



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

0050752

99-EAP-323

JUN 0 1 1999

Ms. L. E. Ruud, Permit Specialist
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336



Dear Ms. Ruud:

MODIFICATIONS TO THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PERMIT, PART III, CHAPTER 1, 616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY (616 NRDWSF)

Enclosed for signature by the State of Washington Department of Ecology (Ecology) are two modification notification forms. These forms identify Class 3 modifications to the Hanford RCRA Permit, Dangerous Waste Portion, Part III, Chapter 1, 616 NRDWSF. These modifications are being submitted for inclusion into Hanford Facility RCRA Permit Modification E (Revision 6) to facilitate closure of the 616 NRDWSF in Fiscal Year 2000. The modifications reflect agreements reached with Ecology during 616 NRDWSF closure approval workshops.

Chapter 11.0 of the 616 NRDWSF Part B Permit Application is being replaced with a new closure plan. Chapter 14.0 of the 616 NRDWSF Part B Permit Application is being supplemented by adding owner/operator/co-operator certifications for this modification package.

Upon approval of these modifications, the following portions of the Hanford Facility RCRA Permit, Revision 4A, will no longer be required and are recommended for deletion:

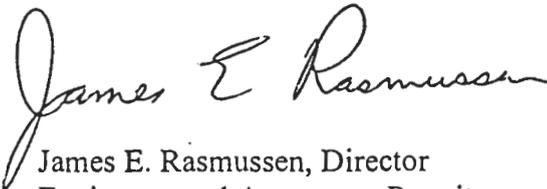
- Attachment 10, List of Attachments (Page 4 of 76); and
- Part III.1.A., Appendix 11B (Page 38 of 76)

If these modifications do not accurately reflect the agreements reached with Ecology, please respond at your earliest possible convenience.

JUN 01 1999

Should you have any questions regarding this information, please contact Ellen M. Mattlin, U.S. Department of Energy, Richland Operations Office, on (509) 376-8981 or Fred A. Ruck, III, Fluor Daniel Hanford, Inc., on (509) 376-9876.

Sincerely,



James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division

EAP:EMM

Enclosures:

1. Hanford Facility RCRA Permit
Modification Notification Forms
2. Hanford Facility RCRA Permit –
Part III, Chapter 1 and Attachment 8
616 NRDWSF Page Changes

cc w/encls:

Admin Record, H6-08
HF Operating Record, H6-08
Ecology Kennewick Library
M. N. Jaraysi, Ecology
R. Jim, YIN
P. Sobotta, NPT
S. A. Thompson, FDH
J. R. Wilkinson, CTUIR
J. A. Winterhalder, WMH

cc w/o encls:

R. J. Landon, BHI
L. J. Cusack, Ecology
D. R. Sherwood, EPA
W. D. Adair, FDH
J. D. Williams, FDH
A. K. Ikenberry, PNNL
R. H. Engelmann, WMH
S. N. Luke, WMH

Hanford Facility RCRA Permit Modification Notification Forms
for
Part III, Chapter 1 and Attachment 8
616 Nonradioactive Dangerous Waste Storage Facility

Page 1 of 3

Hanford Facility RCRA Permit Modification Notification Form

Unit:
616 Nonradioactive Dangerous Waste Storage Facility

Permit Part & Chapter:
Part III, Chapter 1

Description of Modification:

Replace Chapter 11.0 of Section III.A.1 with Revision 2A: These modifications are being submitted to facilitate closure of the 616 NRDWSF in FY 2000. The modifications reflect agreements with Ecology that were made during 616 NRDWSF closure approval workshops and are in keeping with the current approach for closure of Hanford Facility permitted container storage units.

Note:

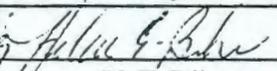
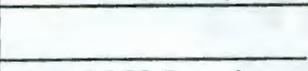
- 1) Appendix 11B of Section III.1.A is no longer needed upon approval of Chapter 11.0, Revision 2A and should be deleted.
- 2) Attachment 10 of the List of Attachments (page 4 of 76, line 22) is no longer needed upon approval of Chapter 11.0, Revision 2A and should be deleted.

Modification Class: ¹²³	Class 1	Class ¹	Class 2	Class 3
Please check one of the Classes:				X

Relevant WAC 173-303-830, Appendix I Modification: Other modifications

Enter wording of the modification from WAC 173-303-830, Appendix I citation:

The proposed modification does not match any modification listed in WAC 173-303-830, Appendix I, and therefore, in accordance with WAC 173-303-830 (4)(d)(i), is being submitted as a Class 3 modification request.

Submitted by Co-Operator:	Reviewed by RL Program Office:	Reviewed by Ecology:
 J. D. Williams	 H. E. Bilson	 M. N. Jaraysi
4/24/99 Date	6/1/99 Date	 Date

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit Modification Notification Form

Unit:
616 Nonradioactive Dangerous Waste Storage Facility

Permit Part & Chapter:
Part III, Chapter 1

Description of Modification:

1. Add supplementary owner/operator/co-operator certification page to Chapter 14.0 of the 616 NRDWSF Part B Permit Application for certification of Chapter 11, Revision 2B.

Modification Class: ¹²³

Please check one of the Classes:

Class 1	Class ¹ 1	Class 2	Class 3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

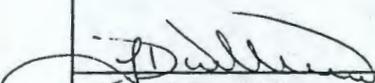
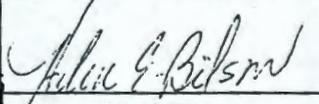
Relevant WAC 173-303-830, Appendix I Modification: Other modifications

The proposed modification does not match any modification listed in WAC 173-303-830, Appendix I, and therefore, in accordance with WAC 173-303-830(4)(d)(I), is being submitted as a Class 3 modification request.

Submitted by Co-Operator:

Reviewed by RL Program Office:

Reviewed by Ecology:

 J. D. Williams Date	 H. E. Bilson Date	M. N. Jaraysi Date
--	---	-----------------------

¹Class 1 modifications requiring prior Agency approval.

² This is only an advanced notification of an intended Class ¹1, 2, or 3 modification, this should be followed with a formal modification request, and consequently implement the required Public Involvement processes when required.

³ If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to ¹1, if appropriate.

Hanford Facility RCRA Permit

**Part III, Chapter 1 and Attachment 8
616 Nonradioactive Dangerous Waste Storage Facility**

Page Changes

Chapter 11.0, Revision 2A

Chapter 14.0, Revision 2A

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11.0 CLOSURE PLAN/FINANCIAL ASSURANCE FOR CLOSURE [I]

This totally revised chapter indicates the 616 NRDWSF will be clean closed and available for non-RCRA use after closure. Consistent with clean closure, no postclosure activities should be necessary.

Because no waste currently is stored at the 616 NRDWSF and no further waste storage is planned, the unit will be closed. 616 NRDWSF operated as a clean, well maintained, nonradioactive dangerous waste container storage unit. Detailed storage records were maintained. Only containers of the proper type and in good condition were accepted. Storage and loading area containment was designed to preclude spills from reaching soil, and containment surfaces were maintained to ensure integrity. Waste was managed to minimize the potential for spills. The latest operating methods and administrative controls required waste spills to be cleaned up promptly and completely and the waste removal area to be analytically verified (Chapter 2.0, Section 2.1.3.6 and Chapter 4.0, Section 4.1.1.8). However, because operating records do not demonstrate that early operations met these spill cleanup requirements, the unit will be considered potentially contaminated and will undergo decontamination. Although no spills to soil are documented, soil will be sampled to demonstrate clean closure.

