

## AR TARGET SHEET

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Waste Land Disposal Restrictions  
Report Volumes 1 and 2

# Calendar Year 2001 Hanford Site Mixed Waste Land Disposal Restrictions Report Volumes 1 and 2

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

Project Hanford Management Contractor for the  
U.S. Department of Energy under Contract DE-AC06-96RL13200



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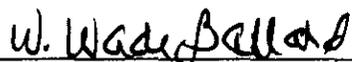
## PRIMARY DOCUMENT STATEMENT

### CALENDAR YEAR 2001 HANFORD SITE MIXED WASTE LAND DISPOSAL RESTRICTIONS REPORT

Approval of the U.S. Department of Energy's annual land disposal restriction report as a *Hanford Federal Facility Agreement and Consent Order* primary document shall be by written approval of U.S. Department of Energy and Washington State Department of Ecology Interagency Management Integration Team representatives.

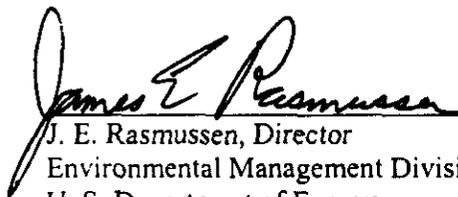
This document has been prepared, submitted, revised, and approved as a primary document in response to the requirements of the *Hanford Federal Facility Agreement and Consent Order* milestone series M-26-01 and related *Resource Conservation and Recovery Act of 1976* land disposal restrictions and *Hanford Federal Facility Agreement and Consent Order* requirements. As such, this document serves as a binding and enforceable document under the *Hanford Federal Facility Agreement and Consent Order*.

Approved and issued this \_\_\_\_\_ day of \_\_\_\_\_ 2002.



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## ACRONYMS

AEA	<i>Atomic Energy Act</i>
AOC	area of contamination
ATG	Allied Technology Group, Inc.
BDAT	best demonstrated available technology
BHI	Bechtel Hanford, Inc.
CDI	Canyon Disposition Initiative
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CFR	Code of Federal Regulations
CH	contact handled
CHG	CH2M HILL Hanford Group, Inc.
CWC	Central Waste Complex
CSB	Canister Storage Building
C&T	characterization & treatment
CY	calendar year
D&D	decontamination and decommissioning
DCRT	double-contained receiver tank
DOE	U.S. Department of Energy
DOE-ORP	U.S. Department of Energy, Office of River Protection
DOE-RL	U.S. Department of Energy, Richland Operations Office
DST	double-shell tank
DU	depleted uranium
Ecology	Washington State Department of Ecology
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
ETF	200 Area Effluent Treatment Facility
FD	final determination
FFCA	<i>Federal Facilities Compliance Act</i>
FFTF	Fast Flux Test Facility
FH	Fluor Hanford
FY	fiscal year
HEPA	high-efficiency particulate air (filter)
HLV	high-level vault
HLW	high-level waste
HSTF	Hexone Storage and Treatment Facility
HVAC	heating, ventilation, and air conditioning
HWTU	325 Hazardous Waste Treatment Unit
ILAW	immobilized low-activity waste
ID	identification code
IMUST	inactive miscellaneous underground storage tank
INEEL	Idaho National Engineering and Environmental Laboratory

IPMP	integrated program management plan
ISS	interim safe storage
LAW	low-activity waste
LCAM	life-cycle asset management
LDR	land disposal restrictions
LEF	Liquid Effluent Facility
LERF	Liquid Effluent Retention Facility
LLBG	Low-level Burial Grounds
LLCE	long-length contaminated equipment
LLMW	low-level mixed waste
LLW	low-level waste
LSDS	location-specific data sheet
MW	mixed waste
MLLW	mixed low-level waste
NOD	notice of deficiency
O/C	organic/carbonaceous
ORP	Office of River Protection
PCB	polychlorinated biphenyl
PFP	Plutonium Finishing Plant
PMWT	potential mixed waste table
PNNL	Pacific Northwest National Laboratory
PUREX	plutonium-uranium extraction (process)
PSTF	Purgewater Storage and Treatment Facility
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
REC	radiochemical engineering cell
REDOX	reduction-oxidation (process)
RH	remote handled
RI/FS	remedial investigation/feasibility study
RLWS	Radioactive Liquid Waste System
RPP	River Protection Project
ROD	record of decision
S&M	surveillance & maintenance
SCW	special-case waste
SNF	Spent Nuclear Fuel
SPR EIS	Surplus Reactors Environmental Impact Statement
SST	single-shell tank
STP	site treatment plan
STR	storage report
SWIFT	Solid Waste Integrated Forecast Technical (Report)
TCLP	toxicity characteristic leaching procedure
TBD	to be determined
TGDS	Treatability Group Data Sheet
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
TRU	transuranic (waste)

TRUM	transuranic mixed (waste)
TRUSAF	224-T Transuranic Waste Storage and Assay Facility
TSCA	<i>Toxic Substances Control Act of 1976</i>
TSD	treatment, storage, and/or disposal
WAC	<i>Washington Administrative Code</i>
WESF	Waste Encapsulation and Storage Facility
WIDS	Waste Information Data System
WIPP	Waste Isolation Pilot Plant
WMP	Waste Management Project
WRAP	Waste Receiving and Processing Facility
WSCF	Waste Sampling and Characterization Facility
WSRd	waste specification record
WSS	waste specification system

## METRIC CONVERSION CHART

Into metric units

Out of metric units

If you know	Multiply by	To get	If you know	Multiply by	To get
<b>Length</b>			<b>Length</b>		
inches	25.40	millimeters	millimeters	0.03937	inches
inches	2.54	centimeters	centimeters	0.393701	inches
feet	0.3048	meters	meters	3.28084	feet
yards	0.9144	meters	meters	1.0936	yards
miles (statute)	1.60934	kilometers	kilometers	0.62137	miles (statute)
<b>Area</b>			<b>Area</b>		
square inches	6.4516	square centimeters	square centimeters	0.155	square inches
square feet	0.09290304	square meters	square meters	10.7639	square feet
square yards	0.8361274	square meters	square meters	1.19599	square yards
square miles	2.59	square kilometers	square kilometers	0.386102	square miles
acres	0.404687	hectares	hectares	2.47104	acres
<b>Mass (weight)</b>			<b>Mass (weight)</b>		
ounces (avoir)	28.34952	grams	grams	0.035274	ounces (avoir)
pounds	0.45359237	kilograms	kilograms	2.204623	pounds (avoir)
tons (short)	0.9071847	tons (metric)	tons (metric)	1.1023	tons (short)
<b>Volume</b>			<b>Volume</b>		
ounces (U.S., liquid)	29.57353	milliliters	milliliters	0.033814	ounces (U.S., liquid)
quarts (U.S., liquid)	0.9463529	liters	liters	1.0567	quarts (U.S., liquid)
gallons (U.S., liquid)	3.7854	liters	liters	0.26417	gallons (U.S., liquid)
cubic feet	0.02831685	cubic meters	cubic meters	35.3147	cubic feet
cubic yards	0.7645549	cubic meters	cubic meters	1.308	cubic yards
<b>Temperature</b>			<b>Temperature</b>		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit
<b>Energy</b>			<b>Energy</b>		
kilowatt hour	3,412	British thermal unit	British thermal unit	0.000293	kilowatt hour
kilowatt	0.94782	British thermal unit per second	British thermal unit per second	1.055	kilowatt
<b>Force/Pressure</b>			<b>Force/Pressure</b>		
pounds (force) per square inch	6.894757	kilopascals	kilopascals	0.14504	pounds per square inch

06/2001

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE., Third Ed., 1990, Professional Publications, Inc., Belmont, California.

# CALENDAR YEAR 2001 HANFORD SITE MIXED WASTE LAND DISPOSAL RESTRICTIONS STORAGE REPORT VOLUME 1, STORAGE REPORT

## 1.0 INTRODUCTION

This volume presents information concerning the storage and minimization of mixed waste and the potential sources for the generation of additional mixed waste. This information, presented in accordance with *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 2001) Milestone M-26-01L, is Volume 1 of a two-volume report on the status of Hanford Site land-disposal-restricted mixed waste, other mixed waste, and other waste that the U.S. Department of Energy (DOE), Washington State Department of Ecology (Ecology), and U.S. Environmental Protection Agency (EPA) have agreed to include in this report. This volume contains the approval page for both volumes and includes assumptions, accomplishments, and other information pertaining to waste characterization and treatment, which are addressed in Volume 2. Appendix A lists the land disposal restrictions (LDR) reporting requirements and explains where the requirements are addressed in this report. The reporting period for this document is from January 1, 2001, to December 31, 2001.

## 1.1 SOURCES AND ORGANIZATION OF WASTE STORAGE DATA

This report presents information on waste streams that are reported either as a matter of law or as a result of discussions among DOE, Ecology, and EPA. Waste streams reported as a matter of law include mixed waste in storage subject to the storage prohibition of Title 40 *Code of Federal Regulations* (CFR) Part 268.50. *Washington Administrative Code* (WAC) 173-303-140, "Dangerous Waste Regulations", incorporates the federal rule by reference. The EPA guidance (EPA 1990) indicates which mixed waste is subject to the storage prohibition. Other waste streams, both mixed and non-mixed, are being reported under the Tri-Party Agreement Milestone M-26-01 as a result of discussions held among DOE, Ecology, and EPA.

Mixed waste is not subject to the storage prohibition until the waste is generated and managed in a 90-day accumulation area or treatment, storage, and/or disposal (TSD) unit, or until the waste leaves a *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) of 1980 area of contamination. Although mixed waste managed in a 90-day accumulation area is not considered stored, the EPA has indicated that the storage prohibition clock begins when mixed waste is managed in the 90-day accumulation area. Mixed waste is reported here as forecast waste when the waste meets either of the following criteria.

- The waste has not been generated and therefore is not subject to the storage prohibition.
- The waste is managed in either a satellite accumulation area or a 90-day accumulation area.

This storage report provides aggregate waste stream data based on a set of waste treatability groups and also provides the detailed data on location-specific sources of waste. The waste from these sources is included in the appropriate treatability groups. More information concerning treatability groups can be found in Volume 2.

Treatability group data sheets describe the characteristics that the location-specific waste sources share. (Figure B-1) The data sheets also provide total waste volume data from the associated location-specific data sheets for both the currently stored inventory and the waste projected to be generated. The location-

specific data sheets describe how, where, and how much waste is stored and present information concerning disposition of the waste.

Appendix B provides location-specific data sheets for each waste stream, sorted by treatability group. Each location-specific data sheet was completed by staff knowledgeable of the waste stream. Mixed waste currently in satellite accumulation areas and in 90-day accumulation areas is not considered current stored inventory, but is included as forecast waste generation. The content and format of waste stream data sheets and the process for collecting waste storage data are discussed in the following paragraphs.

Table 1-1 lists the names of the treatability groups used in this report and the major sources of waste in each group.

Three treatability groups have been added to this year's report: 241-CX Tanks, Hexone Storage and Treatment Facility, and MLLW-08. Detail on these new groups is found in Table 1-1, Table 2-1, Table 2-2, as well as the treatability group data sheets in Appendix B.

Other materials, items, etc., currently on the Hanford Site that might be designated as mixed waste in the future, are described in Section 2.3 and listed in Appendix C and are referred to as potential mixed waste.

Table 1-1. Treatability Groups.

Identifier	Name	Major Waste Sources
221-T RCRA Tank System	T Plant Complex Waste	Waste resulting from decontamination activities at the 221-T and 2706-T Buildings; some additional waste from other Hanford Site locations.
222-S T8 RH MLLW	222-S Laboratory Complex T8 Tunnel Waste	Waste piping removed from aqueous waste service formerly used to transfer waste from the laboratory to the waste tank system.
241-CX Tanks	241-CX Tanks	Residual tank waste resulting from REDOX, PUREX, and Semiworks processes.
324 Building Radiochemical Engineering Cell Waste	324 Building Radiochemical Engineering Cells	High-activity radioactive waste containing toxic heavy metals generated during research and development activities since the mid-1960's and the processing of building high-level vault waste.
618-4 DU/Oil Drums	Depleted Uranium in Oil from 618-4 Burial Ground	Drums of DU metal chips, turnings, cuttings, and sludges immersed in oil found in the 618-4 Burial Grounds.
B Plant	B Plant Containment Building Storage	Process jumpers and equipment from B Plant Complex processes stored on the canyon deck and in process cells.
B Plant Cell 4 Waste	B Plant Complex Cell 4 Waste	Drums of Waste Encapsulation and Storage Facility (WESF) hot cell maintenance waste placed in storage from 1988 to 1997.
Cesium and Strontium Capsules	Cesium and Strontium Capsules	CsCl salt and SrF <sub>2</sub> salt reclaimed from double-shell tank (DST) and single-shell tank (SST) Systems mixed waste.

Table 1-1. Treatability Groups.

Identifier	Name	Major Waste Sources
DST Waste	DST Waste	Widely varying waste from chemical separations processes (e.g., PUREX, PFP, and cesium and strontium separations) and related support facilities operating from 1970 to date.
ERDF- Direct Disposal	ERDF - Direct Disposal	Waste streams from CERCLA remediation destined for direct disposal at ERDF.
ERDF- Treatment	ERDF- Treatment	Spent resins and lead-contaminated waste from CERCLA remediation requiring treatment before disposal at ERDF.
Hexone Storage and Treatment Facility	Hexone Storage and Treatment Facility	Residual heel content remaining from reduction/oxidation (REDOX) process.
LERF/ETF Liquid Waste	LERF/ETF Liquid Waste	Liquid waste sent from various Hanford Site processes to LERF and ETF for treatment.
MLLW-01	LDR Compliant Waste	Inorganic salt waste, excavated soil, and contaminated equipment that currently meets disposal criteria and regulatory requirements for disposal.
MLLW-02	Inorganic Non-Debris	Inorganic particulates, absorbed liquids and sludges, paint waste, salt waste, and aqueous laboratory packs from various generators.
MLLW-03	Organic Non-Debris	General organic solids and laboratory packs.
MLLW-04A	Organic/Carbonaceous (O/C) Hazardous Debris	Organic plastic, rubber, and heterogeneous debris.
MLLW-04B	Non-O/C Hazardous Debris	Current and past-practice waste, including metals, concrete, asbestos, and heterogeneous debris.
MLLW-05	Elemental Lead	Elemental lead and lead shielding.
MLLW-06	Elemental Mercury	Elemental mercury from various sources.
MLLW-07	RH and Large Container	RH and oversized CH MLLW generated on the Hanford Site.
MLLW-08	Unique Waste	This waste stream consists of unique waste that requires special processing not typically employed for the other MLLW waste streams. Example includes beryllium powder, requiring RMETL or RTHRM (40 CFR 268.42).
MLLW-09	Lead-Acid and Cadmium Batteries	Spent radioactive lead-acid and cadmium batteries.
MLLW-10	Reactive Metals	Reactive metal waste from FFTF and other sources.
PNNL-HWTU Waste	PNNL Laboratory Waste	Laboratory waste generated by research and analytical activities conducted by PNNL. This waste stream was managed in satellite and 90-day accumulation areas and subsequently transferred to the 325 HWTU for storage and/or treatment. Waste is or was generated by active, ongoing projects at PNNL.

Table 1-1. Treatability Groups.

