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Accession #: D295191787

Document #: SD-WM-PICD-002

Title/Desc:

INTERFACE CONTROL DOCUMENT BETWEEN PUREX PLANT
TRANSITION & SOLID WASTE DISPOSAL DIVISION

Pages: 45

ENGINEERING CHANGE NOTICE

Page 1 of 21. ECN **609670**Proj.
ECN2. ECN Category
(mark one)

Supplemental ☐
 Direct Revision ☒
 Change ECN ☐
 Temporary ☐
 Standby ☐
 Supersedure ☐
 Cancel/Void ☐

3. Originator's Name, Organization, MSIN, and
Telephone No.K.L. Hladek, Solid Waste Disposal
Division, T4-02, 372-3201

3a. USQ Required?

☐ Yes ☒ No

4. Date

9/18/95

5. Project Title/No./Work Order No.

Interface Control Document Between
PUREX Plant Transition and Solid Waste
Disposal Division

6. Bldg./Sys./Fac. No.

202-A

7. Approval Designator

N/A

8. Document Numbers Changed by this ECN (includes
sheet no. and rev.)

WHC-SD-WM-PICD-002, Rev. 0

9. Related ECN No(s).

10. Related PO No.

11a. Modification Work

☐ Yes (fill out Blk. 11b)
☒ No (NA Blks. 11b,
 11c, 11d)

11b. Work Package No.

NA

11c. Modification Work Complete

NA

Cog. Engineer Signature & Date

11d. Restored to Original Condi-
tion (Temp. or Standby ECN only)

NA

Cog. Engineer Signature & Date

12. Description of Change

The PUREX/EO₃ Plant Transition Interface Control Document was completely revised to reflect new waste volume projects from PUREX Plant Transition. The transfer of EO₃ Plant to the Environmental Restoration Contractor removed EO₃ Plant from the scope of the document, so EO₃ was deleted.

13a. Justification (mark one)

Criteria Change ☐ Design Improvement ☐ Environmental ☐ Facility Deactivation ☒
 As-Found ☐ Facilitate Const ☐ Const. Error/Omission ☐ Design Error/Omission ☐

13b. Justification Details

Revision of the Interface Control Document is required to address changes in projected waste volumes.

14. Distribution (include name, MSIN, and no. of copies)

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Page 2 of 2

15. Design Verification Required

☐ Yes

☒ No

16. Cost Impact

ENGINEERING

Additional ☐ \$

Savings ☐ \$

CONSTRUCTION

Additional ☐ \$

Savings ☐ \$

17. Schedule Impact (days)

Improvement ☐

Delay ☐

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

Functional Design Criteria	☐	Stress/Design Report	☐	Health Physics Procedure	☐
Operating Specification	☐	Interface Control Drawing	☐	Spares Multiple Unit Listing	☐
Criticality Specification	☐	Calibration Procedure	☐	Test Procedures/Specification	☐
Conceptual Design Report	☐	Installation Procedure	☐	Component Index	☐
Equipment Spec.	☐	Maintenance Procedure	☐	ASME Coded Item	☐
Const. Spec.	☐	Engineering Procedure	☐	Human Factor Consideration	☐
Procurement Spec.	☐	Operating Instruction	☐	Computer Software	☐
Vendor Information	☐	Operating Procedure	☐	Electric Circuit Schedule	☐
OM Manual	☐	Operational Safety Requirement	☐	ICRS Procedure	☐
FSAR/SAR	☐	IEPD Drawing	☐	Process Control Manual/Plan	☐
Safety Equipment List	☐	Cell Arrangement Drawing	☐	Process Flow Chart	☐
Radiation Work Permit	☐	Essential Material Specification	☐	Purchase Requisition	☐
Environmental Impact Statement	☐	Fac. Proc. Samp. Schedule	☐	Tickler File	☐
Environmental Report	☐	Inspection Plan	☐	Solid Waste Technical Baseline	☒
Environmental Permit	☐	Inventory Adjustment Request	☐		☐

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision

Document Number/Revision

Document Number/Revision

20. Approvals

Signature

Date

Signature

Date

OPERATIONS AND ENGINEERING

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A.B. Carlson

9/27/95

Cog. Mgr., K.L. Hladek

K.L. Hladek

9-27-95

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Safety

Environ.

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9/29/95

ARCHITECT-ENGINEER

PE

QA

Safety

Design

Environ.

Other

DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

ADDITIONAL

RELEASE AUTHORIZATION

Document Number: WHC-SD-WM-PICD-002, REV 1

Document Title: Interface Control Document Between PUREX Plant
Transition and Solid Waste Disposal Division

Release Date: 12/12/95

**This document was reviewed following the
procedures described in WHC-CM-3-4 and is:**

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara Broz

12/12/95

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SUPPORTING DOCUMENT		1. Total Pages 40
2. Title Interface Control Document Between PUREX Plant Transition and Solid Waste Disposal Division	3. Number WHC-SD-WM-PICD-002	4. Rev No. 1
5. Key Words interface control document, solid waste, waste volume forecast, PUREX plant	6. Author Name: Alan B Carlson <i>Alan B Carlson</i> Signature Organization/Charge Code 87320/A9E40 ^{A1003 TC} 12/2/95	
7. Abstract The interfacing responsibilities regarding solid waste management are described for the Solid Waste Disposal Division and the PUREX Transition Organization.		
8. RELEASE STAMP <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 10px auto;"> <div style="display: flex; justify-content: space-between;"> <div> DATE: STA: 4 </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> HANFORD RELEASE </div> <div style="text-align: right;"> ID: 3 </div> </div> <div style="text-align: center; margin-top: 10px;"> DEC 12 1995 </div> </div>		

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INTERFACE CONTROL DOCUMENT BETWEEN PUREX
PLANT TRANSITION AND SOLID WASTE
DISPOSAL DIVISION

September 1995

Document Title: INTERFACE CONTROL DOCUMENT BETWEEN PUREX PLANT
TRANSITION AND SOLID WASTE DISPOSAL DIVISION,
WHC-SD-WM-PICD-002 REV 1

Approved by:

D. G. Hamrick, Manager
PUREX Plant Transition

9/28/95
Date

Approved by:

W. H. Hamilton, Jr., Director
Solid Waste Disposal

9/28/95
Date

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LIST OF TERMS

D&D	disposal and decontamination
ECN	engineering change notice
ER	Environmental Restoration
ICD	interface control document
LDR	land disposal restriction
LLMW	low-level mixed waste
LLW	low-level waste
PPT	PUREX Plant Transition
RCRA	Resource Conservation and Recovery Act
SEAC	Safety and Environmental Advisory Council
SWD	Solid Waste Disposal
TRU	transuranic
TSD	treatment, storage, and disposal
WRAP	Waste Receiving and Processing

INTERFACE CONTROL DOCUMENT BETWEEN PUREX PLANT TRANSITION AND SOLID WASTE DISPOSAL DIVISION

1.0 PURPOSE

This interface control document (ICD) between PUREX Plant Transition (PPT) and Solid Waste Disposal (SWD) Division establishes the top level functional responsibilities of each division where interfaces exist between the two divisions. Since the PUREX Transition and the SWD Divisions operate autonomously, it is important that each division has a clear understanding of the other divisions's expectation regarding these interfaces. This

ICD primarily deals with solid wastes generated by the PPT. In addition to delineating functional responsibilities, the ICD includes a baseline description of those wastes that will require management as part of the interface between the divisions. The baseline description of wastes includes waste volumes and timing for use in planning the proper waste management capabilities; the primary purpose of this ICD is to ensure defensibility of expected waste stream volumes and characteristics for future waste management facilities. Waste descriptions must be as complete as possible to ensure adequate treatment, storage, and disposal capability will exist when required. The ICD also facilitates integration of existing or planned waste management capabilities of the PPT and SWD Divisions. The ICD does not impact or affect the existing processes or procedures for shipping, packaging, or approval for shipping wastes by generators to the SWD.