11.1 CLOSURE PLAN [I-1]

Closure will comply with WAC 173-303-610 regulations. This chapter describes the closure performance standards that will be met and the closure activities that will be conducted to achieve and to verify clean closure conditions for 616 NRDWSF.

11.1.1 Closure Performance Standard [I-1a]

The following sections identify performance standards and waste removal and decontamination standards for clean closure of the 616 NRDWSF.

11.1.1.1 Performance Standard [I-1a(1)]

Closure of the 616 NRDWSF will be conducted in a manner that meets the clean closure performance standards of WAC 173-303-610(2)(a). The performance standards will be met by removing all dangerous waste and by removing or decontaminating all structures and soil to clean closure removal or decontamination standards.

11.1.1.2 Soil and Structure Removal or Decontamination Standards [I-1a (2)]

The clean closure removal and decontamination standards for soil and structures have been established in accordance with WAC 173-303-610(2)(b).

The clean closure standard for soil is in accordance with WAC 173-303-610(2)(b)(i). The standard identifies a maximum allowable concentration for each constituent of concern shown in Section 11.1.2.4. The maximum allowable concentration for each constituent of concern is the greater of its numeric, health-based cleanup level calculated using WAC 173-340 (MTCA) Method B formulas (or Method A tables, if appropriate) or natural background (DOE/RL-92-24). Constituent concentrations will be verified through analytical sampling and analysis as described in Section 11.1.2.4. Only the soil of the

1 french drain (Figure 11-1) had a potential to have been contaminated by storage operations and will be
2 sampled to demonstrate clean closure.

3
4 The clean closure standard for structures is a visually verifiable standard established in accordance with
5 WAC 173-303-610(2)(b)(ii). The standard is the absence of obvious stains or residues that would
6 indicate potential dangerous waste contamination. Surfaces must be free of indications of potential
7 dangerous waste, except for residual waste stains consisting of light shadows, slight streaks, or minor
8 discoloration. The standard will be achieved through decontamination of all indoor and outdoor storage
9 and loading area floor and pad surfaces (Figure 11-2). The standard will be verified by visual
10 inspections performed and documented as described in Section 11.1.2.3.2. Only storage and loading area
11 floor surfaces and some miscellaneous components that will remain after closure had a potential to have
12 been contaminated by storage operations and these areas will be required to meet this standard.

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15 11.1.2 Closure Activities [I-1b]

16 Closure activities required to achieve and verify clean closure of structures and soil (i.e., storage and
17 loading area pads, floors, trenches, and sumps) are as follows.

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19

- 20 • Remove all dangerous waste inventory
- 21 • Remove potentially contaminated storage building equipment and components for reuse
- 22
- 23 • Decontaminate storage building components and storage building and loading area floors, trenches,
24 and sumps
- 25
- 26 • Visually inspect the decontaminated surfaces for achievement of the clean closure standard
- 27
- 28 • Sample french drain soil and compare results to clean closure standards for soil
- 29
- 30 • Certify that closure activities were completed in accordance with the approved closure plan.
- 31

32

32 11.1.2.1 Maximum Extent of Operations and Maximum Waste Inventory [I-1b(1) and 1c]

33 All waste handling and storage activities were limited to the loading and storage areas identified in
34 Figure 11-2. Of the six cells, the caustic and the oxidizer cells each could hold approximately
35 19,873 liters, the combustible cell could hold 22,447.5 liters, and the acid cell could hold 23,091 liters of
36 waste. The remaining two cells, the Class 1A and Class 1B flammable cells, could hold 9,596 liters and
37 12,870.4 liters, respectively. In total, approximately 108,395 liters of waste could have been stored in
38 the 616 NRDWSF. Figure 11-3 shows the configuration and layout of a typical cell.

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40 11.1.2.2 Removing Dangerous Waste [I-1b(2)]

41 No dangerous waste inventory remains at the unit. The final volume of waste was transferred to other
42 TSD unit(s) November 30, 1995.

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44

44 11.1.2.3 Decontamination and Inspection of Building Components and Structures [I-1b(3) and 45 I-1b(4)]

46 The following sections describe decontamination and inspection activities for structures and
47 miscellaneous building components that will remain after closure.

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11.1.2.3.1 Waste Handling Equipment

No equipment will remain after closure that would require decontamination to meet clean closure levels. All portable waste handling equipment used for handling containers (e.g., barrel tongs, forklift truck) has been removed and redeployed to other Solid Waste Project (SWP) TSD units. At closure, the scissor-lift bolted to the east loading pad will be unbolted and disposed of or used by another SWP TSD or other approved location as reusable equipment.

11.1.2.3.2 Decontamination of Structures

Storage cell floors, sumps, trenches, and outdoor loading pads (Figure 11-2) will be cleaned by hand using mops, rags, brushes, water, and appropriate nonregulated detergent or by mechanical means using a power scrubber or high-pressure/low-volume steam or water spray. Cleaning will be conducted so as to minimize the quantity of rinsates generated. Rinsates (if any) will be collected in trenches or sumps, pumped from the sumps into appropriate containers, and the pump triple rinsed. Rinsate collection locations will be cleaned and inspected last. Decontamination will be documented on a decontamination and inspection checklist similar to Figure 11-4. All decontamination waste will be designated in accordance with WAC 173-303 and managed accordingly.

The cleaned surfaces will be visually inspected for achievement of the clean closure standard described in Section 11.1.1.2 of no obvious stains or residues indicating potential dangerous waste contamination. The visual inspection will be documented on the checklist used to document the decontamination. When the visual standard is met, the structure will be considered clean. Copies of the completed visual inspection checklist(s) will be placed in the Hanford Facility Operating Record.

11.1.2.3.3 Decontamination and Inspection of Miscellaneous Building Components

Two stainless steel basins exist in the packaging and sampling room will remain after closure. Neither basin has a drain. The basins will be cleaned by hand, using rags or brushes and an appropriate nonregulated cleaner. Rinsate (if any) and decontamination waste (e.g., rags) will be collected, designated, and managed accordingly. Decontamination will be documented on a Decontamination and inspection checklist similar to Figure 11-4. The basins will be visually inspected for achievement of the clean closure standard. The inspection will be documented on the checklist used to document the decontamination.

Grating over trenches of the indoor areas and the outdoor loading pads will be cleaned by high-pressure/low-volume steam or water spray, or will be cleaned by hand using rags, brushes, water, and an appropriate cleaner, if necessary. Rinsate and decontamination materials will be collected, designated, and managed accordingly. Decontamination will be documented on a Decontamination and inspection checklist similar to Figure 11-4. The grating will be inspected for achievement of the visual acceptance standard and the inspection documented on the checklist used to document the decontamination.