Identifier	Name	Major Waste Sources
PUREX Containment Building Waste	PUREX Containment Building Waste	Chromium-contaminated debris from E-Cell floor currently stored in F-Cell of the PUREX Containment Building.
PUREX Storage Tunnel Waste	PUREX Storage Tunnels	Equipment and waste containing mercury, lead, silver, cadmium, chromium, barium, and mineral oil from PUREX and other processes.
Purgewater Storage and Treatment Facility	PSTF	Purgewater generated from pump-and-treat operations, well drilling, groundwater sampling, and well maintenance from all across the Hanford Site.
SST Waste	Single-Shell Tank System	Waste from spent nuclear fuel processing and related support facilities operating between 1944 and 1980.
T Plant EC-1 Condenser	T Plant Complex EC-1 Condenser	A condenser from the 242-A Evaporator now stored at T Plant Complex.
TRUM-BOX	M-91 T Plant TRUM, Large Boxed <sup>1</sup>	TRUM waste in large boxes, slated for M-91 processing, from the 324 Building and/or other sources.
TRUM-CH	WRAP TRUM <sup>1</sup>	CH TRUM waste (includes waste).
TRUM-RH	M-91 T Plant TRUM, Remote Handled (RH) <sup>1</sup>	TRUM waste slated for M-91 processing.
TRU-PCB	PCB TRUM and/or PCB TRU, CH <sup>1</sup>	TRUM and nonmixed waste contaminated with regulated levels of PCBs.

<sup>1</sup>These streams include both TRUM and nonmixed TRU waste. TRUM and nonmixed TRU waste categories use the same storage and treatment capacity and are not always distinguishable before characterization.

*Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq, as amended.*

*Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq., as amended.*

Table 1-2 is a comprehensive list of waste streams that were included in any previous LDR report, but are not included in this report, along with the reason the waste stream is no longer reported.

Table 1-2. Streams No Longer Applicable to Report.

Stream Name	Waste source	Reason
183-H Solar Evaporation Basins Waste	Containerized solids retrieved from 183-H Solar Evaporations Basins, generated from 300 Area fuel fabrication waste from 1973 to 1985.	Unit is in post-closure care. Process waste inventory is now stored at CWC and reported as part of that inventory.
PNNL-305B	Waste generated from PNNL laboratory and facility operations.	Storage activities at 305-B no longer meet the definition of a "waste stream" subject to the report. Waste stored is reflected in location-specific data sheets and reflected in the appropriate CWC waste stream description.
4843 Sodium Storage Facility Waste	Waste sodium from FFTF operations.	Significant amounts of alkali metal waste are no longer generated. This inventory is stored at the CWC and reported as part of that inventory.
Hexone Waste	Hexone that had been planned for use in the 202-S solvent extraction process.	Hexone has been incinerated offsite at Diversified Scientific Services, Inc., Kingston, Tennessee. (Small amounts of waste continue to be generated from surveillance and maintenance of the emptied tanks that were used to store the hexone. This waste is involved in the MLLW-04A treatability group.)
PUREX Facility Ammonia Scrubber Waste	Waste generated from sorption of gaseous ammonia from fuel processing operations at the PUREX Plant.	Waste no longer generated. Inventory in DST System.
PUREX Facility Process Condensate	Condensed vapors from the PUREX Plant operations.	Waste no longer generated. Inventory in DST System.
PUREX Plant Aging Waste	First extraction-column fission products from the PUREX Plant.	Waste no longer generated. Inventory in DST System.
T-Drageoff	T Plant Complex	Waste was dispositioned and disposed.
222-S RH-MLLW	222-S Laboratory Complex	Treatability group was combined with the MLLW-07 treatability group.
241-Z	Plutonium Finishing Plant	Treatability group was combined with the DST Waste treatability group.

Table 1-2. Streams No Longer Applicable to Report.

Stream Name	Waste source	Reason
HO-64-4275	Various Hanford Site locations.	Treatability group was combined with the DST Waste treatability group.
K Basin Sludge	100 Area K Basins	Treatability group was combined with the TRU-PCB treatability group.

## 1.2 STORAGE REPORT DATA COLLECTION PROCESS

A central database was used for managing data contained in Volume 1, Appendix B. Data were collected for all stored mixed waste and input into the database. Volumes reported as stored inventory at specific locations automatically were summed and presented as the storage information for the associated treatability group inventory. An analogous automatic summation was performed for projected waste generation rates. Appendix B contains the treatability group data sheets, along with the following information:

- A description of the data fields in the data sheets
- Figure B-1 to explain the relationship among the types of data sheets
- Table B-1 as an index to help find individual data sheets.

## 1.3 SCHEDULE AND MECHANICS OF LDR REPORT UPDATE

Each annual update is currently issued as a complete replacement that supersedes the previous year's LDR Report. Proposed TPA milestones or proposed changes to TPA milestones are identified and processed using existing processes contained in the TPA Action Plan, section 12.0, and not as part of the annual LDR report review and approval process. Modification of non-milestone schedules/content or commitments in the report could be made using errata sheets or could be incorporated in the next annual LDR report. The decision to issue errata sheets or to incorporate the modification in the next annual update is made jointly by DOE and Ecology project managers responsible for the work scope in question. Modification to Tri-Party Agreement milestones listed in the LDR report are incorporated in the next annual LDR report and are not issued as errata sheets. Further discussion and clarification of the report change and update process is planned in workshops with Ecology in the summer of 2002. As described in Attachment 3 of the March 14, 2002, *Resolution of Dispute Pertaining to Hanford Federal Facility Agreement and Consent Order Calendar Year Hanford Site Mixed Waste Land Disposal Restrictions Report*, DOE and Ecology plan to hold workshops during the summer of 2002 to make changes to the treatability group data sheets and location specific data sheet questions, consolidation of requirements documents for the LDR report, tracking commitments contained in the LDR report, how to accomplish year-to-year changes in the LDR report, revisit assessment schedule, and mechanism to transmit documents.

The annual report revisions consist of the following:

- Updated mixed waste inventories and generation rates to reflect current operating plans and schedules
- Updated treatment plans and schedules to reflect changes and refinements to defined mixed waste treatments and treatment schedules

- Revised waste stream characterizations to reflect the results of additional sample analyses or process changes
- Updated compliance status of the TSD units to reflect completion of pending storage assessments and permitting activities
- Report on completed LDR storage assessments and summarized resulting findings and observations
- Re-evaluation of the adequacy of the capacity of current TSD units for storing LDR mixed waste
- Addition of new or proposed milestones and revision of existing milestones as applicable
- Report on changes in the management and TSD of mixed waste required by changes in federal policy or regulations as applied to the DOE Complex
- Funding/budget guidance impacts on operating plans and schedules
- Addition of LDR mixed waste streams identified as mixed waste; adding waste that will be generated in the 5-year span for the LDR report; and adding potential mixed waste as it is identified.

#### 1.4 ASSUMPTIONS

This section lists key assumptions used to prepare this report. The assumptions could apply to either or both volumes of the report.

- This LDR report is the Hanford Site equivalent to site treatment plans produced for other DOE sites as required under the *Federal Facilities Compliance Act of 1992*.
- For tank waste (DST Waste and SST Waste treatability groups), the pretreatment methods to be developed include acceptable technology to separate the tank waste into low-activity waste (LAW) and high-level waste (HLW) streams so the bulk of chemical waste is in the LAW stream and the bulk of radionuclides is in the HLW stream
- Pretreated tank waste will be transferred to LAW and HLW vitrification facilities, using selective blending if necessary.
- For tank waste, it is assumed that a treatability variance is in place for the LAW fraction and a delisting petition is in place for the vitrified HLW fraction.
- The level of cyanides and organics in tank waste received from pretreatment is treatable by vitrification. The glass waste forms either comply with leachability requirements or appropriate variances are obtained.
- Liquid SST Waste from the SST System continues to be transferred to the DST System and mixed with DST Waste as part of the stabilization program for the SST System.
- Process condensate from the 242-A Evaporator and hazardous wastewater from other sources, including liquid effluents from tank waste pretreatment and vitrification, continue to be treated at ETF.

- Volumes of any containerized waste to be received from offsite generators for storage in the CWC or another location are consistent with the planning in this report. Additional mixed waste volumes not in the current baseline could affect storage space availability and treatment capacity, but are not planned for in this report.
- Waste stream data sheets (Appendix B) include information representing the basis for this storage report. The waste stream data sheets include a 5-year projection of waste volume (2002 through 2006, for this report). Projections of waste volume for years beyond this span are beyond the scope of this report. Projections beyond this span will be presented in applicable future LDR reports.
- The work scope contained in the LDR report is based on expected funding and are contingent on Congressional budget actions. If funding is reduced or reprioritized, the ability to conduct and complete work scope is affected. To address these changes, changes to Tri-Party Agreement milestones are made using Section 12.0 of the Tri-Party Agreement Action Plan, not as a part of the review and approval of the annual LDR report update.

## 1.5 ACCOMPLISHMENTS

This section lists accomplishments that could apply to either or both volumes of this report. Waste minimization accomplishments are listed in Section 6.2.

- A contract for designing, constructing, and commissioning the Hanford Site Tank Waste Treatment Plant (WTP) for HLW was accomplished in CY 2001.
- Treated 51 m<sup>3</sup> of waste by stabilization and 444 m<sup>3</sup> of waste by macroencapsulation at the Allied Technology Group, Inc. (ATG) facilities.
- Disposed of 170 m<sup>3</sup> of waste in the Hanford Site mixed waste trenches.
- Processed 95,000 m<sup>3</sup> of regulated wastewater through ETF.
- Disposed of 4,800 m<sup>3</sup> of mixed waste in the Environmental Restoration Disposal Facility (ERDF).
- Completed 5 shipments of TRU waste to Waste Isolation Pilot Plant (WIPP) containing a total of 42 m<sup>3</sup> of waste. None of this was mixed waste.
- Continued processing waste in the Waste Receiving and Processing (WRAP) Facility with 120 m<sup>3</sup> of TRU waste passing through nondestructive assay and 120 m<sup>3</sup> through nondestructive examination. About 40% of this waste was mixed waste.
- Continued retrieval of suspect-TRU drums from the Low-Level Burial Grounds (LLBG) with the retrieval of 769 drums (Tri-Party Agreement Milestone M-091-04).

## **2.0 SUMMARY STORAGE DATA**

The forecast generation rates represent the current best estimates of future waste generation for each LDR treatment group, or the quantity of mixed waste added to the TSD units. These estimates are developed by the generating facilities or programs based on an evaluation of operating schedules, past operational history, and projections of future waste-generating activities. The generation projections could be higher or lower than the actual generation values because of changes in process technologies and practices, waste treatment, production schedules, waste minimization activities or either poor or inaccurate estimates.

### **2.1 SUMMARY INVENTORY OF WASTE TREATMENT GROUPS AND FORECAST GENERATION RATES**

The volume of mixed waste currently in storage and the volume projected to be generated during the next 5 calendar years are presented in Table 2-1. These data are summarized from the location-specific data sheets and are also reported in the treatability group data sheets in Appendix B. Table 2-2 presents an overall summary of the storage, characterization, treatment, and disposal activities for the treatability groups. Table 2-2 is a collection of information from the following four tables: Volume 1 Table 2-1, Volume 2 Table 7-1, Volume 2 Table 8-1, and Volume 2 Table 8-2. Data on waste volumes in these tables are taken from Appendix B and rounded to two significant figures.

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Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
221-T RCRA Tank System	T Plant Complex Waste	Liquid mixed waste with settled solids/sludge (waste also contains PCBs at TSCA regulated concentrations)	63	0	0	0	0	0
222-S T8 RH-MLLW	222-S Laboratory Complex T8 Tunnel Waste	Debris that has come into contact with waste from the 219-S WHF tank system. The debris is designated as RH MLLW as a result of this contact.	0.20	0	0	0	0	0
241-CX Tanks	241-CX Tanks	Residual tank waste resulting from REDOX, PUREX, and Semiworks processes.	3.0	0	0	0	0	0
324 Bldg. Radiochemical Engineering Cell Waste	324 Building Radiochemical Engineering Cells	WSRd# 324X-20J-0001. High activity radioactive waste containing regulated quantities of toxic heavy metals. Mixed waste residue will be generated from the future REC decontamination and deactivation activities.	5.0	0	0	5.0	5.0	0
618-4 DU/Oil Drums	Depleted Uranium in Oil from 618-4 Burial Ground	The drums contain depleted uranium chips, turnings, cuttings, and sludges immersed in oil discovered in a burial ground being excavated under a CERCLA ROD. The 618-4 Burial Ground was operated from 1955 to 1961. No information is available about the history or source of the waste. The drums were discovered in March 1998 during remediation activities. In April 1998, each of the excavated drums was placed in a vented overpack and those with low oil content were stabilized with mineral oil. The drums are staged within the Area of Contamination (AOC) and are being managed in accordance with CERCLA requirements. Those drums that were not excavated will remain in the burial ground until treatment of the current inventory begins. Forecast volume has been updated to include projected waste from the 618-5 Burial Ground, which is assumed to have analogous waste to the 618-4 Burial Ground.	55	37	130	0	0	0

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
B Plant	B Plant Containment Building Storage	Stream consists of failed equipment (e.g., process jumpers, pumps, etc.) used in the 221-B canyon. Contaminated debris/equipment derived from the processing of "F" listed wastes for the recovery of strontium and cesium. Also contains elemental lead used for counterbalances and shielding. The current waste inventory is 294,000 kg, and no additional waste will be stored at this location. The facility is under long-term surveillance and maintenance.	290,000 kg	0	0	0	0	0
B Plant Cell 4 Waste	B Plant Complex Cell 4 Waste	Waste resulted from WESF hot cell maintenance waste (i.e. manipulator boots, light bulbs, HEPA filters, misc. debris). No additional waste will be stored in this location as the facility is under long-term surveillance and maintenance.	1.4	0	0	0	0	0
Cesium and Strontium Capsules	Cesium and Strontium Capsules	Cesium and strontium were reclaimed from Tank Farm waste as a product, separated and purified at B Plant, and converted to dry salt for storage at WESF. The cesium and strontium capsules were declared waste in 1997 with the application for a Part A, Form 3, permit application. The subject waste consists of 1335 cesium capsules and 601 strontium capsules. The capsules are stored in pool cells at WESF.	2.0	0	0	0	0	0
DST Waste	DST Waste	Basic aqueous solution that might contain suspended material and/or settled solids (sludge and saltcake). Waste streams are treated with sodium hydroxide and sodium nitrite to minimize tank corrosion and to address compatibility issues. Waste has been stored in the DST System from 1970 to the present.	80,000	17,000	7,800	6,500	9,300	8,700
ERDF – Direct Disposal	ERDF – Direct Disposal	Remediation waste generated from excavation of waste sites, D&D, and monitoring and treatment of groundwater. Waste stream is generated pursuant to RODs or other CERCLA authorization.	20	3,700	3,600	3,600	3,600	3,600

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Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
ERDF—Treatment	ERDF—Treatment	This waste stream reflects mixed waste, contaminated with lead or chromium, that requires treatment before disposal at ERDF. The waste is stored at the operable unit, and is transferred to ERDF where the waste is treated and disposed.	6.0	410	390	390	390	390
Hexone Storage and Treatment Facility	Hexone Storage and Treatment Facility	Residual heel content remaining from Reduction/Oxidation (REDOX) Process.	1.1	0	0	0	0	0
LERF/ETF Liquid Waste	LERF/ETF Liquid Waste	CERCLA and RCRA aqueous wastewater	28,000	81,000	81,000	81,000	81,000	81,000
MLLW-01	LDR-Compliant Waste	WSRds: BLS, H3L, 901, 903, 904, 930, 931; Waste with WSRd BLS consists of soils (dirt, sand, gravel, rocks, etc.) that were excavated from the various tank farms. The waste was incidentally contaminated with tank waste; therefore, the waste is designated with F001 through F005 based on the "contained-in" policy. The waste typically is packaged in drums and boxes. Remaining WSRds include waste that consists of soils (dirt, sand, gravel, rocks, etc.), treated debris, other particulates, and solidified liquids. All waste forms are anticipated to contain LDR compliant levels of dangerous waste constituents. Subject waste also includes the currently stored inventory of LDR compliant 183-H Basin waste and the forecasted LDR compliant waste that comes directly from the generator (e.g., macroencapsulated SST/DST long-length contaminated equipment (LLCE) and other debris waste items, deactivated waste, stabilized waste and waste meeting LDRs as generated).	1,100	57	57	57	57	57

