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**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

18-AMRP-0098

**MAY 22 2018**

Ms. Alexandra K. Smith, Program Manager  
Nuclear Waste Program  
Washington State Department of Ecology  
3100 Port of Benton Boulevard  
Richland, Washington 99354

Dear Ms. Smith:

**REVISED PART A FORM FOR THE 1706-KE WASTE TREATMENT SYSTEM**

In reference to the Washington State Department of Ecology's (Ecology) letter (18-NWP-004) dated January 11, 2018, this transmittal contains the revised Part A form for the 1706-KE Waste Treatment System.

On receipt of the certified Part A form, the U.S. Department of Energy Richland Operations Office requests that Ecology begin the process to remove this unit from the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste, Revision 8C.

If you have any questions, please contact me or your staff may contact Joe Franco, Assistant Manager for the River and Plateau, on (509) 373-9971.

Sincerely,

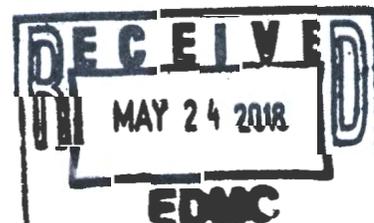
A handwritten signature in black ink that reads "Doug S. Shoop".

Doug S. Shoop  
Manager

AMRP:DBC

Attachment

cc: See page 2



7-1-3

17

Ms. Alexandra K. Smith  
18-AMRP-0098

-2-

MAY 22 2018

cc w/attach:

D. J. Alexander, Ecology

D. B. Bartus, EPA

J. Bell, NPT

R. Buck, Wanapum

L. J. Cusack, CHPRC

S. L. Dahl-Crumpler, Ecology

M. T. Gillespie, CHPRC

M. N. Jaraysi, CHPRC

S. K. Johansen, CHPRC

M. Johnson, CTUIR

N. M. Menard, Ecology

D. Rowland, YN

D. G. Singleton, CHPRC

Administrative Record (TSD: T-1-3)

Ecology NWP Library (Hardcopy)

Environmental Portal

HF Operating Record (J. K. Perry, MSA, A3-01)

# Permit Modification Request for 1706-KE Waste Treatment System Closure Unit Group 14 Part A Form

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

Contractor for the U.S. Department of Energy  
under Contract DE-AC06-08RL14788



P.O. Box 1600  
Richland, Washington 99352

# Permit Modification Request for 1706-KE Waste Treatment System Closure Unit Group 14 Part A Form

P. E. Eberlein  
CH2M HILL Plateau Remediation Company

Date Published  
April 2018

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

Contractor for the U.S. Department of Energy  
under Contract DE-AC06-08RL14788

**ch2m.**<sup>SM</sup>  
P.O. Box 1600  
Richland, Washington 99352

**APPROVED**

*By Janis D. Aardal at 11:27 am, Apr 26, 2018*

Release Approval

Date

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 <b>WASHINGTON STATE        DEPARTMENT OF        ECOLOGY</b>		<b>Dangerous Waste Permit        Application        Part A Form</b>	
Date Received		Reviewed by:	Date:
Month	Day	Year	
Approved by:		Date:	
<b>I. This form is submitted to: (place an "X" in the appropriate box) CLOSED January 11, 2018 (18-NWP-004)</b>			
<input checked="" type="checkbox"/>	Request modification to a final status permit (commonly called a "Part B" permit)		
<input type="checkbox"/>	Request a change under interim status		
<input type="checkbox"/>	Apply for a final status permit. This includes the application for the initial final status permit for a site or for a permit renewal (i.e., a new permit to replace an expiring permit).		
<input type="checkbox"/>	Establish interim status because of the wastes newly regulated on:	(Date)	
List waste codes:			
<b>II. EPA/State ID Number</b>			
W	A	7 8 9 0 0 0 8 9 6 7	
<b>III. Name of Facility</b>			
US Department of Energy – Hanford Facility			
<b>IV. Facility Location (Physical address not P.O. Box or Route Number)</b>			
<b>A. Street</b>			
825 Jadwin			
City or Town		State	ZIP Code
Richland		WA	99352
County Code (if known)	County Name		
0 0 5	Benton		
<b>B. Land Type</b>	<b>C. Geographic Location</b>	<b>D. Facility Existence Date</b>	
	Latitude (degrees, mins, secs)	Longitude (degrees, mins, secs)	Month Day Year
F	Refer to TOPO Map (Section XV.)		0 3 2 2 1 9 4 3
<b>V. Facility Mailing Address</b>			
<b>Street or P.O. Box</b>			
P.O. Box 550			
City or Town		State	ZIP Code
Richland		WA	99352