11.1.2.4 Soil Sampling

The floor of each of the two outdoor loading area pads has a single drainage trench. Each trench has one drain that discharges to the same french drain (Figure 11-1). The french drain is a vertically oriented, perforated concrete pipe that is approximately 3 feet in diameter and six feet long and is entirely in the ground. The drain has a concrete cover and is open to soil at the bottom to allow drainage. The bottom foot (0.3048 meter) of the pipe is filled with gravel. To facilitate access to soil for sampling, gravel in the french drain will be removed down to the gravel/soil interface. When gravel is removed, care will be

1 taken so as not to disturb subsoil. Gravel will be placed into lined containers to await designation based
2 on the results of french drain soil sampling. The gravel will be disposed in accordance with the results of
3 waste designation.

4
5 One grab sample of surface soil will be taken from the center of the french drain. The sample will be
6 analyzed for the following: pH, volatile organic compounds, semi-volatile organic compounds, RCRA
7 metals, PCBs, herbicides, pesticides, phosphorous pesticides, cyanide, total organic halides (TOX),
8 anions, phenols, and chrome VI. EPA-approved analytical methods will be used for sample analysis. For
9 methods that can determine multiple analytes, the laboratory will report the routine target analyte list.
10 Quality assurance/quality control (QA/QC) samples will include one trip blank, one field blank, and one
11 equipment blank. Table 11-1 provides target analytes and the detection limits.

12
13 The laboratory will provide a data package that provides information regarding analytical holding times,
14 method blank results, matrix spikes, laboratory control samples, laboratory duplicates, chemical and
15 tracer recoveries, initial and continuing instrument calibration, and all QC checks required by the
16 analytical method. The laboratory information pertaining to the soil sample and one complete QC series
17 will be independently validated.

18
19 Constituent concentrations will be evaluated against clean closure action levels. Initial action levels will
20 be natural background levels (DOE/RL-92-24) or limit of quantitation. For concentrations above these
21 levels, closure to health-based levels calculated as described in Section 11.1.1.2 will be assessed. If
22 sampling verifies constituent concentration below these levels, soil will be clean closed. The laboratory
23 report and data evaluation will be placed in the Hanford Facility Operating Record.

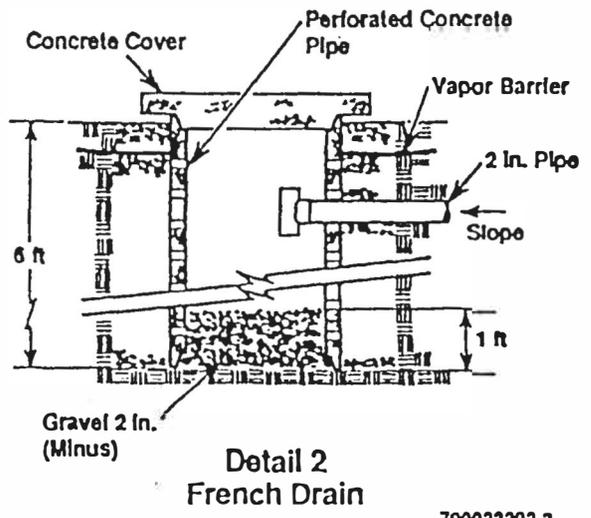
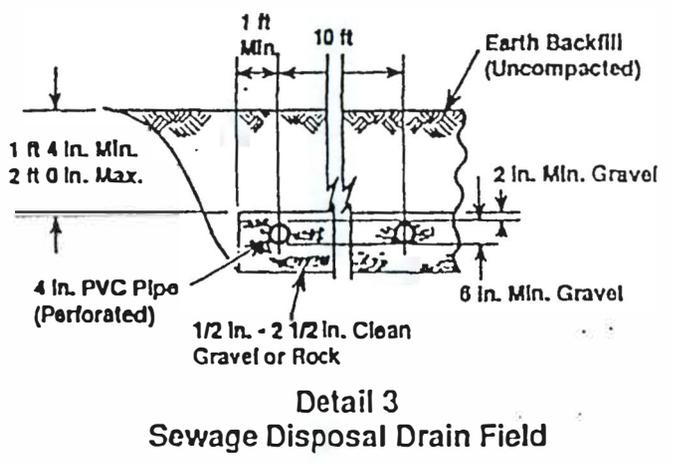
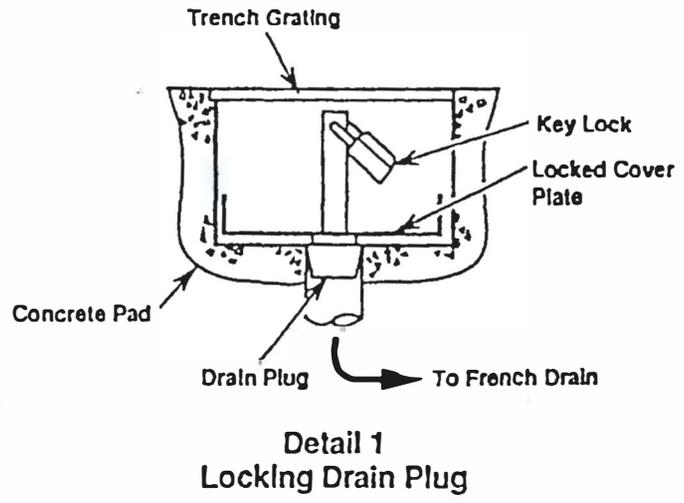
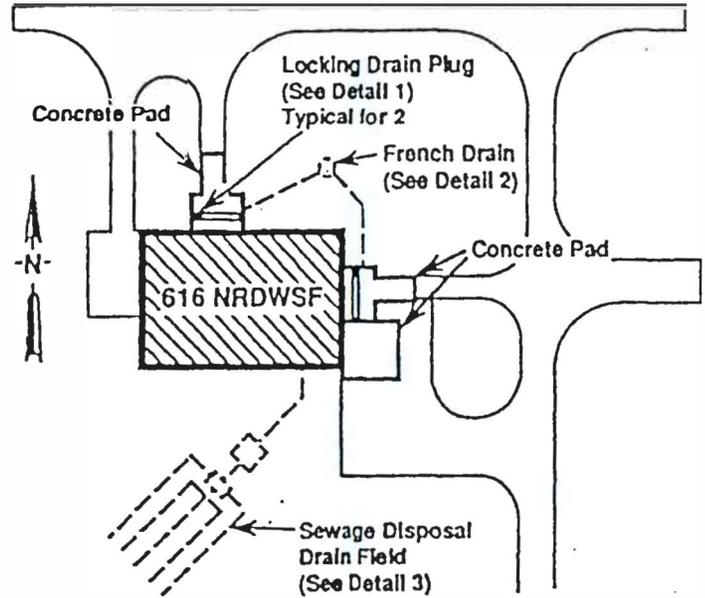
24
25 Although not expected, if the soil sampling results indicate contamination above clean closure levels, the
26 closure plan will be modified to include further characterization, remediation, and verification activities
27 as necessary to meet WAC 173-303-610(2)(b) clean closure requirements.