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
MLLW-02	Inorganic Non-Debris	This treatability group is for non-debris waste that contains hazardous constituents that either require non-thermal treatment (specified technology) or non-thermal treatment is BDAT for meeting the applicable LDR treatment standards (concentration-based standards). The applicable WSRds for this treatability group are: ALI, IXI, LPI, PAI, SSA, H3C, H3M, H3S, 420, 421, 425, 426, 428, 429, 44A, 500(183-H only), 500-0, 500-1, 504-0, 505(except 505-3), 521, 523, 525, 801, 812, 820, 821, 82A, 830, 900, 902, 904, 90A. This waste consists of many different inorganic solids (e.g., particulates, absorbed liquids, sludges, resins, soils) and labpacks that are contaminated with regulated metals and other inorganics. This waste treatability group does not include hazardous debris other than incidental debris material commingled with the non-debris. The inventory is primarily from the closure of the 183-H Solar Evaporation Basins.	2,700	14	11	18	18	13

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
MLLW-03	Organic Non-Debris	This treatability group is for non-debris waste that contains hazardous constituents that either require thermal treatment (specified technology) or thermal treatment is BDAT for meeting the applicable LDR treatment standards (concentration-based standards). Stabilization of the thermal treatment residue also might be required. The applicable WSRs for this treatability group are: ALO, LPA, LPO, PAO, TSC, 300, 301, 302, 303, 304, 305, 310, 311, 320, 321, 330, 331, 31A, 400, 401, 402, 403, 404, 405, 406, 407, 408, 40A, 40B, 427, 430, 431, 432, 45A, 47A, 500 (except 183H), 501-2, 502 (except 200LEF), 503-2, 504-1, 505-3, 506, 507, 50A, 700, 701, 720, 721, 822, 920, 921, 922, 923. This waste stream consists of many different inorganic and organic solids (e.g., particulates, absorbed liquids, sludges, resins, soils) and labpacks that are contaminated with organic regulated dangerous waste constituents, including PCBs. This waste stream does not include hazardous debris other than incidental debris material commingled with the non- debris.	800	24	26	28	32	30
MLLW-04A	O/C Hazardous Debris	This treatability group is for waste that meets the definition of hazardous debris as defined in 40 CFR 268.2, and the waste contains physical and/or chemical constituents that would be considered to meet the definition of organic/carbonaceous waste as defined in WAC 173-303-040. The physical characteristics include paper, plastic, wood, rubber, rags, and lesser quantities of metallic and inorganic waste components. Applicable WSRs could include: ASB, BLD, DBR, DBL, H3D, SOC, SOE, 600, 601,603, 605, 606, 607, 60A, 60B, 620, 621, 622, 640, 641, 315, 334, 625, 626, and 627.	1,700	140	140	150	150	150

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
MLLW-04B	Non-O/C Hazardous Debris	This treatability group is for waste that meets the definition of hazardous debris as defined in 40 CFR 268.2, and the waste does not contain physical and/or chemical organic/carbonaceous waste constituents in excess of 10% as defined in WAC 173-303-040. The physical characteristics include metals, inorganic debris items, and lesser quantities of O/C waste components (paper, plastic, wood, etc.). Applicable WSRds could include: ASB, 640, 641, 645, 646, and 647. Debris that is regulated for PCBs by TSCA regulations is not included in this waste stream; such debris is considered organic solid waste and is reported in MLLW-03.	160	130	150	160	180	180
MLLW-05	Elemental Lead	This treatability group is for waste that is determined to meet the "Radioactive Lead Solids Subcategory" as described in 40 CFR 268.40. Applicable WSRds for this treatability group are: EPB, 800, 801, 803. This treatability group consists of many different forms of radioactive lead solids including bricks, sheets, shot-filled blankets, and lead-lined debris items where the lead comprises more than 50% of the waste matrix. The waste was and is generated by many onsite generating organizations and offsite generators.	450	2.0	23	22	17	16
MLLW-06	Elemental Mercury	This treatability group is for waste that is determined to meet the "Elemental Mercury Contaminated with Radioactive Materials" subcategory as described in 40 CFR 268.40. Applicable WSRds for this treatability group are: EHG, HHG, 810, 811, and 812. This treatability group consists of liquid mercury, partially amalgamated mercury, mercury spill cleanups, and some debris waste items that are packaged in with the mercury waste.	13	0.20	0	1.0	0.2	0

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
MLLW-07	RH and Large Container	WSRds: DBL, HRW, 450, 550, 650. This waste stream is comprised of remote-handled mixed low-level waste (RH-MLLW) with various chemical (organics, inorganics, metals) and physical (particulates, debris, sludges, etc.) characteristics. Many different regulated constituents could be represented in this waste stream; however, the primary waste type is heterogeneous debris from the SST/DST Systems operations. This waste stream also contains waste in oversized containers not typically suited for commercial treatment; which will be treated using the M-91 MLLW capability.	66	150	340	300	280	280
MLLW-08	Unique Waste	BER, 821, 823, 84A. This waste stream consists of unique waste that requires special processing not typically employed for the other MLLW waste streams. Example includes beryllium powder, requiring RMETL or RTHRM.	21	0	0	0	0	0
MLLW-09	Lead-Acid and Cadmium Batteries	BAT, 802, 830. This waste consists of lead-acid and cadmium batteries from various onsite locations and from offsite generators.	8.4	0.01	0.2	4.0	0.2	0.01
MLLW-10	Reactive Metals	ENA, 44A, 44B, 820, 822, 82A. This waste consists of water-reactive metals and compounds, typically including sodium metal; also could consist of water-reactive cyanides.	25	0.3	0.3	0.3	0.3	0.3
PNNL-HWTU Waste	PNNL Laboratory Waste	This waste stream consists of many different inorganic and organic solids and liquids that are contaminated with inorganic and organic regulated dangerous waste constituents, including PCBs. This waste stream also includes hazardous debris. WSRds in this waste stream: 400, 401, 402, 403, 404, 420, 421, 422, 500, 501, 503, 504, 505, 521, 523, 524, 525, 627, 647, 800, 820, 822, 830, 923, 930.	2.3	31	25	25	25	25
PUREX Containment Bldg. Waste	PUREX Containment Building	Concrete rubble contaminated with trace chromium as a corrosion product. No additional waste will be stored at this location as the facility is under long-term surveillance and maintenance.	1.0	0	0	0	0	0

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
PUREX Storage Tunnel Waste	PUREX Storage Tunnels	This treatability group varies from very large equipment vessels with lead counterweights to very fine powder in canisters.	2,800	0	0	0	0	0
Purgewater Storage and Treatment Facility	PSTF	Groundwater contaminated with uranium, technetium, carbon tetrachloride, and nitrates.	0	2,500	2,500	2,500	2,500	2,500
SST Waste	Single-Shell Tank System	Basic aqueous slurry with layers of saltcake and/or sludge. The sludge consists of solids (i.e., hydrous metal oxides) precipitated from the neutralization of acid waste. The saltcake consists of the various salts formed from the evaporation of water.	130,000	0	0	0	0	0
T Plant EC-1 Condenser	T Plant Complex EC-1 condenser	This treatability group consists of a large piece of steel equipment contaminated with listed mixed waste. This is the old condenser from the 242-A Evaporator. The condenser was received at T Plant Complex in 1995.	32	0	0	0	0	0
TRUM-BOX	M-91 T Plant TRUM, Large Boxed	TRUM waste from various generating activities around the Hanford Site. The waste contains iron-based metal, plastic/ polyurethane, wood, paper, filters, soil, miscellaneous/ unknown/other, rags, lead, plexiglas, styrofoam, anti-corrosive radpad, asbestos, rubber, glass, absorbent/kitty litter, cement, and concrete.	160	0	0	0	0	0
TRUM-CH	WRAP TRUM	The waste came from various facilities on and off the Hanford Site. The waste contains plastic/polyurethane, rubber, iron-based metal, soil, paper, cardboard, lead, rags, cement, stainless steel, wood, styrofoam, glass, conweb pads, absorbent/kitty litter, filters, lead shielding, universal polypropylenes, anti-corrosive radpad, carbon steel, fiberglass, brick/ firebrick, plastic liner, shielding, concrete, animal waste, paints, ceramics, sludges, asbestos, aluminum, sand equipment, diatomaceous earth, resins, copper metal, lead, water, floor sweeps, batteries, leather, liquid, teflon, cork, cotton/kotex, light bulbs, urethane, and wax.	360	180	230	300	410	250

Table 2-1. Stored Volumes of Mixed Waste and Generation Projections

Treatability Group Identifier	Treatability Group Name	Description <sup>1</sup>	Current Inventory (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2002 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2003 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2004 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2005 (m <sup>3</sup> ) <sup>2</sup>	Generation Projection 2006 (m <sup>3</sup> ) <sup>2</sup>
TRUM-RH	M-91 T Plant TRUM, RH	The waste consists of inner-container, iron-based metals, lead, soil, lead shielding, and steel shielding. Waste is from cleanout of hot cells from reearch and development laboratories. The relative waste quantity is small, because the waste matrix contains a large percentage of lead and steel shielding materials.	45	8.0	4.0	3.0	3.0	3.0
TRU-PCB	PCB TRUM and/or PCB TRU, CH	The waste contains metal, plastic, wood, lead, oils (hydraulic fluid), paper, conweb pads, glass (crushed fluorescent tubes), concrete, rags, absorbent/kitty litter, rubber, universal polypropylenes, soil, and tape/rope that have been contaminated with PCBs. The light ballasts are typically in large boxes and the hydraulic fluid is typically in drums.	80	0	15	17	20	0
Total (without B Plant Complex for current inventory only) (Total might not be exact because of rounding)			250,000	110,000	96,000	95,000	98,000	97,000

<sup>1</sup> Waste specification record (WSRd) indicates a waste's treatment and/or disposal pathway.

<sup>2</sup> Volume numbers in this table have been rounded to two significant figures.

AOC	area of contamination	MLLW	mixed low-level waste
BDAT	best demonstrated available technology	O/C	organic/carbonaceous
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>	OU	operable unit
CFR	<i>Code of Federal Regulations</i>	PCB	polychlorinated biphenyl
CH	contact handled	PNNL	Pacific Northwest National Laboratory
CSB	Canister Storage Building	PUREX	Plutonium-Uranium Extraction (Plant)
D&D	decontamination and decommissioning	RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
DST	double-shell tank	REC	radiochemical engineering cell
ERDF	Environmental Restoration Disposal Facility	REDOX	Reduction-Oxidation (Plant)
ETF	200 Area Effluent Treatment Facility	RH	remote handled
HEPA	high-efficiency particulate air	ROD	record of decision
HLV	high-level vault	SST	single-shell tank
HWTU	hazardous waste treatment unit	TRU	transuranic
IHLW	immobilized high-level waste	TRUM	transuranic mixed
ILAW	immobilized low-activity waste	TSCA	<i>Toxic Substances Control Act of 1976</i>
LDR	land disposal restrictions	WAC	<i>Washington Administrative Code</i>
LERF	Liquid Effluent Retention Facility	WESF	Waste Encapsulation and Storage Facility
LLCE	long-length contaminated equipment	WHF	Waste Handling Facility
		WSRd	Waste Specification Record

Table 2-2. Treatability Group Summary of Storage, Characterization, Treatment, and Disposal Activities.

Treatability Group Identifier	Treatability Group Name	Current Inventory (m <sup>3</sup> ) <sup>1</sup>	Projected generation volume 2002 through 2006 (m <sup>3</sup> ) <sup>1</sup>	Planned characterization schedule	Treatment process	Projected volume to be treated 2002 through 2006 (m <sup>3</sup> ) <sup>1</sup>	Disposal location	Volume to be disposed of through 2006 (m <sup>3</sup> ) <sup>1,2</sup>
221-T RCRA Tank System	T Plant Complex Waste	63	0	Will be done in conjunction with T Plant Complex Canyon disposition.	Not yet decided.	0	Not yet decided.	0
222-S T8 RH-MLLW	222-S Laboratory Complex T8 Tunnel Waste	0.2	0	2033	Not yet decided.	0	Mixed waste trenches.	0
241-CX Tanks	241-CX Tanks	3.0	0	Central Plateau Negotiations currently underway will address the milestones and associated schedule for characterization and closure of the tanks.	Not yet decided.	0	Not yet decided	0
324 Bldg. Radiochemical Engineering Cell Waste	324 Building Radiochemical Engineering Cells	5.0	10	Completed	Not yet decided.	0	WIPP	0
618-4 DU/Oil Drums	Depleted Uranium in Oil from 618-4 Burial Ground	55	170	Completed	Commercial-thermal.	220	ERDF.	TBD under M-16-031.
B Plant	B Plant Containment Building Storage	290,000 kg	0	To be determined under Tri-Party Agreement Section 8.0.	Not yet decided.	0	Not yet decided	0

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Table 2-2. Treatability Group Summary of Storage, Characterization, Treatment, and Disposal Activities.

Treatability Group Identifier	Treatability Group Name	Current Inventory (m <sup>3</sup> ) <sup>1</sup>	Projected generation volume 2002 through 2006 (m <sup>3</sup> ) <sup>1</sup>	Planned characterization schedule	Treatment process	Projected volume to be treated 2002 through 2006 (m <sup>3</sup> ) <sup>1</sup>	Disposal location	Volume to be disposed of through 2006 (m <sup>3</sup> ) <sup>1,2</sup>
B Plant Cell 4 Waste	B Plant Complex Cell 4 Waste	1.4	0	To be determined under Tri-Party Agreement Section 8.0.	Not yet decided.	0	Not yet decided	0
Cesium and Strontium Capsules	Cesium and Strontium Capsules	2.0	0	Completed.	Vitrification	0	HLW repository.	0
DST Waste	DST Waste	80,000	49,000	Ongoing.	WTP	0	HLW repository and onsite vaults.	0
ERDF - Direct Disposal	ERDF - Direct Disposal	20	18,000	Ongoing.	No treatment needed for direct disposal.	No treatment needed.	ERDF.	18,000
ERDF—Treatment	ERDF—Treatment	6.0	2,000	Ongoing.	ERDF treatment.	2,000	ERDF.	2,000
Hexone Storage and Treatment Facility	Hexone Storage and Treatment Facility	1.1	0	Central Plateau Negotiations currently underway will address the milestones and associated schedule for characterization and closure of the tanks.	Not yet decided.	Central Plateau negotiations are currently underway	Not yet decided	0
LERF/ETF Liquid Waste	LERF/ETF Liquid Waste	28,000	400,000	Ongoing.	ETF.	430,000	SALDS.	430,000
MLLW-01	LDR-Compliant Waste	1,100	280	Proposed M-91 <sup>3</sup>	No treatment required.	No treatment required.	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-02	Inorganic Non-Debris	2,700	74	Proposed M-91 <sup>3</sup>	Commercial-stabilization.	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-03	Organic Non-Debris	800	140	M-91-12, M-91-12A, Proposed M-91 <sup>3</sup>	Commercial-thermal.	M-91-12, M-91-12A, Proposed M-91 <sup>3</sup>	Mixed waste trenches.	M-91-12, M-91-12A, Proposed M-91 <sup>3</sup>

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Table 2-2. Treatability Group Summary of Storage, Characterization, Treatment, and Disposal Activities.