WA7 89000 8967, Closure Unit 14

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<b>VI. Facility contact (Person to be contacted regarding waste activities at facility)</b>											
<b>Name (last)</b>						<b>(first)</b>					
Shoop						Doug					
<b>Job Title</b>						<b>Phone Number (area code and</b>					
Manager						(509) 376-7395					
<b>Contact Address</b>											
<b>Street or P.O. Box</b>											
P.O. Box 550											
<b>City or Town</b>						<b>State</b>		<b>ZIP Code</b>			
Richland						WA		99352			
<b>VII. Facility Operator Information</b>											
<b>A. Name</b>									<b>Phone Number</b>		
Department of Energy Owner/Operator CH2M HILL Plateau Remediation Company Co-Operator for 1706-KE Waste Treatment System*									(509) 376-7395 (509) 373-0293*		
<b>Street or P.O. Box</b>											
P.O. Box 550 P.O. Box 1600 *											
<b>City or Town</b>						<b>State</b>		<b>ZIP Code</b>			
Richland						WA		99352			
<b>B. Operator Type</b>			F								
<b>C. Does the name in VII.A reflect a proposed change in operator?</b>						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Co-Operator* change					
If yes, provide the scheduled date for the change:						<b>Month</b>		<b>Day</b>		<b>Year</b>	
						1 0		0 1		2 0 0 8	
<b>D. Is the name listed in VII.A. also the owner? If yes, skip to Section VIII.C.</b>						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
<b>VIII. Facility Owner Information</b>											
<b>A. Name</b>									<b>Phone Number (area code and number)</b>		
Doug S. Shoop, Operator/Facility-Property Owner									(509) 376-7395		
<b>Street or P.O. Box</b>											
P.O. Box 550											
<b>City or Town</b>						<b>State</b>		<b>ZIP Code</b>			
Richland						WA		99352			
<b>B. Owner Type</b>			F								
<b>C. Does the name in VIII.A reflect a proposed change in owner?</b>						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If yes, provide the scheduled date for the change:						<b>Month</b>		<b>Day</b>		<b>Year</b>	
<b>IX. NAICS Codes (5/6 digit codes)</b>											
<b>A. First</b>						<b>B. Second</b>					
5 6 2 2 1 Waste Treatment & Disposal						9 2 4 1 1 0 Administration of Air & Water Resource & Solid Waste Management Programs					
<b>C. Third</b>						<b>D. Fourth</b>					
5 4 1 7 1 Research & Development in the Physical, Engineering, & Life Sciences											

X. Other Environmental Permits (see instructions)												
A. Permit Type		B. Permit Number										C. Description

**XI: Nature of Business (provide a brief description that includes both dangerous waste and non-dangerous waste areas and activities)**

S02, T04

The 1706-KE Waste Treatment System was designed and installed to begin waste management operations in July 1986. The unit was designed and installed to treat mixed waste generated in the laboratories of the 1706-KE Building. The majority of the waste was expected to be acidic or caustic solutions (D002, characteristic, corrosive, dangerous waste). The 1706-KE Waste Treatment System consisted of a 2,082-liter (550-gallon) waste accumulation tank, a 0.14-cubic meter (5-cubic foot) mixed-bed resin ion exchange column, an 114-liter (30-gallon) evaporator unit, and a 363-liter (96-gallon) condensate collection tank.