28 29 11.1.2.5 Other Activities [I-1b(5)]

30 No other activities are expected to be necessary for clean closure.

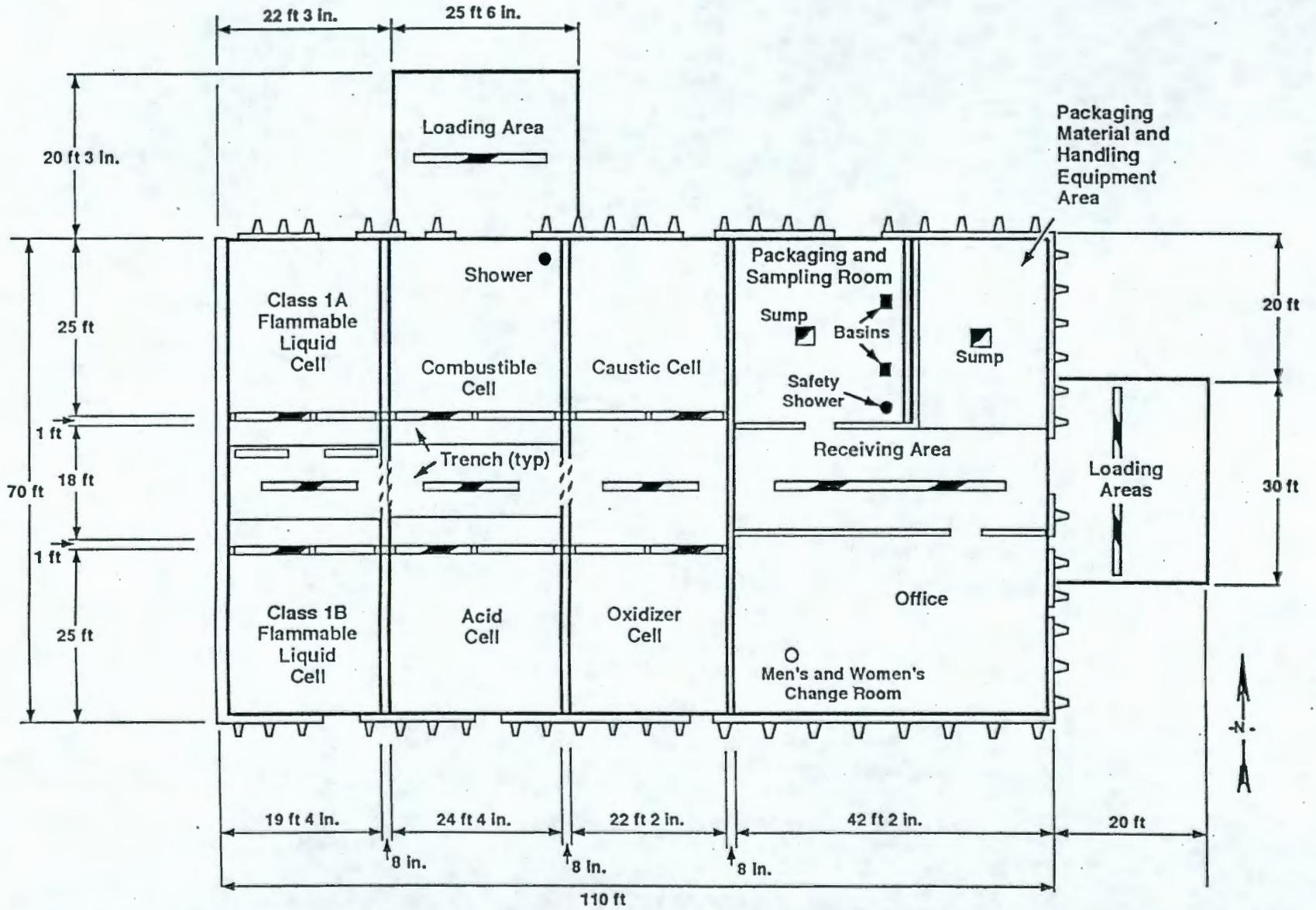
31 32 33 11.2 SCHEDULE FOR CLOSURE [I-1f]

34 A schedule for closure activities is presented in Figure 11-5. Closure activities are anticipated to be
35 completed before formal closure plan approval by inclusion of this modification into the Hanford
36 Facility RCRA Permit during Modification E (1999). Although not anticipated, if the planned closure
37 activities will not achieve clean closure, this closure plan and schedule will be revised.



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Figure 11-1. French Drain and Tile Field.



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Figure 11-2. Loading and Storage Areas.

