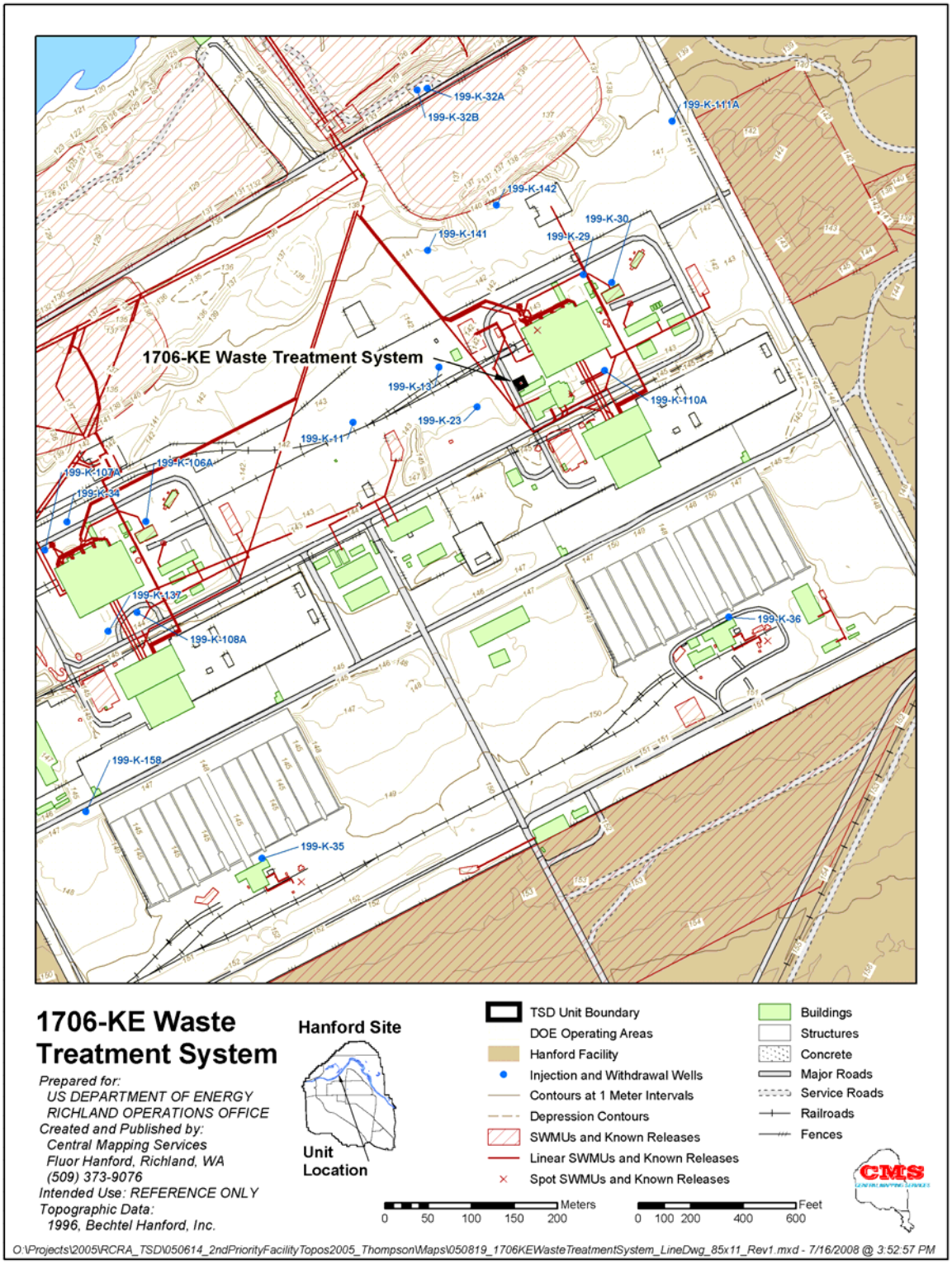


Figure 1. 1706-KE WTS Facility Location

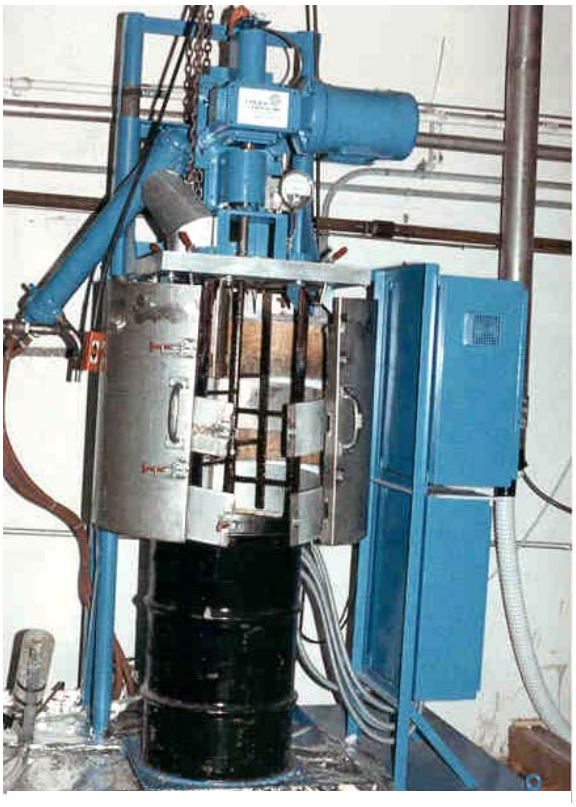
Ion Exchange Column & Waste Accumulation Tank

8700734-1CN Photo Taken 1987

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

Figure 2. Ion Exchange Column and Waste Accumulation Tank

Figure 3. Waste Accumulation Tank



Evaporator Unit in Up Position

Evaporator Unit in Down Position Evaporating Waste

Evaporator Unit

Figure 4. Evaporation Unit 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 m^3 (5-ft^3) mixed-bed resin ion exchange column, and a 363 L (96-gal) condensate collection tank (Figure 6 below).

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).