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 was transferred to the evaporator unit. The evaporator unit heated and boiled the liquid waste to steam. The steam condensed and collected in the 363-liter (96-gallon) condensate collection tank with the exhaust from the evaporation unit being passed through a HEPA filter prior to discharge.

Operation of this unit was ceased shortly after initial startup due to the unanticipated anomalies experienced in the operating system. The maximum process design capacities if the unit had been in operation for tank storage (S02) is 2,445 liters (646 gallons) and for tank treatment-other (T04) is 5,678 liters (1,500 gallons).

The 1706-KE WTS has not been operated since 1987. All waste, with the possible exception of a heel in the waste accumulation tank, was removed in March 1994. Closure of the 1706-KE Waste Treatment System will be integrated with the CERCLA Remedial Action for the 100 Area Remaining Sites Record of Decision. Closure plan documentation shall be provided to Ecology through integration with CERCLA documentation.

This unit was Clean Closed. Permit requirements were retired via a Class 1 modification (Rev 8c), quarter ending 6/30/18.

**EXAMPLE FOR COMPLETING ITEMS XII and XIII (shown in lines numbered X-1, X-2, and X-3 below):** A facility has two storage tanks that hold 1200 gallons and 400 gallons respectively. There is also treatment in tanks at 20 gallons/hr. Finally, a one-quarter acre area that is two meters deep will undergo *in situ* vitrification.

Section XII. Process Codes and Design Capacities								Section XIII. Other Process Codes						
Line Number	A. Process Codes (enter code)			B. Process Design Capacity		C. Process Total Number of Units	Line Number	A. Process Codes (enter code)			B. Process Design Capacity		C. Process Total Number of Units	D. Process Description
				1. Amount	2. Unit of Measure (enter code)						1. Amount	2. Unit of Measure (enter code)		
X 1	S	0	2	1,600	G	002	X 1	T	0	4	700	C	001	In situ vitrification
X 2	T	0	3	20	E	001								
X 3	T	0	4	700	C	001								
1	S	0	2	2,445	L	004	1							
2	T	0	4	5,678	V	004	2							
3							3							
4							4							
5							5							
6							6							
7							7							
8							1 8							
9							1 9							
1 0							1 0							
1 1							1 1							
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2 0							2 0							
2 1							2 1							
2 2							2 2							
2 3							2 3							
2 4							2 4							
2 5							2 5							

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XIV. Description of Dangerous Wastes													
<p><b>Example for completing this section:</b> A facility will receive three non-listed wastes, then store and treat them on-site. Two wastes are corrosive only, with the facility receiving and storing the wastes in containers. There will be about 200 pounds per year of each of these two wastes, which will be neutralized in a tank. The other waste is corrosive and ignitable and will be neutralized then blended into hazardous waste fuel. There will be about 100 pounds per year of that waste, which will be received in bulk and put into tanks.</p>													
Line Number	A. Dangerous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	D. Processes						
	(1) Process Codes (enter)						(2) Process Description [If a code is not entered in D (1)]						
X 1	D	0	0	2	400	P	S	0	1	T	0	1	
X 2	D	0	0	1	100	P	S	0	2	T	0	1	
X 3	D	0	0	2									Included with above
1	D	0	0	2	6,804	K	S	0	2	T	0	4	
2													
3													
4													
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**XV. Map**  
 Attach to this application a topographic map of the area extending to at least one (1) mile beyond property boundaries. The map must show the outline of the facility; the location of each of its existing and proposed intake and discharge structures; each of its dangerous waste treatment, storage, recycling, or disposal units; and each well where fluids are injected underground. Include all springs, rivers, and other surface water bodies in this map area, plus drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary. The instructions provide additional information on meeting these requirements.