F11-2

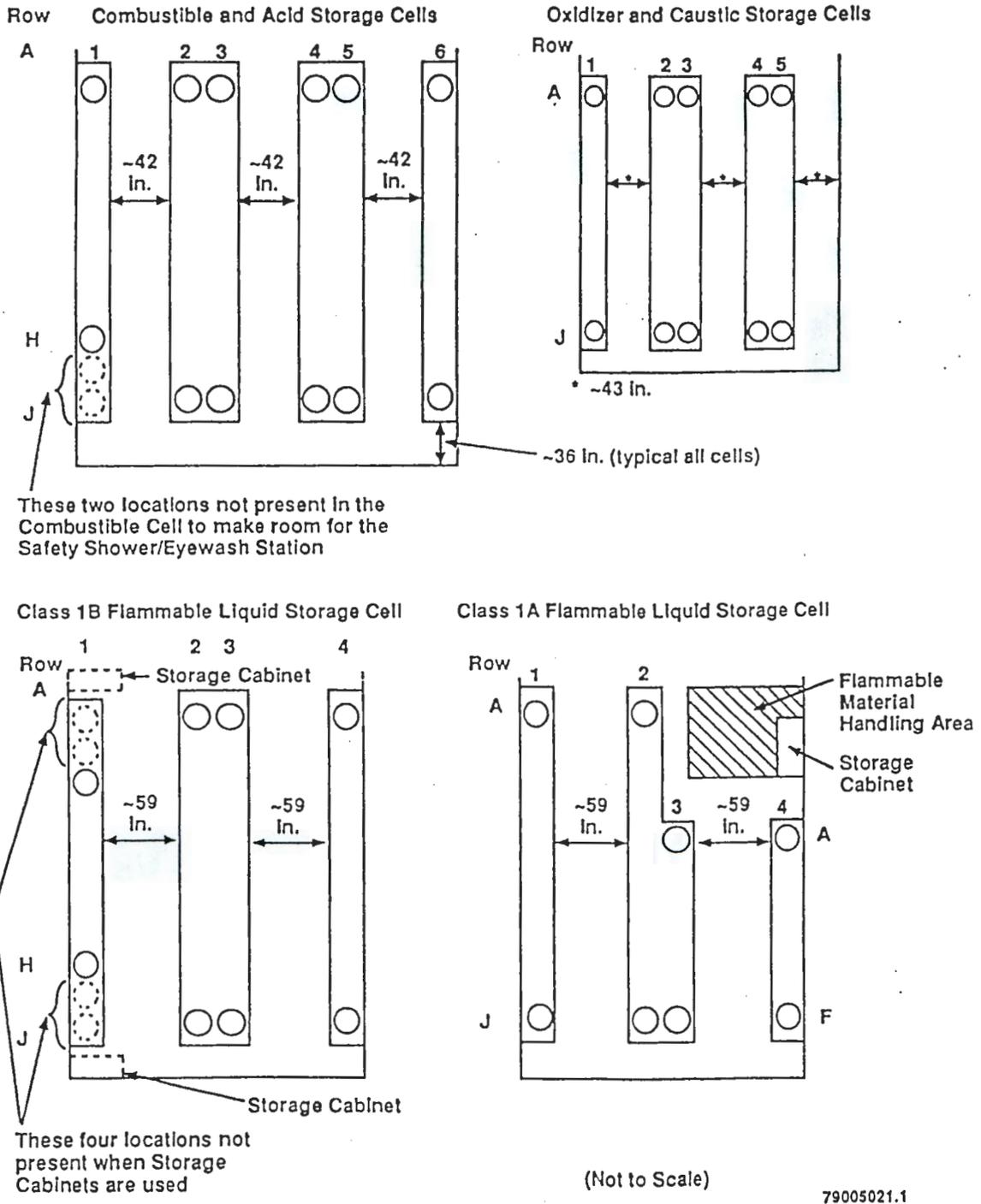


Figure 11-3. Configuration and Layout of a Typical Cell.

EXAMPLE

DECONTAMINATION AND INSPECTION CHECKLIST FOR 616 NONRADIOACTIVE DANGEROUS
WASTE STORAGE FACILITY CLOSURE ACTIVITIES

1. Portion of unit (e.g., north loading pad): _____
2. Structure/component description/material (e.g., coated concrete floor): _____
Note: Attach photographs taken during visual inspection.

DECONTAMINATION

3. Decontamination method used: _____

(Initial/Date) _____ / _____
4. Comments on decontamination (or N/A): _____

(Initial/Date) _____ / _____
5. Decontamination is complete: Date: _____ Time: _____
(Initial/Date) _____ / _____

VISUAL VERIFICATION

6. Assigned visual inspector(s):
Name: _____ Signature: _____ Initials: _____

Assigning Manager: _____
Signature Date
7. Visual inspection of all (Step 1) locations is complete: Date: _____ Time: _____
(Initial/Date) _____ / _____
8. Visual performance standard met for all (Step 1) locations (no obvious visual signs of potential contamination).
(Initial/Date) _____ / _____
9. Visual inspection comments (if any): _____

(Initial/Date) _____ / _____
10. Additional comments (if any): _____

(Initial/Date) _____ / _____
11. The checklist is complete. Forward the completed checklist to the Hanford Facility Operating Record.
(Initial/Date) _____ / _____

Figure 11-4. Example Inspection Checklist.

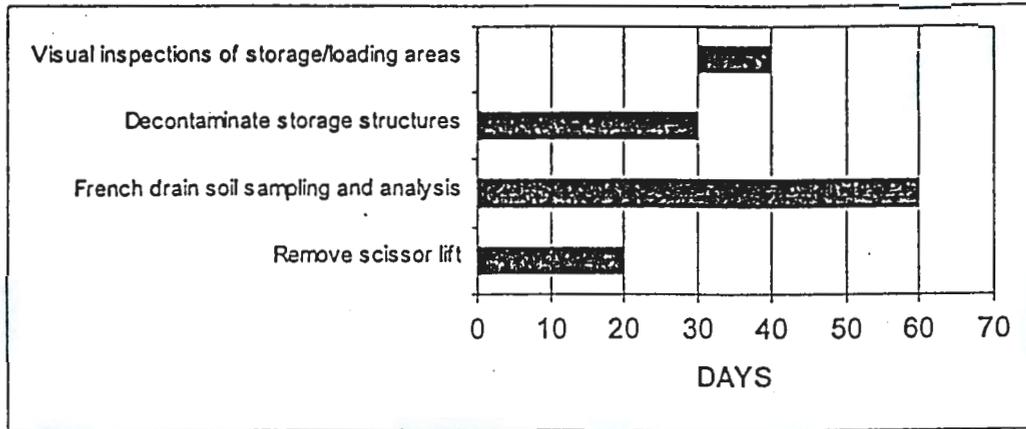


Figure 11-5. Closure Schedule.

Table 11-1. Target Analytes and Detection Levels.

Method name	Constituent long name	ID	Matrix	Reporting limits µg/kg
EPA8270A	4-Nitroaniline	100-01-6	Soil	1600
EPA8270A	4-Nitrophenol	100-02-7	Soil	1600
EPA8260A	Ethylbenzene	100-41-4	Soil	5
EPA8260A	Styrene	100-42-5	Soil	5
EPA8270A	Benzyl alcohol	100-51-6	Soil	330
EPA8260A	cis-1,3-Dichloropropene	10061-01-5	Soil	5
EPA8270A	N-Nitrosopiperidine	100-75-4	Soil	330
EPA8270A	4-Bromophenylphenyl ether	101-55-3	Soil	330
EPA8081	Heptachlor epoxide	1024-57-3	Soil	1.7
EPA8081	Endosulfan sulfate	1031-07-8	Soil	1.7
EPA8270A	2,4-Dimethylphenol	105-67-9	Soil	330
EPA8270A	N-Nitrosomethylethylamine	10595-95-6	Soil	330
EPA8270A	4-Methylphenol (cresol, p-)	106-44-5	Soil	330
EPA8270A	1,4-Dichlorobenzene	106-46-7	Soil	330
EPA8260A	1,4-Dichlorobenzene	106-46-7	Soil	5
EPA8270A	4-Chloroaniline	106-47-8	Soil	670
EPA8270A	p-Phenylenediamine	106-50-3	Soil	3300
EPA8260A	Acrolein	107-02-8	Soil	100
EPA8260A	1,2-Dichloroethane	107-06-2	Soil	5
EPA8260A	Ethyl cyanide	107-12-0	Soil	20
EPA8260A	Acrylonitrile	107-13-1	Soil	100
EPA8015M	Ethylene glycol	107-21-1	Soil	25000
EPA8260A	4-Methyl-2-Pentaneone	108-10-1	Soil	20
EPA8270A	2,2'-Oxybis(1-chloropropane)	108-60-1	Soil	330
EPA8260A	Toluene	108-88-3	Soil	5
EPA8270A	Phenol	108-95-2	Soil	330
EPA8270A	2-Picoline	109-06-8	Soil	660
EPA8270A	Tetrahydrofuran	109-99-9	Soil	50
EPA8260A	2-Chloroethyl vinyl ether	110-75-8	Soil	50
EPA8270A	Pyridine	110-86-1	Soil	660
EPA8081	Aroclor-1260	11096-82-5	Soil	33
EPA8081	Aroclor-1254	11097-69-1	Soil	33
EPA8081	Aroclor-1221	11104-28-2	Soil	33
EPA8081	Aroclor-1232	11141-16-5	Soil	33
EPA8270A	Bis(2-chloroethyl) ether	111-44-4	Soil	330
EPA8015M	2-Butoxyethanol	111-76-2	Soil	25000
EPA8270A	Bis(2-Chloroethoxy)methane	111-91-1	Soil	330
EPA8270A	Bis(2-ethylhexyl) phthalate	117-81-7	Soil	330
EPA8270A	Di-n-octylphthalate	117-84-0	Soil	330
EPA8270A	Hexachlorobenzene	118-74-1	Soil	330
EPA8270A	3,3'-Dimethylbenzidine	119-93-7	Soil	330
EPA8270A	Anthracene	120-12-7	Soil	330
EPA8150A	Dichloroprop	120-36-5	Soil	80
EPA8270A	Isosafrole	120-58-1	Soil	660

Table 11-1. Target Analytes and Detection Levels.