Treatability Group Identifier	Treatability Group Name	Current Inventory (m <sup>3</sup> ) <sup>1</sup>	Projected generation volume 2002 through 2006 (m <sup>3</sup> ) <sup>1</sup>	Planned characterization schedule	Treatment process	Projected volume to be treated 2002 through 2006 (m <sup>3</sup> ) <sup>1</sup>	Disposal location	Volume to be disposed of through 2006 (m <sup>3</sup> ) <sup>1,2</sup>
MLLW-04A	O/C Hazardous Debris	1,700	730	Proposed M-91 <sup>3</sup>	Commercial-thermal	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-04B	Non-O/C Hazardous Debris	160	800	Proposed M-91 <sup>3</sup>	Commercial-Macro.	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-05	Elemental Lead	450	80	Proposed M-91 <sup>3</sup>	Commercial-Macro.	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-06	Elemental Mercury	13	1.3	Proposed M-91 <sup>3</sup>	Commercial amalgamation.	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-07	RH and Large Container	66	1,400	Proposed M-91 <sup>3</sup>	M-91 MLLW.	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-08	Unique Waste	21	0	Proposed M-91 <sup>3</sup>	Not yet decided.	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-09	Lead-Acid and Cadmium Batteries	8.4	4.1	Proposed M-91 <sup>3</sup>	Not yet decided.	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
MLLW-10	Reactive Metals	25	1.5	Proposed M-91 <sup>3</sup>	Not yet decided.	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
PNNL-HWTU Waste	PNNL Laboratory Waste	2.3	130	Proposed M-91 <sup>3</sup>	HWTU, ATG	Proposed M-91 <sup>3</sup>	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
PUREX Containment Bldg. Waste	PUREX Containment Building	1.0	0	To be determined under Tri-Party Agreement Section 8.0.	Not yet decided.	0	Not yet decided	0
PUREX Storage Tunnel Waste	PUREX Storage Tunnels	2,800	0	2027	Addressed under the Tri-Party Agreement, Section 8.0.	0	Not yet decided.	0

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Table 2-2. Treatability Group Summary of Storage, Characterization, Treatment, and Disposal Activities.

Treatability Group Identifier	Treatability Group Name	Current Inventory (m <sup>3</sup> ) <sup>1</sup>	Projected generation volume 2002 through 2006 (m <sup>3</sup> ) <sup>1</sup>	Planned characterization schedule	Treatment process	Projected volume to be treated 2002 through 2006 (m <sup>3</sup> ) <sup>1</sup>	Disposal location	Volume to be disposed of through 2006 (m <sup>3</sup> ) <sup>1,2</sup>
Purgewater Storage and Treatment Facility	PSTF	0	13,000	Ongoing.	Solar evaporation at PSTF.	13,000	The residues and sludges remaining in the modular tanks will be removed, treated as necessary to meet the ERDF waste acceptance criteria, and be disposed in ERDF.	600
SST Waste	Single-Shell Tank System	130,000	0	Ongoing.	WTP	0	HLW repository and onsite vaults.	0
T Plant EC-1 Condenser	T Plant Complex EC-1 condenser	32	0	Completed.	Debris macroencapsulation/microencapsulation	0	Mixed waste trenches.	Proposed M-91 <sup>3</sup>
TRUM-BOX	M-91 T Plant TRUM, Large Boxed	160	0	Proposed M-91 <sup>3</sup>	M-91 TRU.	0	WIPP.	Proposed M-91 <sup>3</sup>
TRUM-CH	WRAP TRUM	360	1,400	Proposed M-91 <sup>3</sup>	WRAP Facility.	1,000	WIPP	Proposed M-91 <sup>3</sup>
TRUM-RH	M-91 T Plant TRUM, RH	45	19	Proposed M-91 <sup>3</sup>	M-91 TRU	0	WIPP.	Proposed M-91 <sup>3</sup>
TRU-PCB	PCB TRUM and/or PCB TRU, CH	80	52	Before WIPP closure (~2034)	Not yet determined.	0	WIPP.	0

<sup>1</sup> Volume numbers in this table have been rounded to two significant figures.

<sup>2</sup> Disposal volumes used are as-generated volumes without consideration of changes during treatment.

<sup>3</sup> Treatment and disposal will be performed as necessary to support results of the active M-91 TPA negotiations.

ATG Allied Technology Group, Inc.

CH contact handled

DST double-shell tank

ERDF Environmental Restoration Disposal Facility

ETF 200 Area Effluent Treatment Facility

HLW high-level waste

HWTU hazardous waste treatment unit

kg kilogram

LDR land disposal restrictions

LERF Liquid Effluent Retention Facility

MLLW mixed low-level waste

PCB polychlorinated biphenyls

PNNL Pacific Northwest National Laboratory

PSTF Purgewater Storage and Treatment Facility

PUREX Plutonium-Uranium Extraction (Plant)

RCRA Resource Conservation and Recovery Act of 1976

RH remote handled

SALDS State-approved land disposal structure

SST single-shell tank

TBD to be determined

TRUM transuranic mixed

WIPP Waste Isolation Pilot Plant

WTP Waste Treatment Project

## 2.2 SUMMARY INVENTORY BY STORAGE METHOD AND LOCATION

Storage methods are summarized in Figure 2-1. Information in the figure reflects waste and storage data as of December 31, 2001. These totals do not include waste in accumulation areas. The category "Other" includes all waste not stored in containers, DSTs or SSTs, or waste at LERF/ETF (e.g., PUREX Storage Tunnel Waste).

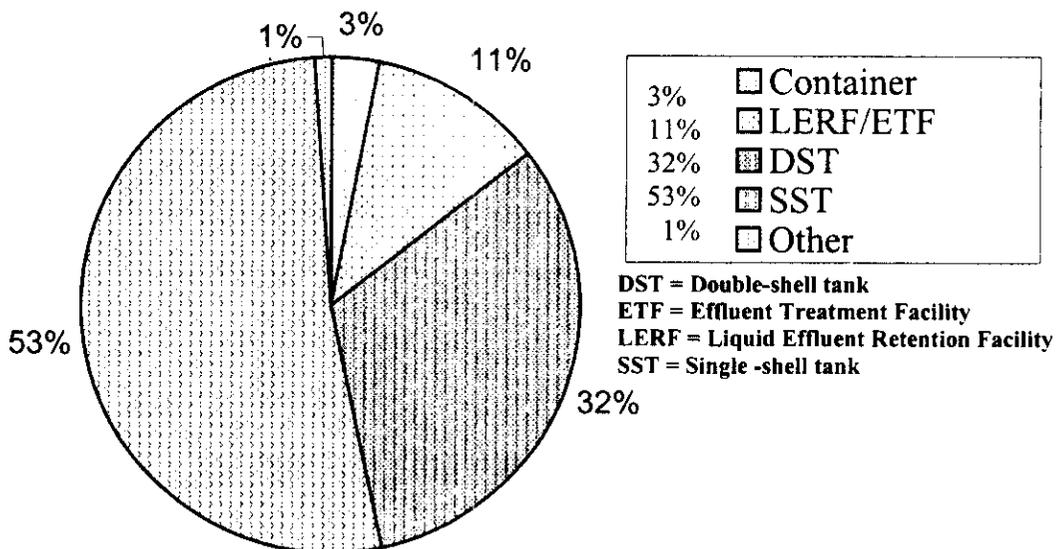


Figure 2-1. Storage Method Summary.

## 2.3 POTENTIAL MIXED WASTE

The potential mixed waste table (PMWT) (Appendix C) includes materials that have not been generated as mixed waste and waste that has not been actively managed as mixed waste. The materials included are those that reasonably could be expected to be generated as mixed waste at some future time. The materials included in the PMWT (equipment, piping, etc.) are those that currently are not being used and do not have a clear path for reuse or recycling. The waste that has not been actively managed as mixed waste is, in many cases, at past-practice units, either as RCRA or CERCLA, under the Tri-Party Agreement. Past-practice waste is waste that was abandoned before the first effective LDR date in Washington State, August 19, 1987. Classification of waste management units as RCRA or CERCLA past-practice units is described in Section 3.0 of the Tri-Party Agreement Action Plan. When cleanup actions occur in the operable unit for these RCRA or CERCLA past-practice units, mixed waste could, or is expected to be, generated during remediation activities. The PMWT also includes a similar category of materials currently in standby for a potential future use. The table was developed for the following reasons:

- To acknowledge that materials might become mixed waste at a future date
- To begin identifying data gaps (e.g., whether the material would be designated as mixed waste) and facilitate discussions to establish a path forward toward disposition for those materials eventually identified as mixed waste.

As a result of discussions with Ecology and EPA, the following categories of materials have not been included in the PMWT.

- Generated mixed waste. This mixed waste is included in treatability group and location-specific data sheets in Appendix B of this LDR report.
- Contaminated soil sites, cribs, ponds, ditches, trenches, etc., considered engineered disposal units. [However, the materials would be included in a LDR report location-specific data sheet (Appendix B) when management or disposition activities associated with those units are expected to result in the generation of mixed waste in the next 5 years.]
- The building structures themselves, including contaminated walls, floors, floor sweepings, dust, etc. Building equipment, such as ventilation system components and building utilities that would be considered part of the structure, also is not included.
- Equipment and chemicals being used.

The PMWT includes information on the assessments performed or scheduled to meet the DOE assessment requirement of the LDR storage report. Chapter 3.0 provides more information concerning assessments.

The PMWT also includes known and proposed schedule information. This information can include the following, as applicable:

- Proposed dates for assessments
- Operable units that encompass the facility or unit
- Existing documentation and milestones or schedules that indicate plans that will address the PMW
- Date to complete data gap plan
- Start date for major negotiations such as facility transition or deactivation.

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### 3.0 COMPLIANCE ASSESSMENTS OF MIXED WASTE AND POTENTIAL MIXED WASTE STORAGE AREAS

The DOE conducts assessments of mixed waste storage areas and other areas that could, in the future, be the source of generation of other mixed waste. DOE assessments include reviewing other independent assessments and inspections and contractor self-assessments. In addition, daily, weekly, monthly, quarterly, and annual contractor assessments and inspections are conducted at Hanford Site mixed waste storage areas in accordance with company policy, DOE requirements, permit conditions, and other LDR storage obligations. DOE provides an additional level of review for the results of contractor management and oversight activities to ensure that all necessary program elements are in place and functioning appropriately.

#### 3.1 INTRODUCTION

Of the findings and observations that were made from DOE assessments in CY 2001, no indicators requiring global actions for LDR reporting were identified.

#### 3.2 ASSESSMENT SCHEDULES

DOE-RL scheduled nine assessments in CY 2001. The findings from these assessments are summarized in Table 3-1.

Table 3-1. Summary of DOE-RL Assessment Results.

Assessment Location	Assessment Number	Assessment Start Dates	Findings and Observations
Plutonium Finishing Plant	A&E-SEC-01-015	February 1, 2001	Three findings and no observations. <sup>1</sup>
222-S Laboratory Complex	A&E-SEC-01-018	April 11, 2001	No findings or observations.
Waste Receiving and Processing Facility	A&E-DWR-01-011	July 23, 2001	No findings or observations.
PUREX Storage Tunnels	A&E-SEC-01-016	September 24, 2001	No findings or observations.
224-T Storage Building	A&E-SEC-01-017	October 3, 2001	No findings or observations.
Central Waste Complex	A&E-SEC-02-001	November 28, 2001	No findings or observations.
Low-Level Burial Grounds	A&E-SEC-02-003	November 28, 2001	No findings and two observations. <sup>2</sup>
Waste Encapsulation and Storage Facility	A&E-SEC-02-002	December 17, 2001	No findings or observations.
325 Building	A&E-DWR-02-004	December 20, 2001	Report still in draft – not issued

<sup>1</sup> Finding : Inactive Process Vessels and Ancillary Equipment

<sup>1</sup> Finding : Satellite Accumulation Areas Management..

<sup>1</sup> Finding : Posting and Labeling Processes.

<sup>2</sup> Observation : Facility Boundary Posting Needs Improvement,

<sup>2</sup> Observation : Administrative Error on <90 Day Storage Pad Checklist.

Table 3-2 lists the locations where DOE-RL plans to conduct assessments in CYs 2002 through 2004

Table 3-2. DOE-RL Assessments for CYs 2002 through 2004.

Facility	Start Date	Facility	Start Date
224-T	1st Quarter CY2002	300 Area General	3rd quarter CY2003
3720	2nd quarter CY2002	340/340A/340B/300-RLWS	4th quarter CY2003
327	3rd quarter CY2002	K Basin East	1st quarter CY2004
324	4th quarter CY2002	K Basin West 100 Area Reactor Auxiliaries (excluding reactors)	2nd quarter CY2004
333 314	1st quarter CY2003	100 Area General (everything but reactors and reactor auxiliaries)	3rd quarter CY2004
3708 309 3711	2nd quarter CY2003	SNF Complex	4th quarter CY2004

The U.S. Department of Energy, Office of River Protection (DOE-ORP), was scheduled to conduct three assessments in CY 2001. All three assessments were completed. Individual assessments are listed in Table 3-3 and are documented in the listed assessment reports. Table 3-4 shows where the ORP plans to conduct assessments for CY 2002 through 2004.

Table 3-3. Summary of DOE-ORP Assessment Results. \*

Assessment Location	Assessment Number	Assessment Conduct Dates	Findings and Observations
LDR assessment of Tank Farm Single Shell Tanks and Double Shell Tanks	A-01-EMD-TF-09	July 1– December 2001	Two findings and eight observations. <sup>1</sup>
Tank Farms: 272-WA, 272-AW, 213-W, 2727-WA, 204-AR, 244-AR	A-01-EMD-TF-08	June 10 – July 28, 2001	One finding and seven observations. <sup>2</sup>
Tank Farm inactive waste sites	EMD-TF-2001-04	June 2001	Four findings and four observations <sup>3</sup>

\* Not all findings and observations from these assessments are directly related to mixed waste storage compliance. Only those directly related are tabled below.

<sup>1</sup>Finding: Re-usable equipment was found improperly managed and labeled.

<sup>1</sup>Finding: Not all employees working with dangerous waste were identified by name on the training matrix.

<sup>1</sup>Observation: The Contaminated Equipment procedures (HNF-IP-0842 Vol.6, Sec.2.8) needs to be improved.

<sup>1</sup>Observation: The inspection schedule should be document controlled.

<sup>1</sup>Observation: The periodicity of one cathodic inspection was slightly exceeded.

<sup>1</sup>Observation: The operating record should be better managed in context of a programmatic approach to TSD management.

<sup>1</sup>Observation: The process knowledge documentation for SST waste designation should be place into the administrative record.

<sup>2</sup>Finding: The alarm response procedures for 204-AR (ARP-T-291-00001, Rev. A-2) Reference the wrong emergency procedure.

<sup>2</sup>Observation: Shop rags may not have been properly managed from the 272-WA shop.

<sup>2</sup>Observation: Management of items and equipment with potentially hazardous constituents in the 2727-WA lay down yard should be reviewed. Consideration should be given to updating procedure HNF-IP-0842, Vol. XV, Section 7.2, Rev. 0d.

<sup>2</sup>Observation: The Tank TK-1 in the unloading area sump actively stores waste but is not specifically listed in the Part A for the DST system. Otherwise, the CH2M HILL Hanford Group, Inc. procedures are unclear on the requirement to maintain the volume in Tank TK-1 of less than 175 gallons.

<sup>2</sup>Observation: The Waste Tank Summary Report (HNF-EP-0182) lists 244-AR as a "special surveillance facility" (Appendix E) but provides incorrect data regarding the facility. Documentation that monitoring was conducted of level trends in 244-AR tanks and sumps was not found in the assessment.