This document is part of the baseline documentation for both programs and can be changed only by use of an engineering change notice (ECN) approved by representatives of both the PPT and the SWD Divisions. The current baseline for the SWD is described in the *Solid Waste Program Technical Baseline Description*", (Carlson et al., 1994)

Fulfilling ICD reporting requirements as stated in this document will satisfy solid waste reporting requirements as stated in Department of Energy (DOE) Order RL 5820.2A (Radioactive Waste Management) (Willis et al. 1991). It is expected that an annual letter will be sent requesting re-evaluation of the ICD estimates. If a change is appropriate an ECN will be prepared.

2.0 PUREX PLANT TRANSITION RESPONSIBILITIES

The purpose of the PPT is to establish a passively safe and environmentally secure configuration of the PUREX Plant. This configuration is to be preserved for a ten year horizon past the completion of deactivation to allow definition, authorization, and initiation of follow-on disposal and decontamination (D&D) activities. PUREX Plant Transition does not expect to generate or ship solid waste to the Central Waste Complex/Burial Grounds after fiscal year 1997. Purex Plant Transition is responsible for solid waste management for the PUREX plant up to that time. Solid waste generated from post-deactivation surveillance work and subsequent D&D work will be the responsibility of the site Environmental Restoration (ER) Contractor.

The PPT is chartered to perform terminal clean out and deactivation activities prior to transfer of the facilities to the ER Contractor. These activities include removing, reducing, and/or stabilizing the major remaining radioactive sources within PUREX Plant process buildings and the hazardous chemicals at PUREX. At completion, the plant will be unoccupied, locked, and maintained with minimum entry requirements.

The PUREX Transition Project scope also includes ancillary support structures and is roughly defined by the existing fence lines. The PUREX storage tunnels, however, are not included in the Transition Project scope, other than to potentially accept some bulky equipment during the deactivation process for storage pending D&D.

Deactivation activities will result in the following:

- Nonradioactive, nondangerous waste such as office trash, non-recyclable waste paper, and other throwaway materials.
- Nonradioactive dangerous waste such as expired chemicals, fluorescent lamp ballasts, aerosol cans, and chemically contaminated equipment.
- Transuranic (TRU) waste including glass, paper, cloth, plastic, piping, ducting, portions of gloveboxes, and failed equipment. TRU waste will come from N and L cells, the product removal room, samplers in the west end of the sample gallery, and the PUREX analytical laboratory.
- Transuranic mixed waste, which is similar to TRU waste but contaminated with dangerous constituents such as nitric acid or lead.
- Low level waste (LLW), which is radioactive waste not contaminated with sufficient concentrations of transuranic materials, and includes waste paper, plastic, rubber, and maintenance materials.
- Low level mixed waste (LLMW), which is LLW contaminated with dangerous constituents and includes expended laboratory chemicals, waste oils, aerosol cans, and solvent-wetted rags.

3.0 SOLID WASTE DISPOSAL DIVISION RESPONSIBILITIES

The SWD is chartered to manage the centralized facilities for the receipt, containment, treatment, storage, and disposal of solid waste at Hanford. It provides the technical, managerial, and programmatic functions to ensure safe and proper disposition of solid wastes. Solid Waste Disposal provides storage of mixed, TRU, and greater than Category 3 waste, burial of LLW, treatment and disposal of dangerous and LLMW; and characterization, size reduction, packaging, certification, and shipment of TRU waste to the Waste Isolation Pilot Plant.

The SWD is responsible for planning, coordinating, and implementing solid waste treatment, storage, and disposal (TSD) activities. The SWD will fund the design and construction of solid waste TSD facilities. The cost for disposal of PPT generated waste in the 200 Area burial grounds will include only the costs associated with waste disposal. Solid Waste Disposal is responsible for regulatory permitting and associated negotiations for all solid waste TSD facilities. The SWD is responsible for the operation of the solid waste TSD facilities required to support the PPT. Solid Waste Disposal is responsible for the solid waste generated by PPT when it is accepted at the solid waste TSD facilities. Operation of the solid waste TSD facilities will be by SWD in accordance with solid waste procedures and regulatory agreements.

The SWD will provide an annual update to this document through an ECN. The update will reflect the most current planning of both divisions.

3.1 SOLID WASTE ACCEPTANCE AND GENERATOR SERVICES

The SWD provides services to aid generators of solid waste. The *Hanford Site Solid Waste Acceptance Criteria*, (Willis et al. 1991), defines the criteria that must be met by waste generators for solid waste to be accepted at SWD TSD facilities. In addition, the *Hanford Site Solid Waste Acceptance Criteria* summarizes the responsibilities and authorities of the following with regard to solid waste management:

- Waste generator.
- Solid Waste Disposal Division.
- Office of Sample Management.
- Westinghouse Hanford Safety and Environmental Advisory Council (SEAC) and the Waste Management Subcouncil.
- DOE Field Office, Richland Waste Management Division Director.
- Westinghouse Hanford Transition Logistics.
- Westinghouse Transportation and Waste Handling.

3.2 SOLID WASTE STORAGE

The SWD provides storage for LLMW, TRU and TRU mixed waste, and Greater than Category 3 LLW. Facilities available to support storage of solid wastes are:

- Central Waste Complex, currently used for storage of low-level mixed waste, Greater than Category 3 LLW, TRU waste, and TRU mixed waste prior to disposal.

- Transuranic Storage and Assay Facility, currently used for storage of TRU and TRU mixed waste.
- 616 Facility, which provides storage of dangerous waste.

3.3 SOLID WASTE DECONTAMINATION SERVICES

The SWD assists the decontamination of Hanford Site facility equipment and waste by providing decontamination and repair services. In addition, waste decontamination services provides liquid waste tank car certification, repair, and decontamination. Facilities available to provide solid waste decontamination services are:

- 221-T Canyon Facility for decontamination of high-dose level equipment and waste.
- 2706-T Facility for low-dose level decontamination and repair of equipment and decontamination of waste.