Method name	Constituent long name	ID	Matrix	Reporting limits $\mu\text{g}/\text{kg}$
EPA8270A	1,2,4-Trichlorobenzene	120-82-1	Soil	330
EPA8260A	1,2,4-Trichlorobenzene	120-82-1	Soil	5
EPA8270A	2,4-Dichlorophenol	120-83-2	Soil	330
EPA8270A	2,4-Dinitrotoluene	121-14-2	Soil	330
EPA8270A	alpha,alpha-Dimethylphenethylamine	122-09-8	Soil	1600
EPA8260A	Dibromochloromethane	124-48-1	Soil	5
EPA8270A	O,O,O-Triethyl phosphorothioate	126-68-1	Soil	1600
EPA8081	Aroclor-1248	12672-29-6	Soil	33
EPA8015M	Tributyl phosphate	126-73-8	Soil	25000
EPA8270A	Tributyl phosphate	126-73-8	Soil	3300
EPA8081	Aroclor-1016	12674-11-2	Soil	33
EPA8260A	Chloroprene	126-99-8	Soil	5
EPA8260A	Tetrachloroethene	127-18-4	Soil	5
EPA8270A	Pyrene	129-00-0	Soil	330
EPA8270A	1,4-Naphthoquinone	130-15-4	Soil	1600
EPA8270A	Dimethyl phthalate	131-11-3	Soil	330
EPA8270A	Dibenzofuran	132-64-9	Soil	330
EPA8260A	Xylenes (total)	1330-20-7	Soil	5
EPA8270A	1-Naphthylamine	134-32-7	Soil	330
EPA8270A	Aramite	140-57-8	Soil	660
EPA300.0	Phosphate	14265-44-2	Soil	5000
EPA8270A	Kepone	143-50-0	Soil	3300
EPA300.0	Sulfate	14808-79-8	Soil	5000
EPA8260A	cis-1,2-Dichloroethylene	156-59-2	Soil	2.5
EPA8260A	trans-1,2-Dichloroethylene	156-60-5	Soil	2.5
EPA300.0	Chloride	16887-00-6	Soil	2000
EPA300.0	Fluoride	16984-48-8	Soil	1000
EPA9030	Sulfide	18496-25-8	Soil	10000
EPA8270A	Hexachloropropene	1888-71-7	Soil	3300
EPA8270A	Benzo(ghi)perylene	191-24-2	Soil	330
EPA8150A	Dicamba	1918-00-9	Soil	40
EPA8270A	Indeno(1,2,3-cd)pyrene	193-39-5	Soil	330
EPA8270A	Benzo(b)fluoranthene	205-99-2	Soil	330
EPA8270A	Fluoranthene	206-44-0	Soil	330
EPA8270A	Benzo(k)fluoranthene	207-08-9	Soil	330
EPA8270A	Acenaphthylene	208-96-8	Soil	330
EPA8270A	Chrysene	218-01-9	Soil	330
EPA8270A	Diallate	2303-16-4	Soil	660
EPA8270A	Pronamide	23950-58-5	Soil	660
EPA8270A	O,O-Diethyl 0-2-pyrazinyl phosphorothioa	297-97-2	Soil	1600
EPA8270A	Methyl parathion	298-00-0	Soil	1600
EPA8270A	Phorate	298-02-2	Soil	1600

Table 11-1. Target Analytes and Detection Levels.

Method name	Constituent long name	ID	Matrix	Reporting limits µg/kg
EPA8270A	Disulfoton	298-04-4	Soil	1600
EPA8015M	Bis(2-ethylhexyl)phosphoric acid (D2EHPA)	298-07-7	Soil	25000
EPA8081	Aldrin	309-00-2	Soil	1.7
EPA8081	Alpha-BHC	319-84-6	Soil	1.7
EPA8081	Beta-BHC	319-85-7	Soil	1.7
EPA8081	Delta-BHC	319-86-8	Soil	1.7
EPA8081	Endosulfan II	33213-65-9	Soil	1.7
EPA8270A	Tetraethyl dithiopyrophosphate	3689-24-5	Soil	1600
EPA8270A	Isodrin	465-73-6	Soil	330
EPA8081	4,4'-DDT	50-29-3	Soil	1.7
EPA8270A	Benzo(a)pyrene	50-32-8	Soil	330
EPA8270A	Chlorobenzilate	510-15-6	Soil	330
EPA8270A	2,4-Dinitrophenol	51-28-5	Soil	1600
EPA8270A	Famphur	52-85-7	Soil	3300
EPA8270A	4,6-Dinitro-2methyl phenol	534-52-1	Soil	1600
EPA8081	Aroclor-1242	53469-21-9	Soil	33
EPA8270A	Dibenz[a,h]anthracene	53-70-3	Soil	330
EPA8270A	2-Acetylaminofluorene	53-96-3	Soil	3300
EPA8260A	1,2-Dichloroethene(Total)	540-59-0	Soil	5
EPA8270A	1,3-Dichlorobenzene	541-73-1	Soil	330
EPA8270A	N-Nitrosodiethylamine	55-18-5	Soil	330
EPA8260A	Carbon tetrachloride	56-23-5	Soil	5
EPA8270A	Parathion	56-38-2	Soil	1600
EPA8270A	3-Methylcholanthrene	56-49-5	Soil	660
EPA8270A	Benzo(a)anthracene	56-55-3	Soil	330
EPA8270A	4-Nitroquinoline-1-oxide	56-57-5	Soil	3300
EPA335.2	Cyanide	57-12-5	Soil	0.5
EPA9010	Cyanide	57-12-5	Soil	0.5
EPA8081	Chlordane	57-74-9	Soil	1.7
EPA8270A	7,12-Dimethylbenz[a]anthracene	57-97-6	Soil	660
EPA8081	Gamma-BHC (Lindane)	58-89-9	Soil	1.7
EPA8270A	2,3,4,6-Tetrachlorophenol	58-90-2	Soil	330
EPA8260A	2-Hexanone	591-78-6	Soil	20
EPA8270A	4-Chloro-3-methylphenol	59-50-7	Soil	670
EPA8270A	N-Nitrosomorpholine	59-89-2	Soil	330
EPA8270A	p-Dimethylaminoazobenzene	60-11-7	Soil	660
EPA8015M	Diethyl ether	60-29-7	Soil	25000
EPA8270A	Dimethoate	60-51-5	Soil	660
EPA8081	Dieldrin	60-57-1	Soil	1.7
EPA8270A	2,6-Dinitrotoluene	606-20-2	Soil	330
EPA8270A	Pentachlorobenzene	608-93-5	Soil	330
EPA8270A	N-Nitroso-di-n-dipropylamine	621-64-7	Soil	330
EPA8270A	Phenacetin	62-44-2	Soil	660

Table 11-1. Target Analytes and Detection Levels.