<sup>2</sup>Noteworthy Action: The transfer line from LIQW-702 from 204-AR to A-A valve pit may not be strictly compliant with Washington Administrative Code 173-303-640. The contractor has been proactive and continued discourse with the State of Washington Department of Ecology and has received a written opinion.

<sup>3</sup>Finding: Annual inspections and radiological surveys have not been performed on inactive waste sites or documentation was available.

<sup>3</sup>Finding: A MISF near the 242-T Evaporator remains unidentified.

<sup>3</sup>Observation: Use of barriers was inconsistent and not defined.

<sup>3</sup>Observation: The use of "Danger" postings is inconsistent with the hazard at inactive waste sites.

<sup>3</sup>Observation: Contractor responsibility for various inactive wastes is ill defined and changes without adequate documentation and authorization.

Table- Table 3-4. DOE-ORP Assessments for CYs 2002 through 2004..

Facility	Completion Date	Facility	Completion Date
Cesium Unloading Station (801C Building)	2 <sup>nd</sup> Quarter 2002	AX/AZ Tank Farm	3 <sup>rd</sup> Quarter 2003
Contractors Self-Assessment	2 <sup>nd</sup> Quarter 2002	Catch Tanks UX-302A, A-350, AX-152, AZ151	3 <sup>rd</sup> Quarter 2003
BY Tank Farm	3 <sup>rd</sup> Quarter 2002	A Tank Farm	4 <sup>th</sup> Quarter 2003
BX Tank Farm	3 <sup>rd</sup> Quarter 2002	244-U DCRT	2 <sup>nd</sup> Quarter 2004
SY Tank Farm	3 <sup>rd</sup> Quarter 2002	244-S DCRT	2 <sup>nd</sup> Quarter 2004
AW Tank Farm	4 <sup>th</sup> Quarter 2002	242-S Evaporator	3 <sup>rd</sup> Quarter 2004
244-AR Vault	4 <sup>th</sup> Quarter 2002	242-T Evaporator	3 <sup>rd</sup> Quarter 2004
272 AW	4 <sup>th</sup> Quarter 2002	AP Tank Farm	4 <sup>th</sup> Quarter 2004
U Tank Farm	2 <sup>nd</sup> Quarter 2003	204 AR Vault	4 <sup>th</sup> Quarter 2004
T/TX/TY Tank Farms	2 <sup>nd</sup> Quarter 2003		

## **4.0 POTENTIAL STORAGE ISSUES**

This section discusses issues pertaining to storage of mixed waste.

### **4.1 STORAGE CAPACITY**

Potential storage capacity issues are addressed in Section 2.4 of the location-specific data sheets (Appendix B) and are summarized in the following sections.

#### **4.1.1 Bechtel Hanford, Inc.**

The only waste currently being stored long term by the Bechtel Hanford, Inc., Richland Environmental Restoration Project is at the B Plant Complex and the PUREX Plant. The waste is stored in these TSD units with lead regulator approval of the specific long-term surveillance & maintenance (S&M) plans in accordance with Section 8.0 of the Tri-Party Agreement Action Plan. The plans do not allow for storage of any additional waste in these TSD units. Bechtel Hanford, Inc. is establishing one additional storage location during calendar year 2002. The ERDF ROD is being amended to establish a staging area, within the ERDF boundary, that would be used to store waste from the 618-4 and 618-5 burial grounds until the waste is transported offsite to a treatment facility to stabilize the waste. Once the waste is treated to meet the ERDF waste acceptance criteria, the waste will be returned to ERDF for final disposal.

#### **4.1.2 CH2M HILL Hanford Group, Inc.**

Annually, in accordance with Tri-Party Agreement Milestone M-46-00, an evaluation is performed to determine available tank capacity and capacity needs for future years. This evaluation looks at waste receipts to the DST System for the past 12 months and makes projections based on trends that appear. A computer simulation of site operations (incoming waste projections and outgoing waste) is performed, which results in projections of tank fill schedules, tank transfers, evaporator operations, tank retrieval, and aging waste tank use. During this evaluation, the parties to the Tri-Party Agreement (Ecology, EPA, and DOE) determine whether new tanks need to be built. Current estimates indicate that the storage capacity of the DST System could be reached by 2010, depending on the sequence and rate of retrieval for waste currently stored in SSTs and on evaporator operations. Table 4-1 summarizes DST storage capacities and current volume stored.

Table 4-1. Potential Storage Capacity Issues.

Waste name	Tank farm	Estimated storage capacity per farm (m <sup>3</sup> )	Current amount of stored waste (m <sup>3</sup> )	Year capacity could be reached/bases and assumptions
DST Waste	241-SY	13,000	11,000	2010 <sup>1</sup>
DST Waste	241-AY	7,000	7,000	2010 <sup>1</sup>
DST Waste	241-AY	7,000	3,000	2010 <sup>1</sup>
DST Waste	241-AW	26,000	13,000	2010 <sup>1</sup>
DST Waste	241-AP	35,000	25,000	2010 <sup>1</sup>
DST Waste	241-AN	30,000	21,000	2010 <sup>1</sup>
	Total	118,000	80,000	

<sup>1</sup>This date is for the tank farms as a system and depends on the evaporator runs and the schedule/order of waste retrieval from SSTs.

The reported storage capacities includes all of the tanks. Tanks that were on the Watch List (Public Law 101-510) were not allowed to receive waste. Watch List Tanks will be evaluated to determine whether the capacity of the tank might be used to store additional waste, now that Watch List Tank safety issues have been resolved.

#### 4.1.3 Fluor Hanford, Inc.

The Solid Waste Projection Model is a discrete event simulation model; the model is used to project the TSD requirements of the onsite radioactive and mixed solid waste management program in the CWC. The model combines current waste inventories and forecasts of future waste receipts with baseline planning assumptions to determine TSD unit requirements throughout the anticipated life of the TSD units. The amount of waste is estimated using the following input:

- Amount of waste type in storage
- Amount of waste type sent for processing
- Amount of waste type disposed
- Amount of waste type shipped offsite for disposal.

The resulting estimates are used to make decisions concerning future TSD needs. For example, if the amount of waste in storage was projected to exceed the current capacity, planning for additional storage capacity could begin and/or changes could be made to the baseline treatment and disposal schedules to reduce the projected storage requirement.

The model is reviewed and updated frequently to ensure that the appropriate assumptions for waste treatment and facility capabilities and schedules, and therefore storage capacity, are adequate to effectively manage mixed waste. When changes occur in programmatic assumptions in response to budgetary or regulatory changes, the model is run again using the new assumptions.

The Hanford Site maintains a system for forecasting the amount of radioactive waste, including mixed waste, to be generated well into the future. This system is known as the SWIFT Report. Input to this system is maintained in a database updated periodically by all waste generating units. Significant changes to the input must be reported. These changes are evaluated for impact on the storage facilities as required.

Based on the projections to date, information on active FH-managed TSD units in this report indicates that no requirements for additional storage capacity exist within the 5-year forecast period and beyond. Figure 4-1 shows projected CWC waste storage versus capacity.

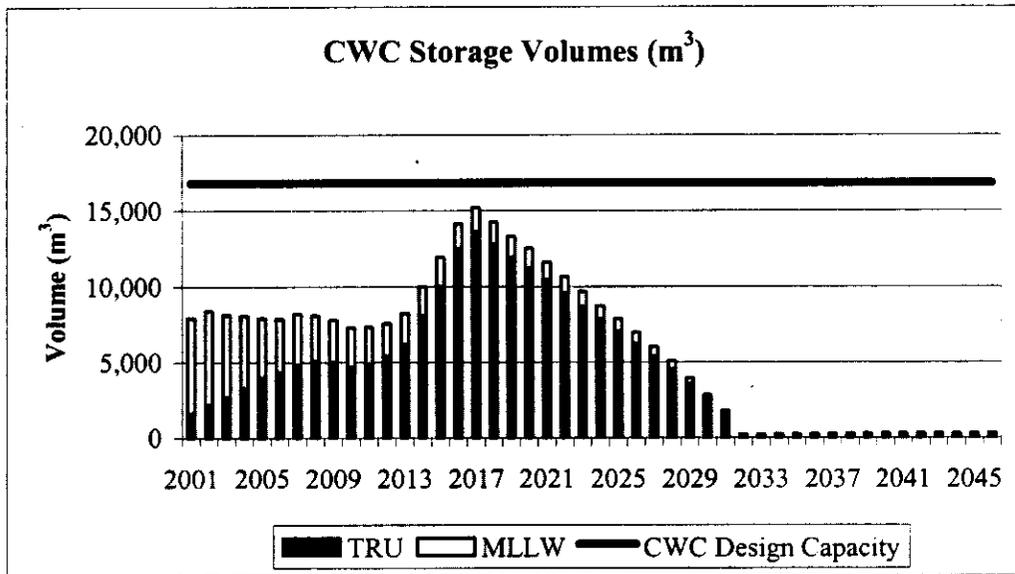


Figure 4-1. Central Waste Complex Waste Storage Versus Capacity.

#### 4.1.4 Pacific Northwest National Laboratory

PNNL uses the SWIFT reporting system to project storage requirements. Based on the projections to date, no requirements for additional storage capacity for PNNL-managed TSD units exist within the 5-year forecast period and beyond.

## 4.2 ISSUES AND THEIR RESOLUTION

No storage issues were identified for CY 2001 reporting. Storage capacity issues identified and resolved in the future will be reported in the year following their resolution.

## 4.3 PLANNED VARIANCES OR EXEMPTIONS FOR STORAGE

Requests for variances and other exemptions related to storage are addressed in Section 2.10 of the location-specific data sheets (Appendix B). No requests for variances are identified.

## 4.4 KEY STORAGE ASSUMPTIONS

Key assumptions related to storage, inventory, and generation information are addressed in Section 2.12 of the location-specific data sheets (Appendix B).

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## 5.0 WASTE RELEASES FROM STORAGE UNITS

Known releases from mixed waste storage units into the environment are subject to reporting in this report, whether or not the release was cleaned up. The only waste releases from storage to the environment have occurred from the SST System. Table 5-1 lists the names and locations of the SST farms and the number of tanks in each farm. No releases have been documented during this reporting period (CY 2001).

Table 5-1. Single-Shell Tank System.<sup>a</sup>

200 East Area		200 West Area	
Farm	Number of tanks	Farm	Number of tanks
A	6	S	12
AX	4	SX	15
B	16	T	16
BX	12	TX	18
BY	12	TY	6
C	16	U	16

<sup>a</sup> The capacity of the tanks ranges from 210 m<sup>3</sup> to 3,800 m<sup>3</sup>.

These tanks contain waste that was placed into the system between 1944 and 1980. The waste was generated as a byproduct of processing spent nuclear fuel to recover plutonium, uranium, and neptunium, and consists of radioactive and chemically hazardous waste. Except for cooling water, nothing has been added to the SSTs since 1980. Table 5-2 lists the Hanford Site SST System releases.

Table 5-2. Hanford Site Single-Shell Tank Releases.<sup>a</sup>

Tank	Volume (m <sup>3</sup> )	Leak reported	Tank	Volume (m <sup>3</sup> )	Leak reported
241-A-103	21	1987	241-SX-107	<19	1964
241-A-104	2 to 10	1975	241-SX-108	9 to 133	1962
241-A-105	38 to 1,048	1963	241-SX-109	38	1965, 1996
241-AX-102	11	1988	241-SX-110	21	1976
241-AX-104 <sup>b</sup>	--	1977	241-SX-111	2 to 8	1974
241-B-101 <sup>b</sup>	--	1974	241-SX-112	114	1969
241-B-103 <sup>b</sup>	--	1978	241-SX-113	57	1962
241-B-105 <sup>b</sup>	--	1978	241-SX-114 <sup>b</sup>	--	1972
241-B-107	30	1980	241-SX-115	189	1965
241-B-110	38	1981	241-T-101	28	1992
241-B-111 <sup>b</sup>	--	1978	241-T-103	<4	1974
241-B-112	8	1978	241-T-106	435	1973
241-B-201	5	1980	241-T-107 <sup>b</sup>	--	1984

Table 5-2. Hanford Site Single-Shell Tank Releases.<sup>a</sup>

Tank	Volume (m <sup>3</sup> )	Leak reported	Tank	Volume (m <sup>3</sup> )	Leak reported
241-B-203	1	1983	241-T-108	<4	1974
241-B-204	2	1984	241-T-109	<4	1974
241-BX-101 <sup>b</sup>	-	1972	241-T-111	<4	1979, 1994
241-BX-102	265	1971	241-TX-105 <sup>b</sup>	-	1977
241-BX-108	10	1974	241-TX-107	10	1984
241-BX-110 <sup>b</sup>	-	1976	241-TX-110 <sup>b</sup>	-	1977
241-BX-111 <sup>b</sup>	-	1984	241-TX-113 <sup>b</sup>	-	1974
241-BY-103	<19	1973	241-TX-114 <sup>b</sup>	-	1974
241-BY-105 <sup>b</sup>	-	1984	241-TX-115 <sup>b</sup>	-	1977
241-BY-106 <sup>b</sup>	-	1984	241-TX-116 <sup>b</sup>	-	1977
241-BY-107	57	1984	241-TX-117 <sup>b</sup>	-	1977
241-BY-108	<19	1972	241-TY-101	<4	1973
241-C-101	76	1980	241-TY-103	11	1973
241-C-110	8	1984	241-TY-104	5	1981
241-C-111	21	1968	241-TY-105	133	1960
241-C-201	2	1988	241-TY-106	76	1959
241-C-202	2	1988	241-U-101	114	1959
241-C-203	2	1984	241-U-104	208	1961
241-C-204	1	1988	241-U-110	19 to 31	1975
241-S-104	91	1968	241-U-112	32	1980
241-SX-104	23	1988			
Total range <sup>c</sup> 2,862 to 4,022 m <sup>3</sup>					

<sup>a</sup> After some tanks were declared to be leaking, water could have been added to aid evaporative cooling. It is believed that some of this water did not evaporate, but went into the ground. Estimates range from 190 m<sup>3</sup> to 3,000 m<sup>3</sup>. The volumes provided and date of initial release are the subject of continued evaluation and refinement; the numbers could be revised for improved accuracy as a result of the evaluation process. In addition, documents show that from 1946 to 1966, 456,700 m<sup>3</sup> (120,661,000 gal) of liquid waste intentionally were discharged from SSTs directly to the ground on the 200 Area Plateau (WHC-MR-0227 1991). The majority of this waste was discharged from 1946 to 1958 as a result of the early plutonium and uranium recovery processes conducted in the 221-B Facility (B Plant Complex), the 221-T Building (T Plant Complex), and the 221-U Facility (U Plant). In addition, from 1960 to 1966 laboratory waste from the 300 Area and equipment decontamination waste from the 200 West Area was routed through SSTs before being discharged to the ground. No waste has been discharged to the ground from SSTs intentionally since 1966, and no waste ever has been discharged directly to the ground from the DSTs.

<sup>b</sup> Individual release volumes for these tanks have not been determined. The total volume release from these tanks is estimated to be 570 m<sup>3</sup>.

<sup>c</sup> The total leak volume is presented as a range because some of the individual leak volumes were reported as ranges.

## **6.0 HANFORD SITE MIXED WASTE MINIMIZATION PROGRAM DESCRIPTION**

The *Hanford Site Waste Minimization and Pollution Prevention Awareness Program Plan* (Program Plan) (DOE/RL-91-31) provides waste minimization and pollution prevention direction and guidance for all Hanford Site contractors. The Program Plan specifies the requirements Hanford Site contractors must meet to prevent pollution from entering the environment; to conserve resources and energy; and to reduce the quantity and toxicity of hazardous, radioactive, mixed, and sanitary waste releases to the environment on the Hanford Site.