3.4 SOLID WASTE TREATMENT

The SWD will provide for any required treatment or repackaging of LLMW, TRU waste, and TRU mixed waste. Capabilities that will be available to support treatment of solid wastes generated by the PPT are:

- Waste Receiving and Processing (WRAP) Module 1, which will provide characterization, treatment, certification, and packaging of contact-handled TRU waste for eventual shipment offsite.
- Commercial Services, via contract, to provide treatment for LLMW (except for Greater than Category 3 low-level mixed waste).
- Treatment and packaging of oversized and remote-handled TRU waste in a facility selected from the alternatives identified in the M-33 Milestone Report.
- Thermal Treatment, which is planned for Resource Conservation and Recovery Act (RCRA) Land Disposal Restriction (LDR) treatment of LLMW. Thermal treatment may be contracted or privatized.

3.5 SOLID WASTE DISPOSAL

The SWD provides disposal for LLW (except Greater than Category 3 LLW) and LLMW (except Greater than Category 3 LLMW). Disposal is provided in the Low-Level Burial Grounds operated by the SWD. The Low-Level Burial Grounds will include separate RCRA compliant trenches for the disposal of LLMW that meets the land disposal restrictions (except Greater than Category 3 LLMW).

4.0 INTERFACE BETWEEN SOLID WASTE DISPOSAL AND PUREX PLANT TRANSITION

4.1 SOLID WASTES GENERATED BY PUREX PLANT TRANSITION

Solid Waste Disposal will accept the solid wastes identified in Section 5.1. The LLW and LLMW (classified as Category 1 through Category 3 in Willis et al. 1991) will be accepted for treatment, storage, and disposal by the SWD. LLW and LLMW classified as Greater than Category 3 (Willis et al. 1991) will be accepted for storage. Transuranic solidwaste that PPT generates will be accepted for treatment and storage until the waste is shipped to the Waste Isolation Pilot Plant for final disposal. Acceptance of unique waste will be handled on a case by case basis. These quantities are expected to be minimal.

4.1.1 Solid Waste Acceptance

Solid wastes generated by PPT will be accepted by the SWD provided the waste meets the established criteria as provided in the *Hanford Site Solid Waste Acceptance Criteria*, (Willis et al. 1991). PUREX Plant Transition is responsible for meeting the specified criteria for waste generators in (Willis et al. 1991).

4.1.2 Solid Waste Storage

The SWD will provide adequate storage capacity to store the quantity of solid waste generated by the PPT as described in Section 5.0.

4.1.3 Solid Waste Decontamination Services

The SWD will provide adequate decontamination services for contaminated equipment and waste generated by PPT. The SWD will decontaminate the quantity of solid waste generated PPT as described in Section 5.0.

4.1.4 Solid Waste Treatment

The SWD will provide adequate treatment capacity to treat the quantity of solid waste generated by PPT as described in Section 5.0.

4.1.5 Solid Waste Disposal

The SWD will provide adequate disposal capacity to dispose the quantity of solid waste generated by PPT as described in Section 5.0.

PUREX Plant Transition will provide waste to the SWD according to the provisions of WHC-EP-0063, *Hanford Site Solid Waste Acceptance Criteria*, latest revision, and will provide solid waste forecasts annually to the SWD. Waste will be generated and managed, prior to acceptance by the SWD, by PPT for its duration, expected to be through fiscal year 1997. Waste generated during the subsequent surveillance phase of the PUREX Plant will be the responsibility of the Site Environmental Restoration Contractor.

The SWD will accept all waste generated by PPT that meets the acceptance provisions of WHC-EP-0063. Waste that was not included in the annual waste volume forecast will be accepted on a case by case basis.

5.0 ESTIMATES OF WASTE REQUIRING INTERFACE ESTABLISHMENTS

5.1 SOLID WASTES GENERATED BY PUREX PLANT TRANSITION

The SWD will accept all of the solid wastes identified in this section that are generated by PPT. The LLW and LLMW (classified as Category 1 through Category 3 in Willis et al. 1991) will be accepted for treatment, storage, and disposal by the SWD. Low-level waste and LLMW classified as Greater than Category 3 (Willis et al. 1991) will be accepted for storage, and any TRU solid waste PPT generates will be accepted for treatment and storage until the waste is shipped to the Waste Isolation Pilot Plant for final disposal. Acceptance of unique waste will be handled on a case by case basis. These quantities are expected to be minimal.

If future updates of waste volume forecasts exceed the baseline volumes presented herein, it will not be possible to ensure the proper solid waste TSD facilities will be available for management of PPT generated solid waste.

5.1.1 Solid Waste Requiring Treatment, Storage, and Disposal

Appendix A contains the baseline waste volume projections for solid waste generated by PPT requiring treatment, storage, and/or disposal. More detailed information regarding waste characteristics is also provided in Appendix A. Waste volumes are broken down by waste category as cited in (Willis et al. 1991) and are tabulated by the year of expected generation. These volumes and the accompanying detail in the waste volume forecast will be used for planning purposes by the SWD. Any significant changes to this projection, as determined by PPT personnel, or by consultation with the SWD, will be entered into this document through formal revision requiring an ECN.

5.1.2 Solid Waste Requiring Decontamination Services

PUREX Plant Transition will not generate any solid waste requiring decontamination services. Any significant changes to this projection, as determined by PPT personnel, or by consultation with the SWD, will be entered into this document through formal revision requiring an ECN.

6.0 REFERENCES

1. Willis, N. P., 1993 (as amended May 17, 1995), *Hanford Site Solid Waste Acceptance Criteria*, WHC-EP-0063-4, Westinghouse Hanford Company, Richland, Washington.
2. WHC, 1993, *DRAFT PUREX/UO3 Deactivation Project Management Plan*, WHC-SP-1011D, Westinghouse Hanford Company, Richland, Washington.
3. Carlson, A. B. et al., 1994, *Solid Waste Program Technical Baseline Description*, WHC-SD-WM-RPT-060, Revision 0, Westinghouse Hanford Company, Richland, Washington

APPENDIX A

PUREX PLANT TRANSITION WASTE VOLUME PROJECTIONS

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A-20.	Radiation Type* CH-TRUM in 55 Gallon Drums - 1996 to 1997	A-23

Changes to the PUREX Solid waste streams from the previous version of this document are based on the following assumptions:

- PUREX will not generate or ship solid waste to the Central Waste Complex/burial grounds after fiscal year 1997.
- PUREX will send all nonradioactive batteries, aerosol cans, and dioctyl phthalate (DOP) light ballasts to the 400 Area Central Consolidation Center instead of the 616 Dangerous Waste Storage Facility.
- The 4x4x8 ft burial box will still be available for packaging and shipping low level waste.
- Solid waste characteristics/constituents and container types described in this ICD will remain unchanged.

The contact and coordinator for PUREX (202-A) forecast information for all waste classes is:

J. R. (Jim) Hilliard 373-1782.

The Level III Approval Authority for forecast information is:

D. G. (Don Harlow) 373-1095.

Projected waste volume and characteristics are tabulated in the tables that follow. This Appendix ends with a copy of the FY-1995 Solid Waste Forecast Data Collection System Questionnaire questions and PUREX responses.

Table A-1. Projected Solid Waste External Volumes (ft³).