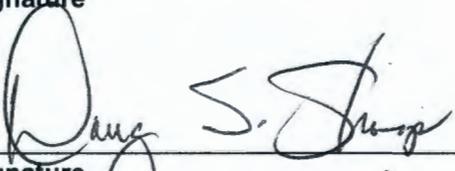
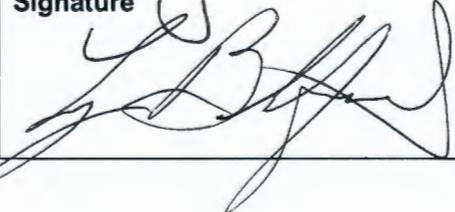
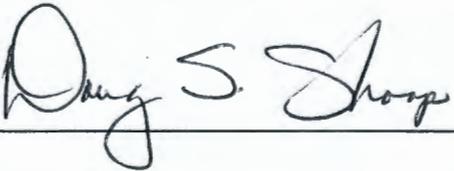
Topographic map is located in the Ecology Library

**XVI. Facility Drawing**  
 All existing facilities must include a scale drawing of the facility (refer to Instructions for more detail).

**XVII. Photographs**  
 All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, recycling, and disposal areas; and sites of future storage, treatment, recycling, or disposal areas (refer to Instructions for more detail).

**XVIII. Certifications**

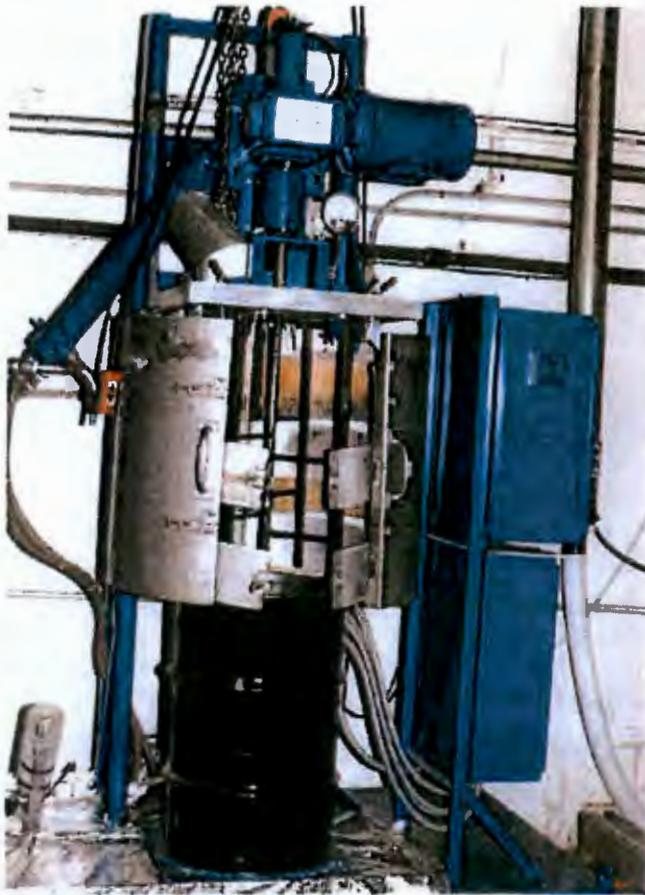
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

<b>Operator</b> Name and Official Title (type or print) Doug S. Shoop, Manager U.S. Department of Energy Richland Operations Office	<b>Signature</b> 	<b>Date Signed</b> 5/22/18
<b>Co-Operator*</b> Name and Official Title (type or print) Ty Blackford President and Chief Executive Officer CH2M HILL Plateau Remediation Company	<b>Signature</b> 	<b>Date Signed</b> 4/12/18
<b>Co-Operator – Address and Telephone Number*</b> P.O. Box 1600 Richland, WA 99352 (509) 373-0293		
<b>Facility-Property Owner</b> Name and Official Title (type or print) Doug S. Shoop, Manager U.S. Department of Energy Richland Operations Office	<b>Signature</b> 	<b>Date Signed</b> 5/22/18