The Hanford Site *Guide for Preparing and Maintaining Pollution Prevention Program Documentation* (DOE/RL-95-103) provides guidance to onsite contractors for developing and maintaining documentation of pollution prevention and waste minimization activities.

### **6.1 MIXED WASTE MINIMIZATION PROGRAM**

All Hanford Site contractors that generate hazardous, mixed, and/or radioactive waste are required to have a waste minimization program plan. The documentation that must be maintained on file demonstrating compliance with the plan is described in the pollution prevention program guide (DOE/RL-95-103). The managers of waste-generating activities on the Hanford Site are required to certify, in writing, that they have a waste minimization program.

Waste minimization assessments are prepared to identify cost-effective techniques to reduce waste generation and pollutants. Hanford Site contractor personnel prepare proposals for reducing waste and show associated management costs for consideration by DOE-RL.

#### **6.1.1 Mixed Waste Minimization Program Objectives**

The objectives of the Hanford Site waste minimization program include the following:

- Promote the use of nonhazardous materials in operations to minimize the potential risks to human health and the environment
- Reduce or eliminate the generation of waste through input substitution, process modification, improved housekeeping, and closed-loop recycling to achieve minimal adverse effects to the air, water, and land
- Promote integration and coordination by waste generating units and waste managers on waste minimization matters.

#### **6.1.2 Waste Minimization Techniques**

Waste minimization techniques used on the Hanford Site include the following:

- Inventory management
- Maintenance programs
- Waste recycling and reuse

- Waste segregation
- Work planning, including process changes and material substitution.

The Hanford Site contractors implement these techniques individually in accordance with their internal waste minimization program. Waste minimization activities are ongoing. For further information for each waste, refer to location-specific data sheets (Appendix B).

## **6.2 MIXED WASTE MINIMIZATION ACCOMPLISHMENTS**

Waste minimization accomplishments on the Hanford Site during CY 2001 are listed in Table 6-1. The information from this table is summarized from the Hanford Intranet website called Electronic Reporting Forms for Waste Reduction Accomplishments and Status (FH). The website contains reporting forms and the database, which is maintained by the Hanford Site contractors in accordance with the existing regulatory requirements.

Table 6-1. Summary of Waste Minimization Accomplishments for CY 2001.

Program, Project, or Company	Waste stream	Waste type	Waste form	Waste source	Waste minimization approach	Amount (m <sup>3</sup> )	Estimated savings (\$)	Waste minimization activity
FH/222-S Laboratory/WSCF	IC	MLLW	Solid	Routine	Source reduction	0.08	1,560	Reduced the amounts of mixed waste generated by changing methodology for performance of ammonia analysis. Changed to ion chromatograph from direct analysis. This was implemented as a return on investment and will also reduce low-level waste.
BHI	Lead Bricks	MLLW	Solid	Non-routine	Recycling	2.7	9,420	2,592 lead bricks uncovered from the 100-H Rad Cave excavation were surveyed, released, and transferred to the local Community Reuse Organization for economic development.
PNNL	Radioactive Material Return.	MLLW	Liquid	Non-Routine	Recycling	0.000001	4,400	Unneeded radiotagged lindane was returned to the vendor for a \$700 credit, avoiding additional radioactive mixed waste disposal costs.
FH/200 Area Liquid Waste Processing Facilities	UP-1 Groundwater	MLLW	Solid	Non-routine	Source reduction	77.5	42,625	The amount of acid and caustic added to dryer feed batches has been reduced, thereby reducing the rate of secondary waste powder generation by 50 vol %. This operational change was first implemented in the spring of 1999. The accomplishment was first reported in FY 2001.
PNNL	Simulated Tank Soils Analysis Elementary Neutralization	MLLW	Liquid	Non-routine	Treatment	.001	94	Simulated Tank Soils Analysis TBG: Treatment by Generator performed on mixed waste removed hazard and downgraded waste to low-level waste.
PNNL	Release Monitors for excess	MLLW	Solid	Routine	Segregation	1.25	13,750	Monitors surveyed and unconditionally released for recycling through excess.

BHI Bechtel Hanford, Inc.  
 MLLW mixed low-level waste  
 PNNL Pacific Northwest National Laboratory

RPP River Protection Project  
 WESF Waste Encapsulation and Storage Facility  
 WMP Waste Management Project

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## 7.0 REFERENCES

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**APPENDIX A**

**LAND DISPOSAL RESTRICTIONS REPORTING REQUIREMENTS**

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## APPENDIX A

### LAND DISPOSAL RESTRICTIONS REPORTING REQUIREMENTS

The LDR reporting requirements and requirements of the Final Determination (Ecology, EPA 2000) are presented in Table A-1. Table A-1 is a crosswalk linking the requirements for this document to the location in the document where these requirements are addressed. Some of the items identified in the table were one-time requirements from the Final Determination that have already been met. For those items, the table indicates how the one-time requirements were closed out.

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Table A-1. Land Disposal Restrictions Requirements.

Item 1	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
1	1.a (1990) IV.3.A.1, pg 16 (FD) IV.3.A.1.a, pg 16 (FD) IV.3.A.1, pg 17 (FD) IV.3.A.3, pg 18 (FD) IV.3.B.a, pg 19 (FD) 23 items (Ltr)	Identification of mixed waste	<b>(STR):</b> 1.1 and 1.2 (TGDS), as well as 1.1 (LSDS). LDR mixed waste is presented by a combination of treatment path forward and storage location on the two types of waste stream data sheets. In addition, the Potential Mixed Waste Table (Appendix C) presents PMW that have the potential to be reported in the data sheets in future years, but currently are reported in a format that resulted from discussions with Ecology and EPA
2	1.a (1990) IV.3.A.1, pg 16 (FD) IV.3.A.1.a, pg 16 (FD) IV.3.B.a, pg 19 (FD)	Description of mixed waste	Identification and description are included as part of Items 3 through 11 of this table. <b>(STR):</b> 1.2 (TGDS) and portions of 3.0 (TGDS), as well as 1.3.1 (LSDS) and other portions of 1.0 (LSDS)
3	1.a (1990) IV.3.A.1.b, pg 16 (FD)	RCRA hazardous waste code	<b>(STR):</b> 3.3.2 (TGDS)
4	IV.3.A.1.c, pg 16 (FD)	Applicable LDR treatment standard(s) and underlying hazardous constituents	<b>(STR):</b> 3.3.2 (TGDS)
5	1.a (1990) IV.3.A.1, pg 16 (FD) IV.3.A.1.a, pg 16 (FD) IV.3.A.1.c, pg 16 (FD)	Process information necessary for waste identification and LDR determinations	<b>(STR):</b> 1.3 and 2.12 (LSDS), applicable profiles referenced in 1.2 (LSDS)
6	1.a (1990) IV.3.A.1.c, pg 16 (FD)	History of how the waste was generated	<b>(STR):</b> 1.3 and 2.12 (LSDS)
7	1.a (1990) IV.3.A.1.c, pg 16 (FD)	Source of the hazardous constituents	<b>(STR):</b> 1.3 and 2.12 (LSDS)
8	1.a (1990) IV.3.A.1.c, pg 16 (FD)	How the waste was managed before storage	<b>(STR):</b> 2.1.1 (LSDS)

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Table A-1. Land Disposal Restrictions Requirements.

Item <sup>1</sup>	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
9	1.a (1990) IV.3.A.1.c, pg 16 (FD)	General timeframe determination that serves to categorize when the waste was placed in storage	(STR): 2.1.2 and portions of 1.3 (LSDS)
10	1.a (1990) IV.3.A.1.d, pg 16 (FD)	Radioactivity type	(STR): 3.1.1 and 3.1.2 (TGDS).
11	1.a (1990) IV.3.A.1.e, pg 16 (FD)	Physical form of the waste	(STR): 3.2.1 and 3.3.2 (TGDS).
12	1.b (1990) IV.3.A.1.f, pg 16 (FD)	Quantity of waste	(STR): 2.1 (TGDS), as well as 2.3 (LSDS).
13	1.c (1990) IV.3.A.1.g, pg 16 (FD) IV.3.A.1, pg 17 (FD)	Physical location	(STR): 2.1 and 2.2 (LSDS)
14	1.c (1990) IV.3.A.1.g, pg 16 (FD)	Method of storage	(STR): 2.1 and 2.2 (LSDS).
15	1.c (1990) IV.3.A.1.g, pg 16 (FD)	List of areas permitted for storage	(STR): 2.5 (LSDS). A current list of the permitted storage units can be found at <a href="http://www.hanford.gov/rcra">http://www.hanford.gov/rcra</a> .
16	1.d (1990) IV.3.A.1.h, pg 16 (FD) IV.3.A.2, pg 17 (FD) IV.3.A.2, pg 17 (FD) IV.3.A.2, pg 17 (FD)	DOE assessment of the compliance status	(STR): 2.7 (LSDS), as well as in Chapter 3.0 of the LDR Storage Report.
17	IV.3.A.2, pg 17 (FD)	Notification of which DOE organization is responsible for assessment within 60 days of final determination issuance.	Timely notification was provided by a letter (French 2000) and attachment. (STR): Additional information is provided in Chapter 3.0.
18	IV.3.A.2, pg 17 (FD)	Procedure used for assessments must meet minimum regulatory requirements (WAC 173-303 and 40 CFR 265)	Timely notification was provided by a letter (French 2000) and attachment. Item complete.

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Table A-1. Land Disposal Restrictions Requirements.

Item	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
19	IV.3.A.2, pg 17 (FD)	Opportunity for Ecology review and comment must be provided while developing assessment schedules and procedures	Timely notification was provided by a letter (French 2000) and attachment. Item complete.
20	1.e (1990) IV.3.A.1.i, pg 17 (FD)	Identification of any releases	(STR): 2.9 (LSDS), as well as in Chapter 5.0.
21	1.f (1990) IV.3.A.1.j, pg 17 (FD)	Generation rates	(STR): 2.2 (TGDS), as well as 2.6 (LSDS), contains estimates for the next 5 years.
22	1.f (1990) IV.3.A.1.j, pg 17 (FD)	Estimate of the storage capacity	(STR): 2.4 (LSDS), and in the text of the LDR storage report, Section 4.1.
23	1.f (1990) IV.3.A.1.j, pg 17 (FD)	When storage capacity will be reached	(STR): 2.4 (LSDS), and in the text of the LDR storage report, Section 4.1.
24	1.f (1990) IV.3.A.1.j, pg 17 (FD)	Identification of the bases and assumptions used in making the estimate	(STR): 2.12 (LSDS), as well as Chapter 4.0 text when applicable.
25	1.g (1990) IV.3.A.1.k, pg 17 (FD)	Plans to submit requests for variances, case-by-case extensions of the LDR requirements, or other exemptions	(STR): 4.8 and 5.0 (TGDS), and 2.10 (LSDS), as well as in the text of the LDR Storage Report, Section 4.3.
26	2 (1990) IV.3.A.1.k, pg 17 (FD)	Provide for the submittal of requests for case-by-case extensions, variances, and other exemptions of the LDR requirements in accordance with Section 3004 of RCRA	(STR): 4.8 and 5.0 (TGDS), and 2.10 (LSDS), as well as in the text of the LDR Storage Report, Section 4.3.
27	3 (1990) IV.3.A.3.a, pg 19 (FD) IV.3.A.3.a, pg 19 (FD)	Plan and schedule to characterize all waste	(STR): 2.11 (LSDS). (C&T): In the text of Chapter 3.0 and Chapter 7.0.
28	IV.3.A.3, pg 19 (FD)	Reporting of waste characterization plan must delineate steps necessary to confirm which streams are subject to LDR	(STR): The Potential Mixed Waste Table (Appendix C) identifies waste that potentially is mixed, and negotiate a path forward. Any new waste determined to be LDR mixed waste is added to the report, as stated in the report text, Section 1.3.

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Table A-1. Land Disposal Restrictions Requirements.

Item <sup>1</sup>	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
29	3 (1990) IV.3.A.3, pg 19 (FD)	Report characterization results to EPA and Ecology	<b>(STR):</b> 3.0 (TGDS), and 2.11 (LSDS); <b>(C&amp;T):</b> Reporting of results has been according to protocol established in the Tri-Party Agreement, Section 9.6. This annual LDR report has this process summarized in of Chapter 2.0.
30	3 (1990)	Steps necessary to confirm which waste and which waste streams are subject to the LDR	<b>(STR):</b> The Potential Mixed Waste Table (Appendix C) identifies waste that potentially is mixed waste, and negotiate a path forward. Any new waste determined to be LDR mixed waste is added to the report, as stated in Section 1.3.
31	4.a (1990)	Treatment and disposal technologies	<b>(STR):</b> 4.2 and 4.3 [also 3.3.2] (TGDS) for treatment, and in 5.0 (TGDS) for disposal. <b>(C&amp;T):</b> Existing treatment technologies and processes are discussed in Sections 3.1, 4.1, and 5.1. Processes needing adaptation are discussed in Sections 3.2, 4.2, and 5.2. Disposal processes are discussed in Sections 3.5, 4.4, 5.5, and 5.6.
32	4.a (1990)	Treatment capacity	<b>(STR):</b> 4.3 (TGDS). <b>(C&amp;T):</b> In the text and tables of Chapters 3.0, 4.0, and 5.0.
33	4.b (1990)	Commercial treatment technologies	Same as the portion of Item 33 of this table regarding treatment. <b>(STR):</b> 4.2 and 4.3 [also 3.3.2] (TGDS). <b>(C&amp;T):</b> In the text and tables of Chapter 3.0 where applicable for treatment.
34	4.b (1990)	Capacity currently available	Similar to Item 34 of this table. <b>(STR):</b> 4.3 (TGDS). <b>(C&amp;T):</b> In the text and tables of Chapters 3.0, 4.0, and 5.0.

Table A-1. Land Disposal Restrictions Requirements.

Item <sup>1</sup>	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
35	4.c (1990)	DOE treatment technologies	Same as the portion of Item 33 of this table regarding treatment. (STR): 4.2 and 4.3 [also 3.3.2] (TGDS). (C&T): In the text and tables of Chapters 3.0, 4.0, and 5.0 where applicable for treatment.
36	4.c (1990)	Extent of capacity currently available	Same as Item 36 of this table. (STR): 4.3 (TGDS). (C&T): In the text and tables of Chapters 3.0, 4.0, and 5.0.
37	4.d (1990)	Whether any new commercial or DOE treatment capacity is scheduled to be available	Similar to Items 36 and 38 of this table. (STR): 4.3 (TGDS). (C&T): In the text and tables of Chapters 3.0, 4.0, and 5.0.
38	4.d (1990)	When such new capacity will be available	(STR): 4.4, sometimes 4.5 (TGDS). (C&T): In the text and tables of Chapters 3.0, 4.0, and 5.0.
39	4.e (1990)	Alternate technologies which are in development and which may be used to manage these LDR wastes	(C&T): In the text and tables of Chapters 3.0, 4.0, and 5.0.
40	4.e (1990)	Assessment of when such alternate technologies may become available	(C&T): In the text of Chapters 3.0, 4.0, and 5.0.
41	4.f (1990)	Basis and assumptions used	(STR): 4.9 (TGDS). (C&T): Discussed as applicable in the text and tables of Chapters 3.0, 4.0, and 5.0.
42	4.f (1990)	Foreseeable contingencies	(STR): 4.9 (TGDS). (C&T): In the text and tables of Chapters 3.0, 4.0, and 5.0. as applicable.

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Table A-1. Land Disposal Restrictions Requirements.