WASTE CLASS	ESTIMATE	1996 (PREVIOUS)	1996 (CURRENT)	1997 (PREVIOUS)	1997 (CURRENT)
CH-LLW-1	EST (FT ³)	4,000	6,886	4,000	13,884
	MIN %	50	50	50	50
	MAX %	200	200	200	200
CH-LLW-III	EST (FT ³)	9.	46	9.	46
	MIN %	2	0	2	0
	MAX %	0	300	0	300
		200		200	
CH-LLMW-1	EST (FT ³)	829	432	553	425
	MIN %	50	50	50	50
	MAX %	200	200	200	200
CH-LLMW-111	EST (FT ³)	9.	46	9.	46
	MIN %	2	0	2	0
	MAX %	0	300	0	300
		200		200	
CH-TRU	EST (FT ³)	46	340	110	0
	MIN %	50	50	50	-
	MAX %	200	200	300	-
CH-TRUM	EST (FT ³)	0	74	9.	0
	MIN %	-	50	2	-
	MAX %	-	200	100	-
				200	
HAZ (DANGEROUS)	EST (FT ³)	170	170	170	170
	MIN %	50	50	50	50
	MAX %	150	150	150	150

Table A-2. Container Type and Volume Percent.

WASTE CLASS	CONTAINER TYPES	
	1996	1997
CH-LLW-1	20% in 55 gallon drums 70% in 4x4x8 box 10% in no container (tumbleweed truck)	Same as 1996
CH-LLW-III	100% in 55 gallon drums	Same as 1996
CH-LLMW-I	100% in 55 gallon drums	Same as 1996
CH-LLMW-III	100% in 55 gallon drums	Same as 1996
CH-TRU	100% in 55 gallon drums	N/A - no waste
CH-TRUM	100% in 55 gallon drums	Same as 1996
HAZ (DANGEROUS)	72% in 55 gallon drums 15% in 30 gallon drums 12% in 8 gallon drums 1% in 4G fiberboard box	Same as 1996

Table A-3. Physical Waste Forms For Low Level Waste
and Transuranic for 55 Gallon Drums 1996 to 1998.

Container: 55 Gallon Drums	VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CLASS			Waste Forms Segregated?
	CH-LLW-I	CH-LLW-II	CH-TRU	
1996 to 1998				
Shielding steel lead concrete				
Solid Process Residues inorganic particulates inorganic absorbed liq/sludge organic absorbed liq/sludge				
Soils contaminated soils debris contaminated soils	5 -			yes -
Debris Waste metal inorganic non-metal combustible heterogeneous	5 5 84 -	33 33 34 -	50 - 50 -	no no no -
Special Waste lab packs/containerized liquids	1			yes
Other				
Total (0 or 100%)	100	100	100	

Table A-4. Physical Waste Forms For Low Level Waste and Transuranic
for 4x4x8 Foot Box With Skids 1996 to 1998.

Container: 55 Gallon Drums	VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CLASS			Waste Forms Segregated?
1996 to 1998	CH-LLW-I	CH-LLW-II	CH-TRU	
Shielding steel lead concrete				
Solid Process Residues inorganic particulates inorganic absorbed liq/sludge organic absorbed liq/sludge				
Soils contaminated soils debris contaminated soils				
Debris Waste metal inorganic non-metal combustible heterogeneous	60 10 30 -			no no no -
Special Waste lab packs/containerized liquids				
Other				
Total (0 or 100%)	100	0	0	

Table A-5. Physical Waste Forms for Low Level Waste and Transuranic
for 7x7x9 Compactor Truck (No Container) - 1996 to 1998.

Container: 55 Gallon Drums	VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CLASS			Waste Forms Segregated?
1996 to 1998	CH-LLW-I	CH-LLW-III	CH-TRU	
Shielding steel lead concrete				
Solid Process Residues inorganic particulates inorganic absorbed liq/sludge organic absorbed liq/sludge				
Soils contaminated soils debris contaminated soils				
Debris Waste metal inorganic non-metal combustible (tumbleweeds) heterogeneous	- - 100 -			- - yes -
Special Waste lab packs/containerized liquids				
Other				
Total (0 or 100%)	100	0	0	

Table A-6. Waste Forms and Hazardous Constituents
for CH-LLMW-I in 30 Gallon Drums.

Container: 30 Gallon Drums		VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CODE									Waste Forms Segregated?
VOL%	CH-LLMW-I	EPA/RCRA CODE						WAC CODE			
	1996 to 1998	IGN D001	CORR D002	REAC D003	MET*	MHG* D009 P085 P092 U151	ORG*	WT WP WC	PCB W001 <50 ppm	PCB W001 >50 ppm	
	Shielding steel lead concrete										
-	Solid Process Residues										
-	inorganic particulates	-			-		-	-			-
-	inorganic absorbed liq/sludge	-			-		-	-			-
-	salt waste	-			-		-	-			-
5	organic absorbed liq/sludge	100			100		100	100			no
5	Soils										
-	contaminated soils	100			100	100	100	100			no
-	debris contaminated soils	-			-	-	-	-			-
-	Debris Waste										
-	metal	-	-		-	-	-	-			-
2	inorganic non-metal	-	100		-	-	-	-			yes
10	combustible	100	-		100	100	100	100			no
5	heterogeneous	-	-		100	-	100	100			no
51	Special Waste										
-	lab packs/containerized liq	100	100		100	100	100	100			no
-	reactive metals	-	-		-	-	-	-			-
-	explosives/propellants	-	-		-	-	-	-			-
2	Inherently Hazardous Waste										
5	elemental mercury				-	100					yes
-	elemental lead				100	-					yes
-	beryllium waste				-	-					-
15	batteries				100	-					yes
	Unknown										
	Other										
100%											

Notes:

*MET = metals

*MHG = mercury

*ORG = organics

Table A-7. Waste Forms and Hazardous Constituents
for CH-LLMW-III in 55 Gallon Drums.

Container: 55 Gallon Drums		VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CODE									Waste Forms Segregated?
VOL%	CH-LLMW-III	EPA/RCRA CODE						WAC CODE			
	1996 to 1998	IGN D001	CORR D002	REAC D003	MET*	MHG* D008 P085 P092 U181	ORG*	WT WP YC	PCB W001 <50 ppm	PCB W001 >50 ppm	
	Shielding steel lead concrete										
	Solid Process Residues inorganic particulates inorganic absorbed liq/sludge salt waste organic absorbed liq/sludge										
	Soils contaminated soils debris contaminated soils										
	Debris Waste metal inorganic non-metal combustible heterogeneous										
	Special Waste lab packs/containerized liq reactive metals explosives/propellants										
- 100 - -	Inherently Hazardous Waste elemental mercury elemental lead beryllium waste batteries				- 100 - -						- yes - -
	Unknown Other										
100%											

Notes:

- *MET = metals
- *MHG = mercury
- *ORG = organics

Table A-8. Waste Forms and Hazardous Constituents
for CH-TRUM in 55 Gallon Drums.