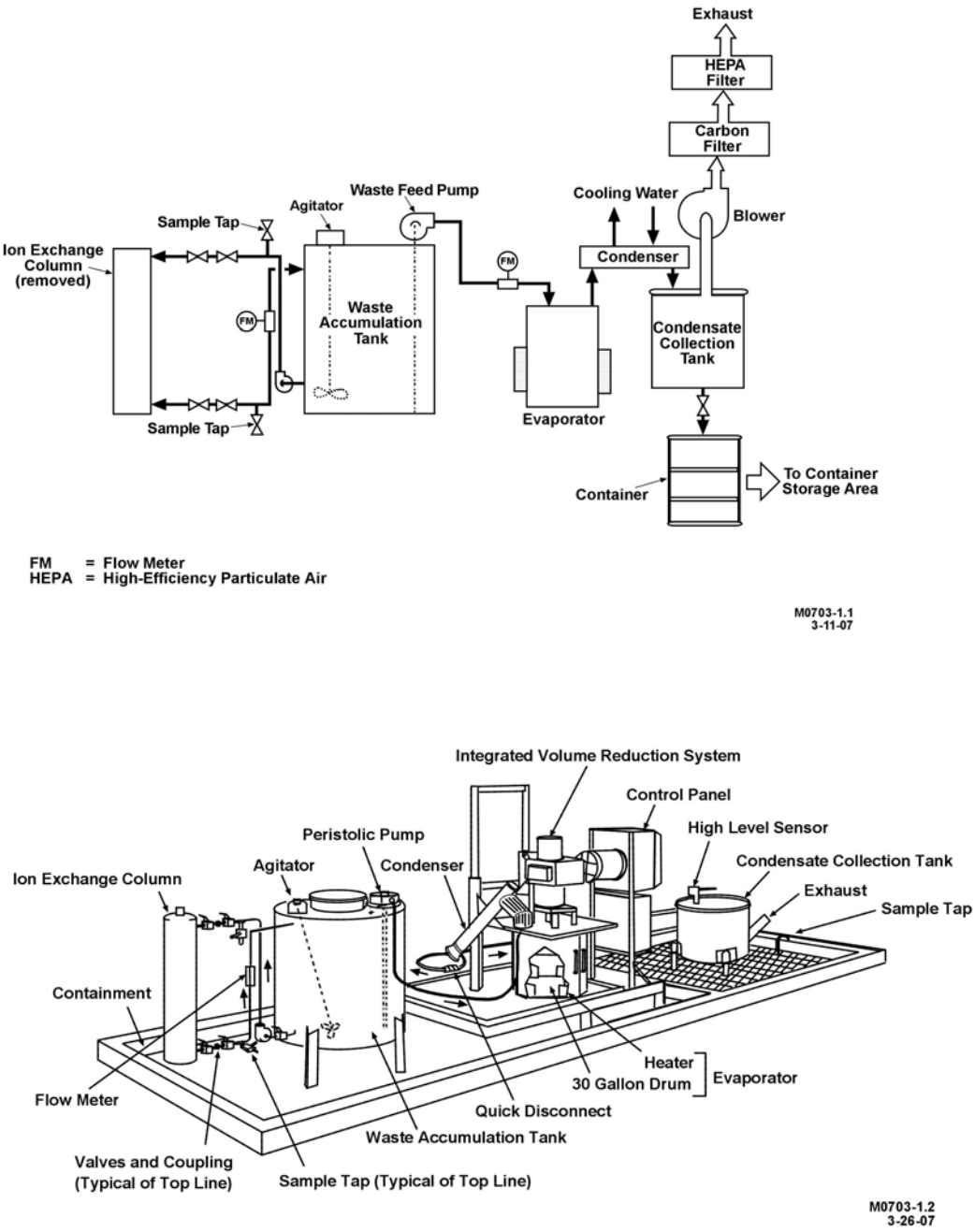


Figure 6. 1706-KE WTS Schematics

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

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-KER 100K*). The 1706-KE WTS has not operated since 1987.