Item 1	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
43	5 (1990) IV.3.A.3, pg 18 (FD)	Milestones and schedules for the development and implementation of treatment technologies	<b>(STR):</b> 4.4, 4.5, and 4.6 (TGDS). <b>(C&amp;T):</b> Applicable milestones and treatment plans are identified by treatment process in Chapters 3.0, 4.0, and 5.0. Existing Tri-Party Agreement milestones and proposed milestones related to LDR are presented in Chapter 9.0 of the C&T plan.
44	5 (1990) IV.3.A.3, pg 18 (FD) IV.3.A.3.a, pg 18 (FD)	All applicable milestones and associated schedules for developing and implementing treatment or management technologies	<b>(STR):</b> 4.4, 4.5, and 4.6 (TGDS). <b>(C&amp;T):</b> Applicable milestones and treatment plans are identified by treatment process in Chapters 3.0, 4.0, and 5.0. Existing Tri-Party Agreement milestones and proposed milestones related to LDR are presented in Chapter 9.0 of the C&T plan.
45	IV.3.A.3.a, pg 18 (FD)	Schedules for submitting applicable permit applications, initiating construction, conducting systems testing, commencing operations, and processing backlogged and currently generated waste, for those waste types for which treatment technologies exist	<b>(STR):</b> 4.4, 4.5, and 4.6, (TGDS). <b>(C&amp;T):</b> Applicable schedules are identified by treatment process in Chapters 3.0, 4.0, and 5.0. Existing Tri-Party Agreement milestones and proposed milestones related to LDR are presented in Chapter 9.0 of the C&T plan.
46	IV.3.A.3.b, pg 18 (FD)	Schedules for identifying and developing treatment technologies for those waste types for which <b>no</b> treatment technologies currently exist, to include identification of funding requirements for the identification and development of such technologies, submitting treatability study exemptions, and submitting research and development permit applications	<b>(STR):</b> 4.4, 4.5, and 4.6, (TGDS). <b>(C&amp;T):</b> Applicable schedules are in Chapters 3.0, 4.0, and 5.0. Existing Tri-Party Agreement milestones related to LDR are presented in Chapter 9.0 of the C&T plan. Information on plans to develop treatment technologies that do not currently exist are presented in the <i>Hanford Site Technology Needs</i> <sup>5</sup> and in HNF-4293-1.
47	IV.3.A.3.c, pg 18 (FD)	Requirements for all cases where DOE proposes radionuclide separation of mixed waste or materials derived from mixed waste	<b>(C&amp;T):</b> The only current or planned radionuclide separations are during treatment of liquid waste in ETF (Section 3.4) and treatment of DST and SST Systems waste (Section 5.3).

Table A-1. Land Disposal Restrictions Requirements.

Item <sup>1</sup>	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
48	6 (1990)	Provide that DOE may treat LDR waste in accordance with applicable law in advance of approved milestone dates	Activities always can be completed in advance of the milestone date, and are whenever possible. However, budget constraints are a reality and sometimes have an impact on the ability to even meet existing milestones.
49	IV.3.A.3, pg 18 (FD)	Propose milestones and associated schedules for known waste not covered by the report to be incorporated and established in accordance with the Tri-Party Agreement Action Plan (Section 12)	(STR): 4.6 (TGDS). All known waste types are covered in the LDR report (TGDS and LSDS). Potential mixed waste is presented in the Potential Mixed Waste Table (Appendix C). (C&T): Chapters 3.0, 4.0, 5.0, and 7.0.
50	7 (1990)	Identified methods for minimizing the generation of LDR waste	(STR): 3.2 (LSDS), as well as the text in Chapter 6.
51	7 (1990)	Process changes that can be made to reduce or eliminate LDR waste	(STR): 3.2 (LSDS), as well as the text in Chapter 6.0.
52	7 (1990)	Methods to minimize the volume of regulated and restricted waste through segregation and avoidance of commingling	(STR): 3.2 (LSDS), as well as the text in Chapter 6.0.
53	7 (1990)	Substitution of less toxic materials for materials currently used at the Hanford Site	(STR): 3.2 (LSDS), as well as the text in Chapter 6.0.
54	7 (1990)	Schedule for implementing waste minimization procedures	(STR): 3.3.2 and 3.3.3 (LSDS).
55	7 (1990)	Projections for reducing newly generated waste	(STR): 3.3.2 (LSDS).
56	7 (1990)	Basis for developing projections	(STR): 3.3.3 (LSDS).
57	7 (1990)	Assumptions used in developing the projections	(STR): 3.3.3 (LSDS) as well as the text in Chapter 6.0. The Hanford Site contractors issue periodic waste minimization plans, separate from the LDR report, and have waste minimization assessments for each applicable facility.

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Table A-1. Land Disposal Restrictions Requirements.

Item 1	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
58	7 (1990)	Annually revise and submit as part of the annual report that portion of the storage report associated with Item 1 of this table, to conform with the generation projections contained in the Waste Minimization Plan	The LDR report is revised annually, including the waste minimization content.
59	7 (1990)	As part of the annual report, DOE shall submit an amendment to the Waste Minimization Plan	Same as Item 60 of this table. The LDR report is revised annually, including the waste minimization content.
60	7 (1990)	Annually, DOE shall revise and submit that portion of the Storage Report associated with Item 1 (and the "1990" reference) of this table, to conform with generation projections contained in the update to the Waste Minimization Plan	Same as Item 60 of this table. The LDR report is revised annually, including the waste minimization content.
61	IV.3.A.3, pg 18 (FD) IV.3.A.3, pg 18-19 (FD)	The annual LDR report must include a waste characterization plan and associated schedules based on the waste identified in accordance with the final determination.	(C&T): Chapter 7.0
62	8 (1990)	Describe how information, plans, and schedules contained in the LDR Plan will be updated as part of the annual report	(STR): Section 1.3
63	8 (1990)	Describe how and when the LDR Plan will be revised and reissued	(STR): Explained briefly in Section 1.3. The annual LDR report evolved from, and is based on, the original LDR document, which was called the LDR Plan. Therefore, the 'Plan' essentially is revised and submitted each year.
64	IV.3.B.c, pg 19 (FD)	Each waste stream has an associated statement by DOE documenting whether sufficient work has been performed for continued compliance	No longer applicable, as a result of Pollution Control Hearings Board stipulations.

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Table A-1. Land Disposal Restrictions Requirements.

Item 1	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
65	IV.3.B.d, pg 19 (FD)	The Annual LDR report will serve as a vehicle to propose schedules for newly discovered or to be generated mixed waste not yet covered by the report or the Tri-Party Agreement	Newly identified waste has been and continues to be added to the report each year, subject to scope of the report and waste stream definition. Proposed schedules are incorporated for all waste streams where applicable. The Potential Mixed Waste Table (Appendix C) covers material that might become mixed waste in the future.
66	IV.3.B.e, pg 19 (FD)	Annual LDR report will serve as vehicle to propose modified Tri-Party Agreement schedules as necessary to achieve compliance with LDR treatment requirements in a manner equivalent to STPs as required by FFCA	<b>(C&amp;T):</b> While the annual report can identify the need for modifications of current Tri-Party Agreement schedules, such changes are established via the Tri-Party Agreement, Chapter 12.0 (Action Plan). This report contains milestones that are proposed in change request(s) as Tri-Party Agreement milestones.
67	IV.3.A.3.a, pg 19 (FD)	Proposed plans and schedules to sufficiently characterize mixed waste, including an inventory of mixed waste not sufficiently characterized by sampling and analysis	<b>(STR):</b> 2.11 (LSDS) as well as the Potential Mixed Waste Table (Appendix C) for potential mixed waste. <b>(C&amp;T):</b> Section 3.3.1.
68	IV.3.B.b, pg 19 (FD) IV.3.B.f, pg 20 (FD)	LDR report will be published as a primary document and will propose new waste streams as necessary	<b>(STR):</b> Signature page states that this report is a primary document, and explained briefly in Section 1.3. New waste streams are included as identified. Section 1.1.
69	IV.3.B.b, pg 19 (FD)	LDR report will support equivalency to FFCA STPs	While not identical to an STP, the LDR report is equivalent to an STP. The basis format for the C&T is the same as for an STP. <b>(STR):</b> Section 1.4 <b>(C&amp;T):</b> Section 1.0
70	IV.3.B.c, pg 19 (FD)	LDR report will serve as unified sitewide document detailing requirements of LDR Requirements Document <sup>2</sup>	This table delineates how the LDR report meets these requirements; refer to all items in second column of this table marked with "(1990)"

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Table A-1. Land Disposal Restrictions Requirements.

Item <sup>1</sup>	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
71	IV.3.B.c, pg 19 (FD)	LDR report will report DOE actions planned and taken to achieve and maintain full compliance with LDR and associated Tri-Party Agreement requirements in effect as of LDR report submittal date	This table delineates how the LDR report meets these requirements, refers to all items in second column of this table. The report shows planning for LDR characterization, treatment, and other actions. Section 1.5 of the STR is an accomplishments section.
72	IV.3.B.f, pg 20 (FD)	Inclusion of specific statement regarding the LDR report being a primary document, and regarding binding and enforceable nature of contents: "This document has been prepared, submitted, revised and approved as a primary document in response to the requirements of Tri-Party Agreement Milestone Series M-26-01 and related RCRA Land Disposal Restriction (LDR) and Tri-Party Agreement requirements. As such, this document serves as a binding and enforceable document under the Tri-Party Agreement."	The signature page states that this report is a primary document and includes the required language. Editorial changes have been made to the text.
73	IV.3.B.f, pg 20 (FD)	Inclusion of specific statement regarding approval by DOE and Ecology: "Approval of DOE's annual LDR Report as a Tri-Party Agreement primary document shall be by written approval of DOE and Ecology IAMIT representatives." Signature blocks are to follow the above statement.	The signature page states that this report is a primary document, and includes signature blocks. Editorial changes have been made to the text.

Table A-1. Land Disposal Restrictions Requirements.

Item 1	Section ID <sup>2</sup>	Requirement <sup>3</sup>	Location of information <sup>4</sup>
74	IV.3.C, pg 20 (FD)	The LDR report submitted in 2000 is an interim report documenting known information, and detailing actions planned to fully comply with the final determination.	This item does not contain a requirement for this report, and therefore is not applicable as a calendar year 2000 report content requirement. DOE/RL-2000-39 in Chapter 7.0 of the report references the Interim LDR Report.

<sup>1</sup>Item number supplied for the convenience of the reader.

<sup>2</sup>The notation "(1990)" refers to the four-page "Requirements for the Hanford LDR Plan"(LDR Requirements Document) signed by EPA and Ecology in 1990. The notation "(FD)" refers to the "Director's Final Determination" issued by Ecology on March 29, 2000. The notation "(Ltr)" refers to the January 25, 2000 clarification letter from Ecology delineating the wastes required to be reported.

<sup>3</sup>The text in this column is a brief summary of the requirement(s).

<sup>4</sup>The information in this column refers to the location of the information within this annual LDR report; the term "(STR)" refers to the LDR Storage Report, and the term "(C&T)" refers to the LDR Characterization and Treatment Plan. For information presented on the data sheets of Appendix B, LDR Storage Report, "(TGDS)" refers to the treatability group data sheet, and "(LSDS)" refers to the location-specific data sheet. A brief description of how the two types of data sheets are related can be found in Section 1.2 of the LDR Storage Report (see also Figure B-1 of Appendix B)

<sup>5</sup>FY 2000 Hanford Site Technology Needs, available on the Internet at <http://www.pnl.gov/stcg/fy00needs/technology/index.stm>.

C&T	Characterization and Treatment Plan	PUREX	plutonium-uranium extraction
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act of 1976
CWC	Central Waste Complex	STP	Site Treatment Plan
DOE	U.S. Department of Energy	STR	Storage Report
Ecology	Washington State Department of Ecology	Tri-Party Agreement	Hanford Federal Facility Agreement and Consent Order
EPA	U.S. Environmental Protection Agency	TGDS	treatability group data sheet
FD	Final Determination	TSD	treatment, storage, and/or disposal
FFCA	Federal Facility Compliance Agreement	WAC	Washington Administrative Code
LDR	land disposal restrictions	WRAP	Waste Receiving and Processing Facility
LSDS	location-specific data sheets		

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**APPENDIX B**

**WASTE STORAGE REPORT DATA SHEETS**

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**APPENDIX B**

**WASTE STORAGE REPORT DATA SHEETS**

**Relationship Between LDR Treatability Group and Location-Specific Data Sheets**

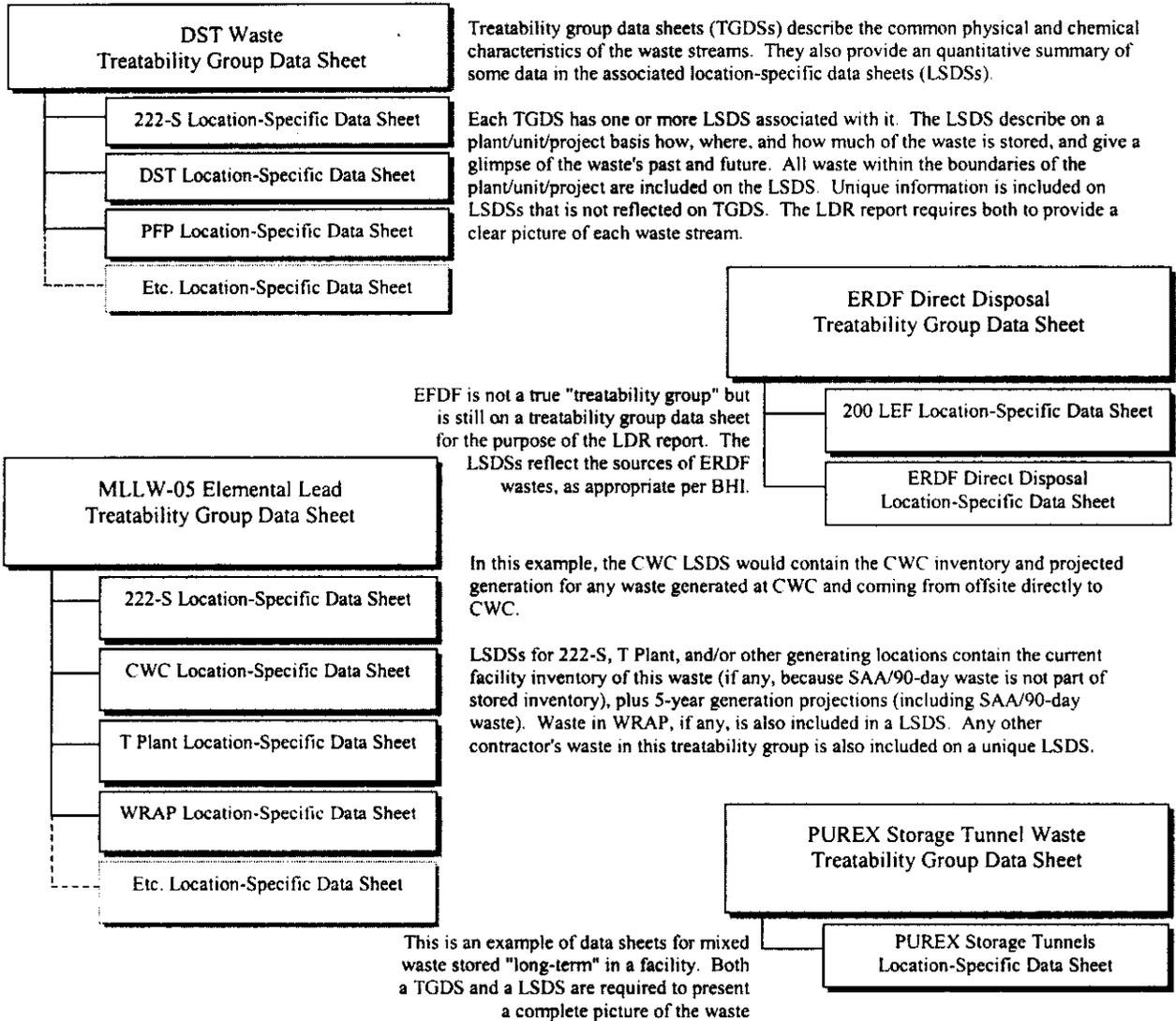


Figure B-1. Example Relationship Between Location-Specific and Treatability Group Data Sheets.