Container: 55 Gallon Drums		VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CODE									Waste Forms Segregated?
VOL%	CH-TRUM	EPA/RCRA CODE						WAC CODE			
	1988 to 1998	IGN D001	CORR D002	REAC D003	MET*	MHG* D008 P085 P082 U181	ORG*	WT WP WC	PCB W001 <50 ppm	PCB W001 >50 ppm	
	Shielding steel lead concrete										
	Solid Process Residues inorganic particulates inorganic absorbed liq/sludge salt waste organic absorbed liq/sludge										
	Soils contaminated soils debris contaminated soils										
- - 100 -	Debris Waste metal inorganic non-metal combustible (lead gloves) heterogeneous				- - 100 -						- - yes -
	Special Waste lab packs/containerized liq reactive metals explosives/propellants										
	Inherently Hazardous Waste elemental mercury elemental lead beryllium waste batteries										
	Unknown Other										
100%											

Notes:

- *MET = metals
- *MHG = mercury
- *ORG = organics

Table A-9. Waste Forms and Hazardous Constituents for
Hazardous (Dangerous) Waste in 55 Gallon Drums.

Container: 55 Gallon Drums		VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CODE									Waste Forms Segregated?
VOL%	HAZARDOUS (DANGEROUS)	EPA/RCRA CODE						WAC CODE			
	1996 to 1998	IGN D001	CORR D002	REAC D003	MET*	MHG* D009 P065 P092 U161	ORG*	WT WP WC	PCB W001 <50 ppm	PCB W001 >50 ppm	
	Shielding steel lead concrete										
	Solid Process Residues inorganic particulates inorganic absorbed liq/sludge salt waste organic absorbed liq/sludge										
5 -	Soils contaminated soils debris contaminated soils	100 -			100 -	100 -	100 -	100 -			no -
8 - 10 -	Debris Waste metal inorganic non-metal combustible heterogeneous	- - 100 -	- - 100 -		- - 100 -	- - 100 -	100 - 100 -	- - 100 -			yes - no -
77 - -	Special Waste lab packs/containerized liq reactive metals explosives/propellants	100 - -	100 - -		100 - -	100 - -	100 - -	100 - -			no - -
	Inherently Hazardous Waste elemental mercury elemental lead beryllium waste batteries										
	Unknown Other										
100%											

Notes:

- *MET = metals
- *MHG = mercury
- *ORG = organics

Table A-10. Waste Forms and Hazardous Constituents for Hazardous (Dangerous) Waste in 30 Gallon Drums.

Container: 30 Gallon Drums		VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CODE									Wt % Forms Segregated?
VOL%	HAZARDOUS (DANGEROUS)	EPA/RCRA CODE						WAC CODE			
	1996 to 1998	IGN D00 1	COR R D00 2	REA D D00 3	MET *	MHG + D00 9 P085 P092 U15 1	ORG *	WT WP WC	PCB W00 1 <50 ppm	PCB W00 1 >50 ppm	
	Shielding steel lead concrete										
	Solid Process Residues inorganic particulates inorganic absorbed liq/sludge salt waste organic absorbed liq/sludge										
	Soils contaminated soils debris contaminated soils										
- - 10 -	Debris Waste metal inorganic non-metal combustible heterogeneous	- - 100 -			- - 100 -	- - 100 -	- - 100 -	- - 100 -			- - no -
85 - -	Special Waste lab packs/containerized liq reactive metals explosives/propellants	100 - -	100 - -		100 - -	100 - -	100 - -	100 - -			no - -
- - 5	Inherently Hazardous Waste elemental mercury elemental lead beryllium waste batteries		- - 100								- - - yes
	Unknown Other										
100%											

Notes:

- *MET = metals
- *MHG = mercury
- *ORG = organics

Table A-11. Waste Forms and Hazardous Constituents for Hazardous (Dangerous) Waste in 8 Gallon Drums.

Container: 8 Gallon Drums		VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CODE									Waste Forms Segregated?
VOL%	HAZARDOUS (DANGEROUS)	EPA/RCRA CODE						WAC CODE			
	1996 to 1998	IGN D001	CORR D002	REAC D003	MET*	MHG* D009 P085 P092 U181	ORG*	WT WP WC	PCB W001 <50 ppm	PCB W001 >50 ppm	
	Shielding steel lead concrete										
	Solid Process Residues inorganic particulates inorganic absorbed liq/sludge salt waste organic absorbed liq/sludge										
	Soils contaminated soils debris contaminated soils										
20 - - -	Debris Waste metal inorganic non-metal combustible heterogeneous									100 - - -	yes - - -
73 - -	Special Waste lab packs/containerized liq reactive metals explosives/propellants	100 - -	100 - -		100 - -	100 - -	100 - -	100 - -			no - -
2 - 5	Inherently Hazardous Waste elemental mercury elemental lead beryllium waste batteries		- - 100			100 - -					yes - yes
	Unknown Other										
100%											

Notes:

- *MET = metals
- *MHG = mercury
- *ORG = organics

Table A-12. Waste Forms and Hazardous Constituents for Hazardous (Dangerous) Waste in DOT 4G Boxes.

Container: DOT 4G Boxes		VOLUME % OF EACH WASTE FORM PRESENT FOR EACH WASTE CODE									Waste Forms Sequestered?
VOL %	HAZARDOUS (DANGEROUS)	EPA/RCRA CODE						WAC CODE			
	1996 to 1998	IGN D001	CORR D002	REAC D003	MET*	MHG* D008 P055 P092 U151	ORG*	WT WP WC	PCB W001 <50 ppm	PCB W001 >50 ppm	
	Shielding steel lead concrete										
	Solid Process Residues inorganic particulates inorganic absorbed liq/sludge salt waste organic absorbed liq/sludge										
	Soils contaminated soils debris contaminated soils										
	Debris Waste metal inorganic non-metal combustible heterogeneous										
88 - -	Special Waste lab packs/containerized liq reactive metals explosives/propellants	100 - -	100 - -		100 - -	100 - -	100 - -	100 - -			no - -
2 - 10	Inherently Hazardous Waste elemental mercury elemental lead beryllium waste batteries		- - 100			100 - -					yes - yes
	Unknown Other										
100%											

Notes:

*MET = metals

*MHG = mercury

*ORG = organics

Table A-13. Radiation Type* CH-LLW-I
in 55 Gallon Drums - 1996 to 1998.