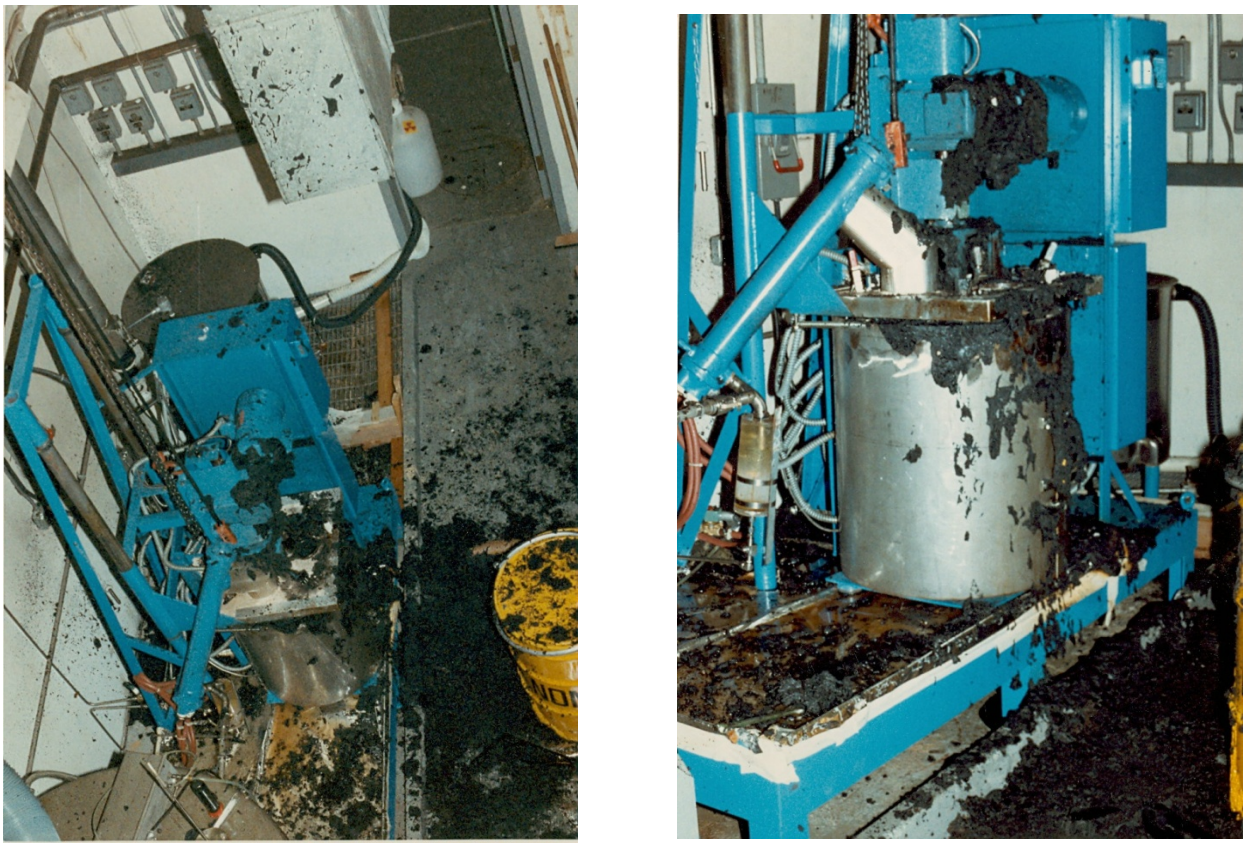


Figure 7. 1986 Epoxy Incident in Evaporator Unit

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 below provides photographs of the 1706-KE WTS area, with all components and debris removed as evidence of achieved of clean closure.

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).

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 the1706-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 For hazardous debris," Table 1, footnote 3, which states the following.

> 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.

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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.

Onsite Waste Tracking Form
K100-09-1346

Page 1 of 1

Disposal location information

1. Disposal Coordinates	N:	W:	2. Lift
3. Disposal: Initials _____ Date _____			
3a. ☒ Disposal ☐ Stockpile ☐ Treatment - Batch #		3b. ☐ Placed Pending Action* ☐ MACRO ☐ GROUT FILL *Action (select one) Action/Disposal Completed Initials _____ Date _____	
4. Transport approval number **K100-09-1346**		5. Date Shipped	