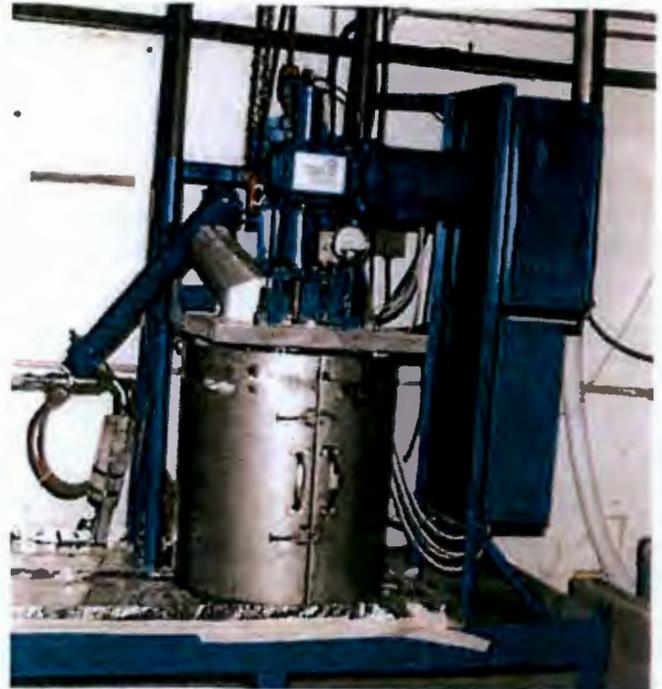
**Comments**

This unit was Clean Closed. Permit requirements were retired via a Class 1 prime modification (Rev 8c), quarter ending 6/30/18.

1706-KE Waste Treatment System



**Solidification Unit in Up Position**  
132285-6CN (Photo Taken 1986)



**Solidification Unit in Down Position Evaporating Waste**  
8700734-8CN Photo Taken 1987



**Solidification Unit**



**Ion Exchange Column & Waste Accumulation Tank**  
8700734-1CN Photo Taken 1987

**Note:** Ion Exchange Column has been removed since photograph was taken

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**1706-KE Waste Treatment System**

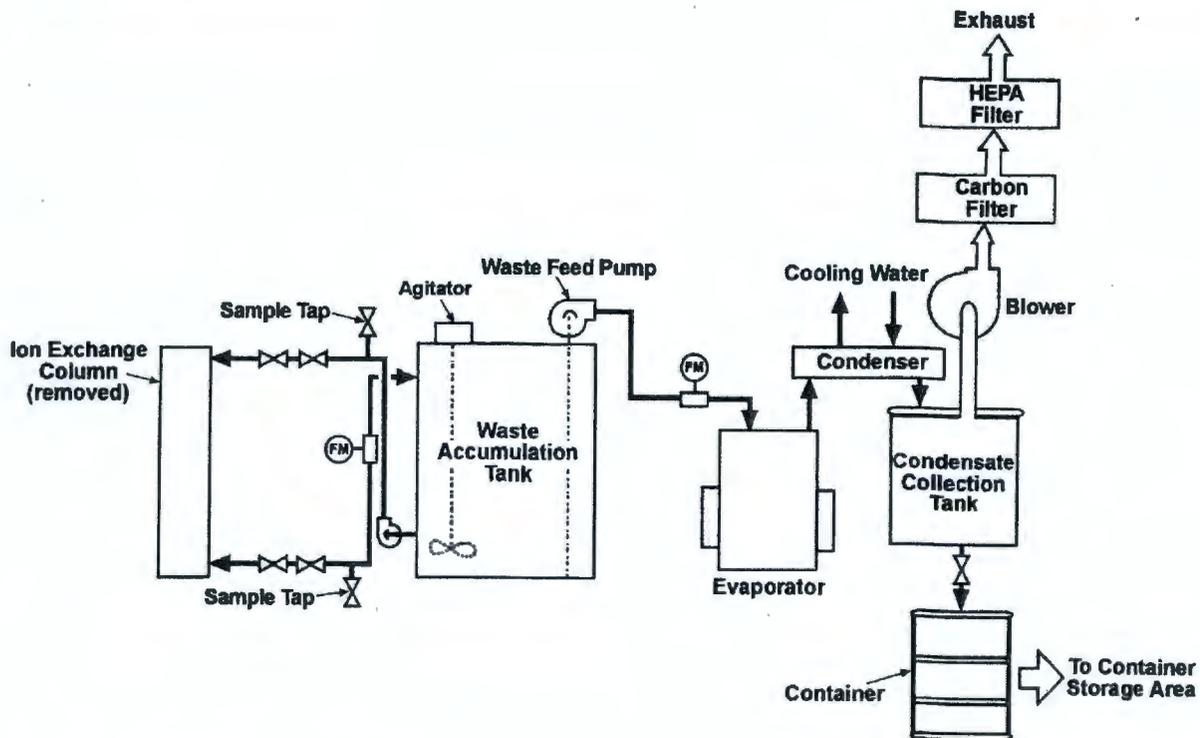
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**Waste Storage Tank**