A SEPARATE TABLE 5 MUST BE COMPLETED FOR EACH APPLICABLE WASTE CLASS AND CONTAINER TYPE													
RADIATION TYPE: Please indicate the Concentration for each Waste Form													
WASTE FORMS	C-14	Ra-226	Tc-99	Se-79	Pu-238, -239, -240, -241	Np-237	U-238	I-129	H-3	Am-241, -243	Cl-36	Ca-137	Sr-90
	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³
SHIELDING													
CONCRETE													
LEAD													
STEEL													
INORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
PAINT WASTE													
SALT WASTE													
ORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
ORGANIC ABSORBENTS													
SOIL/GRAVEL													
SOIL/GRAVEL	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
DEBRIS WASTES													
INORGANIC													
METAL	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
INORGANIC NON-METAL	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
ORGANIC	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
PLASTIC/RUBBER													
HETEROGENEOUS													
LAB PACKS													
LAB PACKS	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
SPECIAL WASTE													
ELEMENTAL MERCURY													
ELEMENTAL LEAD													
BERYLLIUM DUST													
BATTERIES													
REACTIVE METALS													
EXPLOSIVES/PROPELLANT													
AEROSOLS/COMPRES. GAS													

**Table A-14. Radiation
Type* CH-LLW-I
in 4x4x8 ft Boxes With Skids - 1996 to 1998.**

A SEPARATE TABLE 5 MUST BE COMPLETED FOR EACH APPLICABLE WASTE CLASS AND CONTAINER TYPE													
RADIATION TYPE: Please indicate the Concentration for each Waste Form													
WASTE FORMS	C-14	Ra-226	Tc-99	Se-79	Pu-238, -239, -240, -241	Np-237	U-238	I-129	H-3	Am-241, -243	Cl-36	Cs-137	Sr-90
	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³
SHIELDING													
CONCRETE													
LEAD													
STEEL													
INORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
PAINT WASTE													
SALT WASTE													
ORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
ORGANIC ABSORBENTS													
SOIL/GRAVEL													
SOIL/GRAVEL													
DEBRIS WASTES													
INORGANIC													
METAL	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
INORGANIC NON-METAL	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
ORGANIC	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
PLASTIC/RUBBER													
HETEROGENEOUS													
LAB PACKS													
LAB PACKS													
SPECIAL WASTE													
ELEMENTAL MERCURY													
ELEMENTAL LEAD													
BERYLLIUM DUST													
BATTERIES													
REACTIVE METALS													
EXPLOSIVES/PROPELLANT													
AEROSOLS/COMPRES. GAS													
METHOD OF CALCULATION _____													

Note:

*The radionuclides noted on this table are those called out in PUREX LLW and LLMW shipping documents. ⁷⁹Se, ¹⁰⁶Ru/Rh, ¹⁴⁴Ce/Pr, ¹⁴⁷Pm, ²⁴²Cm, ²³⁸U, ⁹⁴Nb, and ⁹⁹Tc are present in PUREX LLW and LLMW, but are not called out on shipping documentation because they represent less than 1% of WHC-EP-0063 Category 1 activity limit for each radionuclide.

**Table A-15. Radiation Type* CH-LLW-I in 7x7x9 Compactor
Truck (No Container) - 1996 to 1998.**

A SEPARATE TABLE 5 MUST BE COMPLETED FOR EACH APPLICABLE WASTE CLASS AND CONTAINER TYPE													
RADIATION TYPE: Please indicate the Concentration for each Waste Form													
WASTE FORMS	C-14	Ra-226	Tc-99	Se-79	Pu-238, -239, -240, -241	Np-237	U-238	I-129	H-3	Am-241, -243	Cl-36	Cs-137	Sr-90
	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³
SHIELDING													
CONCRETE													
LEAD													
STEEL													
INORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
PAINT WASTE													
SALT WASTE													
ORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
ORGANIC ABSORBENTS													
SOIL/GRAVEL													
SOIL/GRAVEL													
DEBRIS WASTES													
INORGANIC													
METAL													
INORGANIC NON-METAL													
ORGANIC	3.37 ⁻¹⁵	-	-	-	5.06 ⁻⁷	-	-	-	9.95 ⁻⁴	-	-	2.53 ⁻⁶	2.18 ⁻⁴
PLASTIC/RUBBER													
HETEROGENEOUS													
LAB PACKS													
LAB PACKS													
SPECIAL WASTE													
ELEMENTAL MERCURY													
ELEMENTAL LEAD													
BERYLLIUM DUST													
BATTERIES													
REACTIVE METALS													
EXPLOSIVES/PROPELLANT													
AEROSOLS/COMPRES. GAS													
METHOD OF CALCULATION _____													

Note:

*The radionuclides noted on this table are those called out in PUREX LLW and LLMW shipping documents. ⁷⁹Se, ¹⁰⁶Ru/Rh, ¹⁴⁴Ce/Pr, ¹⁴⁷Pm, ²⁴²Cm, ²³⁸U, ⁹⁴Nb, and ⁹⁹Tc are present in PUREX LLW and LLMW, but are not called out on shipping documentation because they represent less than 1% of WHC-EP-0063 Category 1 activity limit for each radionuclide.

Table A-16. Radiation
Type* CH-LLW-III
in 55 Gallon Drums - 1996 to 1998.

A SEPARATE TABLE 5 MUST BE COMPLETED FOR EACH APPLICABLE WASTE CLASS AND CONTAINER TYPE													
RADIATION TYPE: Please indicate the Concentration for each Waste Form													
WASTE FORMS	C-14	Ra-226	Te-99	Se-79	Pu-238, -239, -240, -241	Np-237	U-238	I-129	H-3	Am-241, -243	Cl-36	Ce-137	Sr-90
	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³
SHIELDING													
CONCRETE													
LEAD													
STEEL													
INORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
PAINT WASTE													
SALT WASTE													
ORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
ORGANIC ABSORBENTS													
SOIL/GRAVEL													
SOIL/GRAVEL													
DEBRIS WASTES													
INORGANIC													
METAL	6.95 ^a	-	-	-	0.21	-	-	-	0.02	-	-	5.15	4.45
INORGANIC NON-METAL	6.95 ^a	-	-	-	0.21	-	-	-	0.02	-	-	5.15	4.45
ORGANIC	6.95 ^a	-	-	-	0.21	-	-	-	0.02	-	-	5.15	4.45
PLASTIC/RUBBER													
HETEROGENEOUS													
LAB PACKS													
LAB PACKS													
SPECIAL WASTE													
ELEMENTAL MERCURY													
ELEMENTAL LEAD													
BERYLLIUM DUST													
BATTERIES													
REACTIVE METALS													
EXPLOSIVES/PROPELLANT													
AEROSOLS/COMPRES. GAS													
METHOD OF CALCULATION _____													

Note:

*The radionuclides noted on this table are those called out in PUREX LLW and LLMW shipping documents. ⁷⁹Se, ¹⁰⁶Ru/Rh, ¹⁴⁴Ce/Pr, ¹⁴⁷Pm, ²⁴²Cm, ²³⁸U, ⁹⁴Nb, and ⁹⁹Tc are present in PUREX LLW and LLMW, but are not called out on shipping documentation because they represent less than 1% of WHC-EP-0063 Category 1 activity limit for each radionuclide.

Table A-17. Radiation Type* CH-LLMW-I
in 55 Gallon Drums - 1996 to 1998.