6. Generator's US EPA ID NO: WA7890008967	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 ☑ Y ☐ 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-Ci: 2.32E-05 NRC CLASS: A

22. Waste Profile No.: **WP1706KE001 Rev# 0**	23. Template: 1706KE 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	25. LDR Treatment Required ☐ Y ☑ N
26. Applicable waste codes NONE	
27. Emergency Contact: 509-373-3800	28. Total TBqs 1.60E-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 split Tank

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

WCH-EE-286 (05/06/2009)

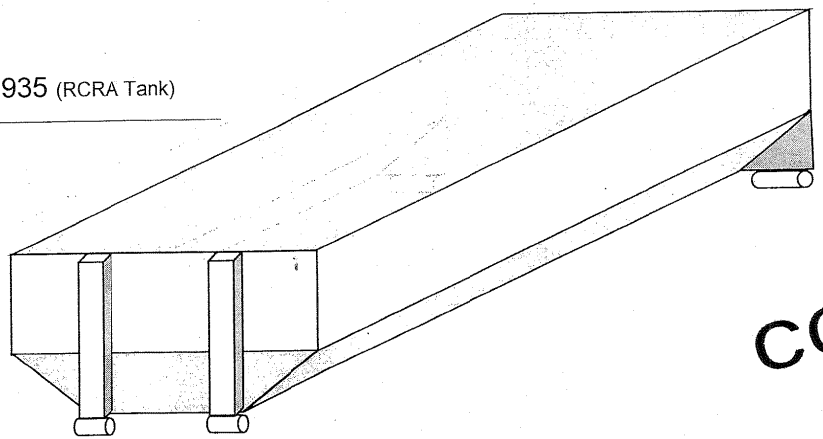
OWTF RCT FORM

Radiological Data for OWTF #: K100-09-1346

Surface Dose Rate of Package	Dose Rate @ 1 Meter from Surface of Package	Dose Rate @ 30 cm from Surface of Package	Smears of Outer Container	TRUCK LOAD OR EXCLUSIVE USE
☑ <0.005 or _____ mSv/hr <0.5 or _____ mrem/hr (N + βγ)	☑ <0.005 or _____ mSv/hr <0.5 or _____ mrem/hr (N + βγ)	☑ <1.0 or _____ mSv/hr <100 or _____ mrem/hr (N + βγ)	☑ <0.4 Bq (22 dpm) βγ / cm² ☑ <0.04 Bq (2.2 dpm) α / cm² ☑ < Tbl. 2-2 HSRCM Onsite Limits	Surface ☑ <2 mSv/hr (200 mrem/hr) @ 2 meters ☑ <0.1 mSv/hr (10 mrem/hr)