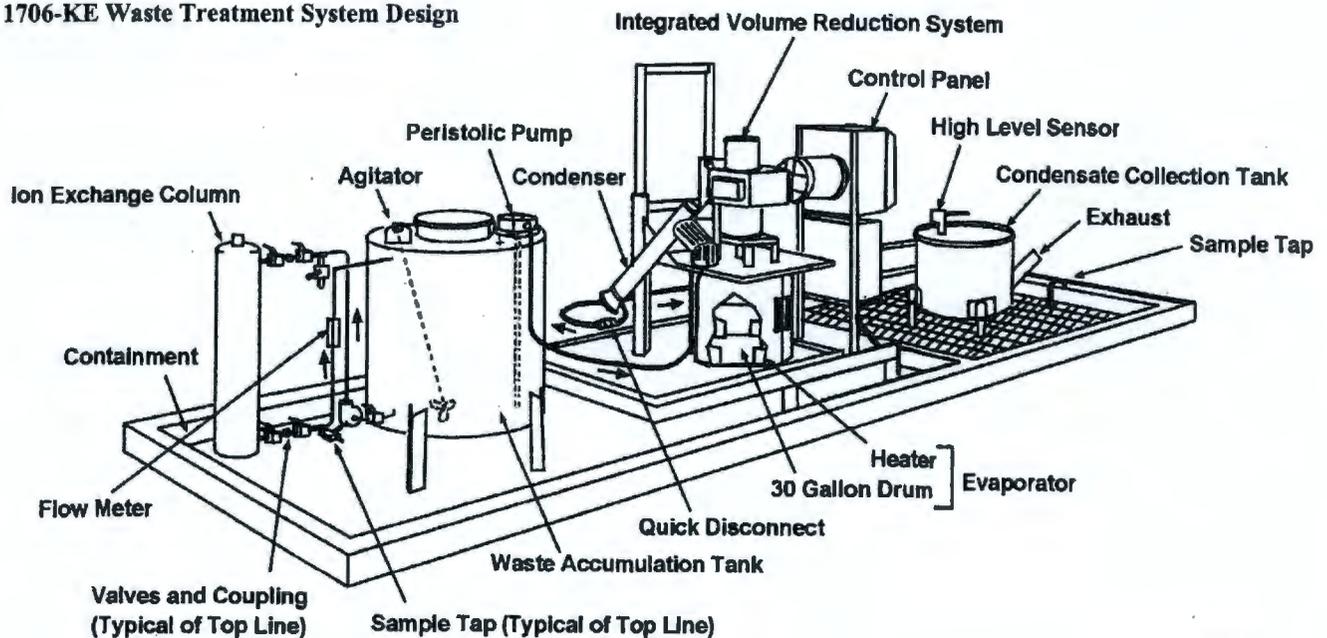
**Condensate Tank**



FM = Flow Meter  
 HEPA = High-Efficiency Particulate Air

M0703-1.1  
 3-11-07

1706-KE Waste Treatment System Design



M0703-1.2  
 3-26-07



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