A SEPARATE TABLE 5 MUST BE COMPLETED FOR EACH APPLICABLE WASTE CLASS AND CONTAINER TYPE													
RADIATION TYPE: Please indicate the Concentration for each Waste Form													
WASTE FORMS	C-14	Ra-226	Tc-99	Se-79	Pu-238, -239, -240, -241	Np-237	U-238	I-129	H-3	Am-241, -243	Cl-36	Cs-137	Sr-90
	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³
SHIELDING													
CONCRETE													
LEAD													
STEEL													
INORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
PAINT WASTE													
SALT WASTE													
ORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
ORGANIC ABSORBENTS													
SOIL/GRAVEL													
SOIL/GRAVEL	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
DEBRIS WASTES													
INORGANIC													
METAL													
INORGANIC NON-METAL	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
ORGANIC	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
PLASTIC/RUBBER													
HETEROGENEOUS	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
LAB PACKS													
LAB PACKS	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
SPECIAL WASTE													
ELEMENTAL MERCURY	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
ELEMENTAL LEAD	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
BERYLLIUM DUST													
BATTERIES	3.37 ⁻¹³	-	-	-	5.06 ⁻⁵	-	-	-	9.95 ⁻⁷	-	-	2.53 ⁻⁴	2.18 ⁻⁴
REACTIVE METALS													
EXPLOSIVES/PROPELLANT													
AEROSOLS/COMPRES. GAS													
METHOD OF CALCULATION _____													

Note:

*The radionuclides noted on this table are those called out in PUREX LLW and LLMW shipping documents. ⁷⁹Se, ¹⁰⁶Ru/Rh, ¹⁴⁴Ce/Pr, ¹⁴⁷Pm, ²⁴²Cm, ²³⁸U, ⁹⁴Nb, and ⁹⁹Tc are present in PUREX LLW and LLMW, but are not called out on shipping documentation because they represent less than 1% of WHC-EP-0063 Category 1 activity limit for each radionuclide.

Table A-18. Radiation Type* CH-LLMW-III
in 55 Gallon Drums - 1996 to 1998.

A SEPARATE TABLE 5 MUST BE COMPLETED FOR EACH APPLICABLE WASTE CLASS AND CONTAINER TYPE													
RADIATION TYPE: Please indicate the Concentration for each Waste Form													
WASTE FORMS	C-14	Ra-226	Tc-99	Se-79	Pu-238, -239, -240, -241	Np-237	U-238	I-129	H-3	Am-241, -243	Cl-36	Cs-137	Sr-90
	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³
SHIELDING													
CONCRETE													
LEAD													
STEEL													
INORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
PAINT WASTE													
SALT WASTE													
ORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
ORGANIC ABSORBENTS													
SOIL/GRAVEL													
SOIL/GRAVEL													
DEBRIS WASTES													
INORGANIC													
METAL													
INORGANIC NON-METAL													
ORGANIC													
PLASTIC/RUBBER													
HETEROGENEOUS													
LAB PACKS													
LAB PACKS													
SPECIAL WASTE													
ELEMENTAL MERCURY													
ELEMENTAL LEAD	6.95 ^a	-	-	-	0.21	-	-	-	0.02	-	-	5.15	4.45
BERYLLIUM DUST													
BATTERIES													
REACTIVE METALS													
EXPLOSIVES/PROPELLANT													
AEROSOLS/COMPRES. GAS													
METHOD OF CALCULATION _____													

Note:

*The radionuclides noted on this table are those called out in PUREX LLW and LLMW shipping documents. ⁷⁹Se, ¹⁰⁶Ru/Rh, ¹⁴⁴Ce/Pr, ¹⁴⁷Pm, ²⁴²Cm, ²³⁸U, ⁹⁴Nb, and ⁹⁹Tc are present in PUREX LLW and LLMW, but are not called out on shipping documentation because they represent less than 1% of WHC-EP-0063 Category 1 activity limit for each radionuclide.

Table A-19. Radiation Type* CH-TRU
in 55 Gallon Drums - 1996 to 1997.

A SEPARATE TABLE 5 MUST BE COMPLETED FOR EACH APPLICABLE WASTE CLASS AND CONTAINER TYPE													
RADIATION TYPE: Please indicate the Concentration for each Waste Form													
WASTE FORMS	C-14	Ra-226	Tc-99	Se-79	Pu-238, -239, -240, -241	Np-237	U-238	I-129	H-3	Am-241, -243	Cl-36	Ca-137	Sr-90
	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³
SHIELDING													
CONCRETE													
LEAD													
STEEL													
INORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
PAINT WASTE													
SALT WASTE													
ORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
ORGANIC ABSORBENTS													
SOIL/GRAVEL													
SOIL/GRAVEL													
DEBRIS WASTES													
INORGANIC													
METAL	-	-	-	-	316.45	-	-	-	-	0.05	-	-	-
INORGANIC NON-METAL													
ORGANIC	-	-	-	-	316.45	-	-	-	-	0.05	-	-	-
PLASTIC/RUBBER													
HETEROGENEOUS													
LAB PACKS													
LAB PACKS													
SPECIAL WASTE													
ELEMENTAL MERCURY													
ELEMENTAL LEAD													
BERYLLIUM DUST													
BATTERIES													
REACTIVE METALS													
EXPLOSIVES/PROPELLANT													
AEROSOLS/COMPRES. GAS													
METHOD OF CALCULATION _____													

Note:

*The radionuclides noted on this table are those called out in PUREX LLW and LLMW shipping documents. ⁷⁹Se, ¹⁰⁶Ru/Rh, ¹⁴⁴Ce/Pr, ¹⁴⁷Pm, ²⁴²Cm, ²³⁸U, ⁹⁴Nb, and ⁹⁹Tc are present in PUREX LLW and LLMW, but are not called out on shipping documentation because they represent less than 1% of WHC-EP-0063 Category 1 activity limit for each radionuclide.

**Table A-20. Radiation Type* CH-TRUM
in 55 Gallon Drums - 1996 to 1997.**

A SEPARATE TABLE 5 MUST BE COMPLETED FOR EACH APPLICABLE WASTE CLASS AND CONTAINER TYPE													
RADIATION TYPE: Please indicate the Concentration for each Waste Form													
WASTE FORMS	C-14	Ra-226	Tc-99	Se-79	Pu-238, -239, -240, -241	Np-237	U-238	I-129	H-3	Am-241, -243	Cl-36	Ca-137	Sr-90
	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³	CONC Ci/m ³
SHIELDING													
CONCRETE													
LEAD													
STEEL													
INORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
PAINT WASTE													
SALT WASTE													
ORGANIC HOMOGENEOUS SOLIDS													
PARTICULATES													
ABSORBED LIQ/SLUDGES													
ORGANIC ABSORBENTS													
SOIL/GRAVEL													
SOIL/GRAVEL													
DEBRIS WASTES													
INORGANIC													
METAL													
INORGANIC NON-METAL													
ORGANIC (lead gloves)					179.53					0.36			
PLASTIC/RUBBER													
HETEROGENEOUS													
LAB PACKS													
LAB PACKS													
SPECIAL WASTE													
ELEMENTAL MERCURY													
ELEMENTAL LEAD													
BERYLLIUM DUST													
BATTERIES													
REACTIVE METALS													
EXPLOSIVES/PROPELLANT													
AEROSOLS/COMPRES. GAS													

METHOD OF CALCULATION _____

Note:

*The radionuclides noted on this table are those called out in PUREX LLW and LLMW shipping documents. ⁷⁹Se, ¹⁰⁶Ru/Rh, ¹⁴⁴Ce/Pr, ¹⁴⁷Pm, ²⁴²Cm, ²³⁸U, ⁹⁴Nb, and ⁹⁹Tc are present in PUREX LLW and LLMW, but are not called out on shipping documentation because they represent less than 1% of WHC-EP-0063 Category 1 activity limit for each radionuclide.