Method name	Constituent long name	ID	Matrix	Reporting limits µg/kg
EPA8270A	Ethyl methanesulfonate	62-50-0	Soil	330
EPA8270A	Aniline	62-53-3	Soil	330
EPA8270A	N-Nitrosodimethylamine	62-75-9	Soil	330
EPA8260A	1,1,1,2-Tetrachloroethane	630-20-6	Soil	5
EPA8015M	Ethanol	64-17-5	Soil	25000
EPA8015M	Normal paraffin hydrocarbons (petroleum)	64771-72-8	Soil	25000
EPA8270A	Benzoic acid	65-85-0	Soil	1600
EPA8270A	Methyl methanesulfonate	66-27-3	Soil	330
EPA8015M	Methanol	67-56-1	Soil	25000
EPA8260A	Acetone	67-64-1	Soil	20
EPA8260A	Chloroform	67-66-3	Soil	5
EPA8270A	Hexachloroethane	67-72-1	Soil	330
WTPH-DIESEL	Diesel oil	68334-30-5	Soil	25000
EPA8270A	4-Chlorophenylphenyl ether	7005-72-3	Soil	330
EPA8260A	1-Butanol	71-36-3	Soil	100
EPA8260A	Benzene	71-43-2	Soil	5
EPA8260A	1,1,1-Trichloroethane	71-55-6	Soil	5
EPA8081	Endrin	72-20-8	Soil	1.7
EPA8081	Methoxychlor	72-43-5	Soil	1.7
EPA8081	4,4'-DDD	72-54-8	Soil	1.7
EPA8081	4,4'-DDE	72-55-9	Soil	1.7
EPA8081	Endrin aldehyde	7421-93-4	Soil	1.7
EPA6010A	Aluminum	7429-90-5	Soil	20000
EPA6010A	Iron	7439-89-6	Soil	10000
EPA6010A	Lead	7439-92-1	Soil	10000
EPA7421	Lead	7439-92-1	Soil	300
EPA6010A	Lithium	7439-93-2	Soil	5000
EPA6010A	Magnesium	7439-95-4	Soil	500000
EPA6010A	Manganese	7439-96-5	Soil	1500
EPA7470	Mercury	7439-97-6	Soil	33
EPA7471	Mercury	7439-97-6	Soil	100
EPA6010A	Molybdenum	7439-98-7	Soil	4000
EPA6010A	Nickel	7440-02-0	Soil	4000
EPA6010A	Potassium	7440-09-7	Soil	500000
EPA6010A	Silicon	7440-21-3	Soil	50000
EPA6010A	Silver	7440-22-4	Soil	1000
EPA6010A	Sodium	7440-23-5	Soil	500000
EPA6010A	Strontium (elemental)	7440-24-6	Soil	5000
EPA6010A	Thallium	7440-28-0	Soil	200000
EPA7840	Thallium	7440-28-0	Soil	1000
EPA7841	Thallium	7440-28-0	Soil	1000
EPA6010A	Tin	7440-31-5	Soil	10000
EPA6010A	Titanium	7440-32-6	Soil	5000

Table 11-1. Target Analytes and Detection Levels.

Method name	Constituent long name	ID	Matrix	Reporting limits $\mu\text{g}/\text{kg}$
EPA6010A	Antimony	7440-36-0	Soil	6000
EPA7060	Arsenic	7440-38-2	Soil	1000
EPA6010A	Arsenic	7440-38-2	Soil	30000
EPA6010A	Barium	7440-39-3	Soil	20000
EPA6010A	Beryllium	7440-41-7	Soil	500
EPA6010A	Boron	7440-42-8	Soil	20000
EPA7130	Cadmium	7440-43-9	Soil	100
EPA7131	Cadmium	7440-43-9	Soil	100
EPA6010A	Cadmium	7440-43-9	Soil	500
EPA7191	Chromium	7440-47-3	Soil	100
EPA6010A	Chromium	7440-47-3	Soil	1000
EPA6010A	Cobalt	7440-48-4	Soil	5000
EPA6010A	Copper	7440-50-8	Soil	2500
EPA6010A	Vanadium	7440-62-2	Soil	5000
EPA6010A	Zinc	7440-66-6	Soil	2000
EPA6010A	Zirconium	7440-67-7	Soil	10000
EPA6010A	Calcium	7440-70-2	Soil	500000
EPA8260A	Bromomethane	74-83-9	Soil	10
EPA8260A	Chloromethane	74-87-3	Soil	10
EPA8260A	Iodomethane	74-88-4	Soil	5
EPA8260A	Dibromomethane	74-95-3	Soil	5
EPA8260A	Chloroethane	75-00-3	Soil	10
EPA8260A	Vinyl chloride	75-01-4	Soil	10
EPA8260A	Methylenechloride	75-09-2	Soil	5
EPA8260A	Carbon disulfide	75-15-0	Soil	5
EPA8260A	Bromoform	75-25-2	Soil	5
EPA8260A	Bromodichloromethane	75-27-4	Soil	5
EPA8260A	1,1-Dichloroethane	75-34-3	Soil	5
EPA8260A	1,1-Dichloroethene	75-35-4	Soil	5
EPA8260A	Dichlorodifluoromethane	75-71-8	Soil	10
EPA8150A	Dalapon	75-99-0	Soil	40
EPA8270A	Pentachloroethane	76-01-7	Soil	1600
EPA8260A	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	Soil	10
EPA8081	Heptachlor	76-44-8	Soil	1.7
EPA365.4	Phosphorus	7723-14-0	Soil	10000
EPA8270A	Hexachlorocyclopentadiene	77-47-4	Soil	1600
EPA6010A	Selenium	7782-49-2	Soil	25000
EPA7740	Selenium	7782-49-2	Soil	500
EPA8270A	Isophorone	78-59-1	Soil	330
EPA8260A	1,2-Dichloropropane	78-87-5	Soil	5
EPA8260A	2-Butanone	78-93-3	Soil	20
EPA8260A	1,1,2-Trichloroethane	79-00-5	Soil	5
EPA8260A	Trichloroethene	79-01-6	Soil	5

Table 11-1. Target Analytes and Detection Levels.