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

ERDF Can # 2935 (RCRA Tank)



COPY

Signature - Radiation Monitoring	Bldg.	Survey No.	Date
	100-872	PAGE 3 of 4 FD-K090708	7-1-09

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 bacquerels, 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 (11/05)

Onsite Waste Tracking Form
K100-09-1347

Page 1 of 1

Disposal location information

1. Disposal Coordinates	N:	W:	2. Lift
3. Disposal: Initials _____ Date _____			
3a. ☒ Disposal ☐ Stockpile ☐ Treatment - Batch #		3b. ☐ Placed Pending Action* ☐ MACRO ☐ GROUT FILL *Action (select one) Action/Disposal Completed Initials _____ Date _____	
4. Transport approval number **K100-09-1347**		5. Date Shipped	
6. Generator's US EPA ID NO: WA7890008967	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. (m3) 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 ☑ 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: 1706KE 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 W Hasson	25. LDR Treatment Required ☐ Y ☑ N
26. Applicable waste codes NONE	
27. Emergency Contact: 509-373-3800	28. Total TBqs 1.60E-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 asbestos transite – small tanks

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

WCH-EE-286 (05/06/2009)

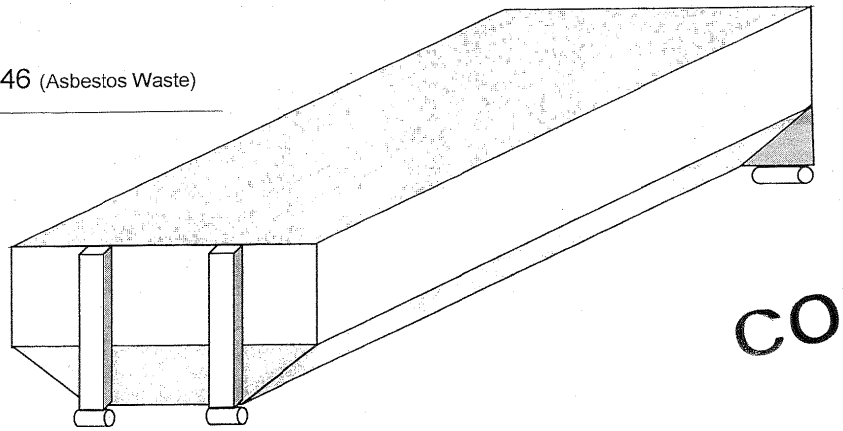
OWTF RCT FORM

Radiological Data for OWTF #: K100-09-1347

Surface Dose Rate of Package	Dose Rate @ 1 Meter from Surface of Package	Dose Rate @ 30 cm from Surface of Package	Smears of Outer Container	TRUCK LOAD OR EXCLUSIVE USE
☑ <0.005 or _____ mSv/hr <0.5 or _____ mrem/hr (N + βγ)	☑ <0.005 or _____ mSv/hr <0.5 or _____ mrem/hr (N + βγ)	☑ <1.0 or _____ mSv/hr <100 or _____ mrem/hr (N + βγ)	☑ <0.4 Bq (22 dpm) βγ / cm² ☑ <0.04 Bq (2.2 dpm) α / cm² ☑ < Tbl. 2-2 HSRCM Onsite Limits	Surface ☑ <2 mSv/hr (200 mrem/hr) @ 2 meters ☑ <0.1 mSv/hr (10 mrem/hr)

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

ERDF Can # 3146 (Asbestos Waste)



COPY

Signature - Radiation Monitoring	Bldg.	Survey No.	Date
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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 bacquerels, 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 (11/05)