**FY-1995 SOLID WASTE FORECAST DATA COLLECTION SYSTEM
QUESTIONNAIRE and PUREX RESPONSES**

1. Please describe generated waste classes and explain how they will be generated.

Response: The following is a description of the waste classes generated at PUREX and how they will be generated.

CH-LLW-I This waste is primarily radioactive paper, plastic, metal, rubber, cloth, failed equipment, tumbleweeds etc. The waste is generated due to zone reduction, routine operations, maintenance activities, and housekeeping associated with deactivation efforts. PUREX will compact as much of this waste as possible at the PUREX Waste Segregation and Compaction Facility before shipment to Solid Waste.

CH-LLW-III This waste is not commonly generated at PUREX, but the potential does exist with the deactivation of the facility. Therefore, a small amount has been forecast as a precaution.

CH-LLMW-I This waste is typically similar in form to the PUREX CH-LLW-I that has been contaminated with a hazardous chemical product, or radioactive chemicals/products which have expired shelf lives, or are generated due to clean up or maintenance activities.

CH-LLMW-III This waste is not commonly generated at PUREX, but the potential does exist with the deactivation of the facility. Therefore, a small amount has been forecast as a precaution.

CH-TRU This waste will be generated at PUREX from N-Cell deactivation efforts. It is predominantly metal and plastic contaminated with plutonium and trace amounts of americium.

CH-TRUM This waste is predominantly lead-lined gloves contaminated with plutonium.

Hazardous (Dangerous) This waste is generated from operations or maintenance activities outside of radiation areas. The dangerous waste generated at PUREX usually consists of chemicals or products that have expired shelf lives or are unusable for some other reason, or are inert materials that have come in contact with a hazardous chemical.

2. Please provide a description of your HELD waste.

Response: PUREX does not anticipate HELD waste.

3. Have your waste volumes changed from your previous forecast?

Response: Yes, the waste volumes for CH-LLW-I, CH-LLW-III, CH-LLMW-I, CH-LLMW-III, CH-TRU, AND CH-TRUM have been altered. Refer to internal memo 17730-95-022, dated June 28, 1995, and cc:Mail message from J. R. Hilliard to O. J. Valero, A. O. Vance, and K. L. Hladek for further explanation of waste volume changes. [Changes are shown in Table A-1 of this Appendix.]

4. Are there any current or planned activities that are not forecasted?

Response: No.

5. Will waste be separated into like waste forms prior to shipping?

Response: PUREX currently compacts all compactable (paper, plastic, rubber, etc.) CH-LLW-I as practical. This somewhat separates the compactable and non-compactable LLW generated at PUREX. Other waste classes are separated if possible. For example, if PUREX generates a LLMW container with solid paint waste, oily rags will not be added just because there is room in the container. Waste classes will never be mixed with each other.

6. Will you generate hazardous or mixed waste? If yes, will you place several hazardous constituents in one container or will you segregate the constituents prior to shipping?

Response: Yes, PUREX will generate mixed and hazardous wastes. These wastes are generally segregated into similar hazardous constituents and physical forms prior to shipping. However, this is no guarantee the waste will have only one waste code.

7. Please describe your quarterly expected shipping schedule for each applicable waste class during FY 1996.

Response: The shipping schedule for CH-LLW-I is expected to be 30% first quarter, 20% second quarter, 25% third and fourth quarters of FY 96. All other waste classes are expected to be shipped equally throughout the year.

8. Discuss the assumptions that were used to prepare this forecast.

Response: Assumptions used to prepare this forecast are as follow:

- PUREX will not generate, nor ship solid waste to the Central Waste Complex/burial grounds after fiscal year 1997.
- PUREX waste volumes will increase with deactivation efforts, similar to the UO3 Plant waste volumes generated from deactivation efforts.
- PUREX will send all non-radioactive batteries, aerosol cans, and dioctyl phthalate (DOP) light ballasts to the 400 Area Central Consolidation Center instead of the 616 Hazardous Waste Storage Facility.
- The 4ft x 4ft x 8ft plywood burial box will still be available for packaging and shipping of CH-LLW-I.
- Solid waste characteristics/constituents and container types currently described in the PUREX/Solid Waste ICD will remain unchanged.

9. Please list any Tri-Party Agreement (TPA) milestones that affect your facility/program.

Response: Tri-Party Agreement milestones are based on facility deactivation. This forecast was written based on these milestones.

10. What assumptions were used in estimating the minimum and maximum waste percentages identified in Table [A-] 1?

Response: Minimum is based on uncertainty of waste volumes generated from the PUREX deactivation efforts and the exact schedule in which waste will actually be generated. Assumed the PUREX LLW compactor remains operational.

Maximum is based on uncertainty of actual waste volumes that could be generated due to deactivation activities and zone reduction. Assumed the LLW compactor is not operational.

11. Please provide a description of how the radionuclides were determined.

Response: Radionuclides were determined based on process knowledge, ORIGEN II tables, and sample analyses.

12. Indicate confidence levels for the following waste characterization data: physical waste forms, hazardous constituents, and radiation type. For example, the physical waste forms are based on historical characterization information.

Response:	Data	Confidence Levels
	Physical Waste Forms: Based on past practice	Medium
	Hazardous Constituents: Based on past practice	Medium
	Radiation Type: Based on process knowledge and sample analysis	High

13. What percentage of the waste forecasted is existing waste and what percentage is future generated waste? Of your existing and future waste, how confident are you (high, low, medium) in the volumes and shipping schedule?

Response: This forecast is based on future generated wastes since PUREX does not hold waste.

Confidence level for future generated waste volumes and shipping schedule is medium based on past practice.

14. Indicate whether your forecast includes: operational, terminal clean-out and stabilization

(TC&S), and/or D&D wastes.

Response: This forecast is based on wastes generated from the deactivation of the PUREX Facility only.

15. If you have not included TC&S and D&D waste, will this waste potentially be managed at Hanford? If yes, please estimate expected volumes.

Response: Waste volumes have not been determined for future D&D wastes associated with the PUREX Facility.

16. When will your facility transition into a terminal clean-out and stabilization mission?

Response: PUREX is currently in the process of deactivation (clean-out and stabilization).

17. When is your facility expected to be added to the surplus facilities list?

Response: PUREX will be deactivated in FY 1997. The facility is expected to be added to the Surplus Facility list in FY 1998.

18. Will waste be generated between terminal clean-out/stabilization and D&D? If so, please describe the waste and identify the responsible organization.

Response: No waste will be generated between the end of deactivation and D&D.

19. What document titles and numbers can be provided that give insight into waste generation at your facility?

Response:

- WHC-SP-1011, PUREX/UO₃ Deactivation Project Management Plan
- WHC-SD-PLN-009, PUREX Solid Low-Level Waste Certification Plan
- WHC-SD-CP-PLN-028, PUREX Low-Level Waste Radionuclide Characterization

20. Does your facility have an approved Site Treatment Plan (STP) or a proposed Site Treatment Plan (PSTP) in progress? [Note: question for offsite generators only.]

Response: Not Applicable.