Method name	Constituent long name	ID	Matrix	Reporting limits $\mu\text{g}/\text{kg}$
EPA8260A	1,1,2,2-Tetrachloroethane	79-34-5	Soil	5
EPA8081	Toxaphene	8001-35-2	Soil	67
WTPH-GAS	Gasoline	8006-61-9	Soil	500
EPA8015M	Kerosene	8008-20-6	Soil	25000
EPA8260A	Methyl methacrylate	80-62-6	Soil	5
EPA8270A	Pentachloronitrobenzene (PCNB)	82-68-8	Soil	1600
EPA8270A	Acenaphthene	83-32-9	Soil	330
EPA8270A	Diethylphthalate	84-66-2	Soil	330
EPA8270A	Di-n-butylphthalate	84-74-2	Soil	330
EPA8270A	Phenanthrene	85-01-8	Soil	330
EPA8270A	Butylbenzylphthalate	85-68-7	Soil	330
EPA8270A	N-Nitrosodiphenylamine	86-30-6	Soil	330
EPA8270A	Fluorene	86-73-7	Soil	330
EPA8270A	Carbazole	86-74-8	Soil	330
EPA8270A	2,6-Dichlorophenol	87-65-0	Soil	330
EPA8270A	Hexachlorobutadiene	87-68-3	Soil	330
EPA8270A	Pentachlorophenol	87-86-5	Soil	1600
EPA8270A	2,4,6-Trichlorophenol	88-06-2	Soil	330
EPA8270A	2-Nitroaniline	88-74-4	Soil	1600
EPA8270A	2-Nitrophenol	88-75-5	Soil	330
EPA8150A	2-secButyl-4,6-dinitrophenol(DNBP)	88-85-7	Soil	12
EPA8270A	2-secButyl-4,6-dinitrophenol(DNBP)	88-85-7	Soil	660
EPA8270A	Naphthalene	91-20-3	Soil	330
EPA8270A	2-Methylnaphthalene	91-57-6	Soil	330
EPA8270A	2-Chloronaphthalene	91-58-7	Soil	330
EPA8270A	2-Naphthylamine	91-59-8	Soil	330
EPA8270A	Methapyrilene	91-80-5	Soil	1600
EPA8270A	3,3'-Dichlorobenzidine	91-94-1	Soil	1600
EPA8270A	N-Nitrosodi-n-butylamine	924-16-3	Soil	330
EPA8270A	4-Aminobiphenyl	92-67-1	Soil	1600
EPA8270A	Nitrosopyrrolidine	930-55-2	Soil	330
EPA8150A	MCPP	93-65-2	Soil	8000
EPA8150A	2,4,5-TP	93-72-1	Soil	20
EPA8150A	2,4,5-T	93-76-5	Soil	20
EPA8270A	Safrol	94-59-7	Soil	660
EPA8150A	MCPA	94-74-6	Soil	8000
EPA8150A	2,4-Dichlorophenoxyacetic acid	94-75-7	Soil	80
EPA8150A	2,4-DB	94-82-6	Soil	80
EPA8270A	2-Methylphenol (cresol, o-)	95-48-7	Soil	330
EPA8270A	1,2-Dichlorobenzene	95-50-1	Soil	330
EPA8270A	o-Toluidine	95-53-4	Soil	660
EPA8270A	2-Chlorophenol	95-57-8	Soil	330

Table 11-1. Target Analytes and Detection Levels.

Method name	Constituent long name	ID	Matrix	Reporting limits $\mu\text{g}/\text{kg}$
EPA8270A	1,2,4,5-Tetrachlorobenzene	95-94-3	Soil	330
EPA8270A	2,4,5-Trichlorophenol	95-95-4	Soil	330
EPA8081	Endosulfan I	959-98-8	Soil	1.7
EPA8260A	1,2,3-Trichloropropane	96-18-4	Soil	5
EPA8270A	Acetophenone	98-86-2	Soil	330
EPA8270A	Nitrobenzene	98-95-3	Soil	330
EPA8270A	3-Nitroaniline	99-09-2	Soil	1600
EPA8270A	sym-Trinitrobenzene	99-35-4	Soil	1600
EPA8270A	5-Nitro-o-toluidine	99-55-8	Soil	660
EPA8270A	m-Dinitrobenzene	99-65-0	Soil	330
EPA353.1	Nitrogen in Nitrite and Nitrate	NO ₂ +NO ₃ -N	Soil	500
EPA300.0	Nitrogen in Nitrite	NO ₂ -N	Soil	200
EPA300.0	Nitrogen in Nitrate	NO ₃ -N	Soil	200
EPA413.1	Oil and grease	OIL/GREASE	Soil	500000
EPA415.1	Total organic carbon	TOC	Soil	25000
EPA9060	Total organic carbon	TOC	Soil	25000
EPA418.1	Total petroleum hydrocarbons	TPH	Soil	5000

CAS # = Chemical Abstracts Service number.

$\mu\text{g}/\text{kg}$ = micrograms per kilograms (parts per billion).

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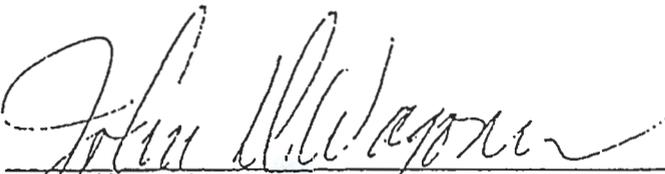
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14.0 CERTIFICATION [K]

The following certification, required by WAC 173-303-810(13), for all applications and reports submitted to Ecology is hereby included:

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.



Owner/Operator
John D. Wagoner, Manager
U.S. Department of Energy
Field Office, Richland

10/30/91
Date



Co-operator
Thomas M. Anderson, President
Westinghouse Hanford Company

10/4/91
Date

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14.0 CERTIFICATION [K]*

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

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18 John D. Wagoner

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21 Owner/Operator
22 John D. Wagoner, Manager
23 U.S. Department of Energy
24 Richland Operations Office

7/26/96
Date

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28 A. LaMar Trego

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30 Co-operator
31 A. LaMar Trego, President
32 Westinghouse Hanford Company

7/17/96
Date

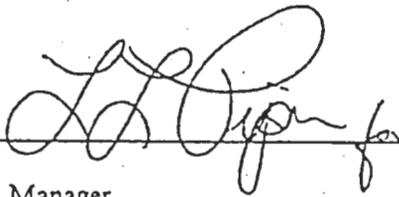
33 * This certification statement is only for Chapter 6.0, Revision 2A
34 (Procedures to Prevent Hazards) for the 616 Nonradioactive Dangerous Waste
35 Storage Facility.

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14.0 PART B CERTIFICATION [K]
Modification D

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.



Owner/Operator
John D. Wagoner, Manager
U.S. Department of Energy
Richland Operations Office

5/22/98
Date



Co-operator
H. J. Hatch,
President and Chief Executive Officer
Fluor Daniel Hanford Company

May 14, 1998
Date

Note: This certifies the following: Chapter 7.0 (Contingency Plan), Revision 2A; Appendix 7A (Building Emergency Plan for the 616 Nonradioactive Dangerous Waste Storage Facility, HNF-IP-0263-616), Revision 4; Appendix 8A (Training Plan for the 616 Nonradioactive Dangerous Waste Storage Facility, HNF-1276), Revision 1.

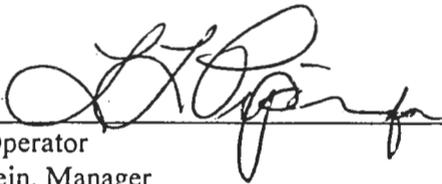
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14.0 PART B CERTIFICATION [K]

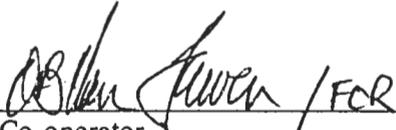
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I certify under penalty of law that Chapter 11.0 was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the 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.



Owner/Operator
K. A. Klein, Manager
U.S. Department of Energy
Richland Operations Office

6/1/99
Date



Co-operator
R. D. Hanson,
President and Chief Executive Officer
Fluor Daniel Hanford, Inc.

5/26/99
Date

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