Each treatability group data sheet is followed by one or more location-specific data sheets that fall within that treatability group. Refer to Figure B-1 of this document for details of how the two types of sheets relate to each other. Refer to Table B-1 of this document for the index of data sheets.

## **GENERAL INSTRUCTIONS FOR ALL DATASHEETS:**

The basis for LDR reporting in this document is CY 2001, unless stated otherwise. Note that all information in these data sheets is considered enforceable under the Tri-Party Agreement.

### **B1.0 TREATABILITY GROUP DATA SHEET DATA FIELD DESCRIPTIONS**

The following items are numbered to correspond to the numbers on the treatability group data sheets (i.e., the numbers refer to the data field locations in the data sheets). The numbers have no relation to their position in this document appendix.

#### **1.0 Waste Stream Identification**

**1.1 Treatability group/aggregated stream identifier:** Uniquely identifies the waste stream treatability group.

**Treatability group/aggregated stream name:** Supplies a short, descriptive name for the waste stream treatability group.

**1.2 Description of waste (list WSRd [waste specification record] numbers for this waste stream, as applicable):** Briefly describes the physical contents of the stream. WSRd numbers indicate a waste treatment and/or disposal pathway, and are used principally for waste stored at the CWC or received from offsite. Note that the grouping of waste into a treatability group can be based on any of the following: proposed treatment technology, storage location, or waste source.

#### **2.0 Waste Stream Inventory and Generation**

**2.1 Current total inventory for this stream (stored waste only, not accumulation areas). Total volume (cubic meters):** Automatically summed from stored inventory reported in individual location-specific data sheets contributing to this treatability group.

**2.2 Estimated generation projection by calendar year:** Listed by year, and m<sup>3</sup> and/or kg: Also automatically summed, as discussed above in Section 2.1 for the treatability group data sheet.

#### **3.0 Waste Stream Characterization**

##### **3.1 Radiological characteristics**

**3.1.1 Mixed waste type.** Lists three options in a multiple-choice format. The box chosen indicates radiological classification (either high-level, transuranic, or low-level).

**3.1.2 Handling (as currently packaged/stored).** Lists two options in a multiple-choice format. The box chosen differentiates between contact- and remote-handled waste types. The choice made reflects the waste as if no longer packaged for storage, but instead as if it were unpackaged and ready for the first step of treatment.

**3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):** Provides space for explanatory information on radiological characteristics of the waste that cannot be supplied in the multiple-choice format used in previous sections of this data sheet. (Refer to explanations above for previous sections of the treatability group data sheet.)

### **3.2 Matrix characteristics (physical content)**

**3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass).** Amplifies the waste description given in Section 1.2 of the treatability group data sheet. The column under the heading "Matrix Parameter Category Code" indicates the appropriate treatability group code (e.g., S5320) from *DOE Treatability Group Guidance*, DOE/LLW-217. The column under the heading "Matrix Constituent Description" lists the name associated with the applicable matrix parameter category code (e.g., wood debris). For some streams, one entry covers 100 percent of the waste. However, for the waste streams which are not covered by one entry, the column heading "Typical or range (%)" lists the estimated percentage of the waste stream that fits into a particular category.

**3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:** Provides a multiple choice subjective judgment of how accurately the physical contents of the waste are known based on the data discussed in Section 3.2.1 of the treatability group data sheet. Information can be ranked "low", "medium", or "high". For example, a drum that has not been inspected might be ranked as a "low" confidence level.

**3.2.3 Comments on matrix characteristics and/or confidence level:** Provides space for further information on matrix characteristics of the waste stream and on the confidence level that cannot be supplied in the formats for the previous two sections of the treatability group data sheet.

### **3.3 Regulated contaminated characteristics**

**3.3.1 Wastewater/non-wastewater under RCRA.** Lists three options in a multiple-choice format. The box chosen indicates whether, under federal LDR requirements, the waste stream is considered wastewater, non-wastewater, or is of an unknown type. This does not apply for state-only dangerous waste.

**3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable.** Provides the following information in a table. Note that underlying hazardous constituent (UHC) information is included in this table. Footnotes provide further explanation for the table, as applicable:

- The EPA or state-only "EPA/State numbers" indicate the listed or characteristic waste numbers such as D001, F005, etc. Note that not all waste numbers listed in the table for waste reported on any particular treatability group data sheet will be applicable to all subcategories of waste in the treatability group (nor, therefore, will all waste numbers apply to each location-specific data sheet contributing to a particular treatability group). Note also that for waste for which more than one subcategory applies, the waste number appears in this table once for each of the applicable LDR subcategories.
- The "Waste description" indicates the characteristics of the waste or contaminants of concern (e.g., "ignitable" or "methyl ethyl ketone").

- The “LDR subcategory” indicates any applicable subcategory of the assigned waste number (e.g., “corrosive characteristic waste” or “radioactive high level waste” for D002). The LDR subcategory applies only to D001 through D011. Some data sheets could show the contaminant of concern in this field for F-coded waste. Note that if more than one subcategory applies, the waste number appears in this table once for each of the applicable LDR subcategories.
  - “Concentration (typical or range)” of the contaminant, if known, is included in the table as a range or a single value. In some cases, the concentration might not be known; in that case, this field is labeled “TBD” or explained with a note elsewhere in the data sheet.
  - “Basis” explains how the concentration information was determined (i.e., “process knowledge” and/or “analytical data”).
  - The final column, “LDR Treatment Concentration Standard or Technology Code”, lists either the regulatory-required method for treating the waste, or the required final concentration, as obtained from the applicable regulations. Note that transuranic waste is a special case.
- 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards.** Lists three multiple choice options that emphasizes required treatment if applicable.
- 3.3.4 Does this waste stream contain PCBs?** Lists three options regarding PCB content in a multiple-choice format. The basis for the choice made can be process knowledge or laboratory analysis.
- 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?** Implies applicability as determined by *Toxic Substance Control Act* (TSCA) regulations.
- 3.3.4.2 Indicate the PCB concentration range (ppm).** Lists three options in a multiple choice format for reporting the appropriate PCB concentration range.
- 3.3.5 What is the confidence level for the regulated contaminant characteristic data?** Lists three options in a multiple-choice format. This assigns a subjective rating to the accuracy of the information presented on contaminants, waste numbers, etc.
- 3.3.6 Comments on regulated contaminant characteristics and/or confidence level:** Provides space for explanatory information on regulated contaminant characteristics of the waste stream and confidence in the accuracy of the information that cannot otherwise be supplied in the format provided for the other sections of the treatability group data sheet.
- 4.0 Waste Stream Treatment**
- 4.1 Is this stream currently being treated?** Lists two options in a multiple-choice format. The appropriate treatment box is checked. Details are provided if treatment currently is under way.
- 4.2 Planned treatment.** Lists four options in a multiple-choice format. The appropriate box is checked to indicate the status of existing plans for treating the waste to meet applicable regulations.

- 4.3 Planned treatment method, facility, and extent of treatment capacity available:** Describes details of planned treatment for onsite treatment, storage, and/or disposal (TSD) units and offsite facilities, as well as details of how much of the required treatment capacity is available.
- 4.4 Treatment schedule information:** Provides space to include such information as start date of treatment, end date of treatment, and how much waste will be treated each year. Either treatment schedule information or other schedule-related information is provided, or if none exists as of the status reporting date for the treatability group, the current status of any active negotiations or applicable actions are described instead.
- 4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):** Provides space to list appropriate existing milestone numbers related to treatment.
- 4.6 Proposed new Tri-Party Agreement treatment milestones:** Provides space to list appropriate proposed new treatment milestones. If applicable, make reference to any active negotiations.
- 4.7 If treating or planning to treat onsite, was or will waste minimization be addressed in developing and/or selecting the treatment method?** Three options for a multiple choice answer are provided to describe any waste minimization plans for the waste during treatment. **If yes, describe:** Self-explanatory.
- 4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:** Space provided for supplying details of any existing or future treatability variances (40 CFR 268.44), equivalency petitions (40 CFR 268.42(b)), rulemaking petitions (WAC 173-303-910, 40 CFR 260.20), and case-by-case exemptions [WAC 173-303-140(6)].
- 4.9 Key assumptions:** Provides space to list assumptions concerning treatment that cannot otherwise be supplied in the format provided.
- 5.0 Waste Stream Disposal**
- 5.0 After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?** Provides space to describe disposal methods, locations, variances required, etc., as applicable.

## **B2.0 LOCATION-SPECIFIC DATA SHEET DATA FIELD DESCRIPTIONS**

The following items are numbered to correspond to their numbers on the location-specific data sheets (i.e., the numbers refer to the data field locations in the data sheets). The numbers have no relation to their position in this document appendix. Note that the term "storage" is used throughout the location-specific data sheets based upon the definition of WAC 173-303-040. "Accumulation" is not considered "storage".

### **1.0 Waste Stream Identification and Source**

- 1.1 Plant/unit Name:** Uniquely identifies the generating location of the waste.  
**Waste Stream.** Supplies a short, descriptive name for the waste.  
**Treatability/Aggregated Group Identifier.** Identifies the waste treatability group to which the waste is assigned.

**Treatability/aggregated group name.** Supplies the short, descriptive name for the waste treatability group to which the waste described in the particular location-specific data sheet is assigned.

**1.2 Applicable profile number(s) for this waste stream:** Lists waste profile numbers applicable to the waste if any. Waste profile numbers are used principally for waste that is transferred to the CWC or that is received from offsite generators.

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill cleanup waste, discarded lab materials, maintenance waste):** Describes where the waste came from, the general matrix, and contaminants.

**1.3.2 History of how and where the waste was/is generated:** Describes how, why, and where the waste was generated.

**1.3.3 Source of the hazardous constituents.** Describes how the hazardous constituents came to be in the waste.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.).** Information sources include analytical data, process knowledge, document number, etc.

**1.3.5 Additional notes:** Includes any information that would be helpful in identifying the waste and its generation.

**2.0 Waste Stream Storage, Inventory, and Generation Information**

**2.1 Current storage method.** Lists three options in multiple choice format to describe the type of storage used. No box is chosen if the waste reported on the data sheet is being managed in accumulation areas only. Note that as used here, "container (pad)" indicates drums or other containers such as boxes that are sitting on a concrete or other pad or area; "container (covered)" indicates drums or other containers such as boxes sitting under a roof or inside a building.

**2.1.1 How was the waste managed prior to storage?** Describes routine and special management of the waste. Note: For waste in accumulation areas, the answer provided is "NA".

**2.1.2 Timeframe when waste was placed into storage:** Supplies the date or dates the waste was placed in storage (waste storage history). Examples might be, "This waste has been generated and stored at this location from 1987 to the present" for waste continuously generated and stored, or "The waste currently in storage was generated in 1999" for waste no longer generated and stored. Note: For reporting of waste in accumulation areas, the answer provided is "NA".

**2.2 Inventory locations:** Lists the building and room number with the number of storage containers/tanks for each storage location. Note: This section of this data sheet does not include satellite or 90-day accumulation areas. For reporting of waste in accumulation areas, the answer provided is "NA".

**2.3 Current inventory for this stream (stored waste only, not accumulation areas).** Volume of waste (cubic meters) and reporting date of the volume is supplied. The default reporting date is December 31, 2001. In some cases, the date shown will be different if the

volume is known only for another date. The volume information for each location-specific data sheet is summed to the reported volume for its associated treatability group data sheet. Note that for reporting of waste in accumulation areas, the answer provided here should be "NA". Accumulated waste volume is reported only in Section 2.6 of the location-specific data sheet as an estimated generation projection, as applicable. Note also that the precision implied by the number of digits displayed on the data sheets frequently is an artifact of the database design, which is constructed to allow input of a standard 0.208 m<sup>3</sup> drum or even smaller quantities. For example, if 42.400 is shown, the last two zeros are not necessarily significant. This also applies to Section 2.6 of the location-specific data sheet, "Estimated generation ... ."

- 2.4 Is storage capacity at this location potentially an issue for this waste stream?** The two multiple choice options are "yes" and "no." **If "yes," what is the total estimated storage capacity?** Self-explanatory. **When is this capacity expected to be reached?** Self-explanatory. **Bases and assumptions used:** Lists any bases and assumptions used in estimating storage capacity limitations. Note: For waste reported in accumulation areas, mark "NA".
- 2.5 Planned management areas for storage of this waste:** Types of storage areas are provided in a multiple-choice format. More than one choice could apply. If the waste was in its current location as of 12/31/01, or will remain in its current location for a finite period of time, the "current location" box in addition to any other known planned storage location indicates where the waste is intended to be stored.
- 2.6 Estimated generation projection by calendar year:** Lists the next 5 years and the estimated volume (m<sup>3</sup>) or mass (kg) of the waste. Waste generated from accumulation areas reported in a data sheet is accounted for in the appropriate year's forecast. Note that the precision implied by the number of digits displayed on the data sheets frequently is an artifact of the database design, which is constructed to allow input of a standard 0.208 m<sup>3</sup> drum or even smaller quantities. For example, if 42.400 is shown, the last two zeros are not necessarily significant. This also applies to Section 2.3 of the location-specific data sheet, "Current inventory ... ."
- 2.7 DOE Storage Compliance Assessment information:** Three options are provided in a multiple choice format. The chosen option shows whether the assessment either has been or will be completed, and references the appropriate assessment end date or planned assessment date; or, it explains why neither of the other two options is an appropriate answer. For accumulation areas, or waste that has not been generated, check the "other" box and insert "NA" for the explanation.
- 2.8 Applicable Tri-Party Agreement milestones related to storage at this location:** Lists any applicable Tri-Party Agreement milestone(s) for storage. "NA" indicates that this question is not applicable (i.e., waste is only in accumulation areas), and "None" indicates that waste is stored (not accumulated), but has no associated milestones to be reported. For TSD units, identifying the M-20 milestone is appropriate.
- 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?** Two options in a multiple choice format are provided -- "yes" and "no" -- to report known spills, such as those reported in accordance with WAC 173-303-145, and -360 and the tank waste release status reports. This applies to mixed waste only, not to the processes that generate the waste or to non-RCRA waste. Note: For waste reported in accumulation areas, the answer provided is "NA". **If yes, summarize releases and quantities and provide date:** Self-explanatory.
- 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?** Two options are provided in a multiple choice format, "yes" and "no." **If yes, explain:**

If "yes" is chosen, an explanation is provided. (Variances and/or exemptions associated with waste treatment are addressed in treatability group data sheets, Section 4.8.)

- 2.11 Is further characterization necessary?** Three options are provided in a multiple choice format, "yes," "no," and "unknown at this time." Answer the question as if further information needed about the waste before acceptance for Treatment, Storage, or Disposal? Answer TSD question separately so that there could be three different answers: one for storage, one for treatment, and one for disposal.

The three possible answers will remain the same as the existing question: Yes, No, and Unknown at this time. Since the database only allows one answer, mark one answer only if there is one answer to all three aspects of the question (TSD). If there is more than one answer, leave all three boxes blank and rely on the explanation area of 2.11. Use the explanation area of question 2.12 if additional space is necessary.

**If yes, provide details and schedule (also see treatment/characterization plan volume for further information):** If the answer is Yes, an explanation of the answer is required. The explanation either will reference an existing milestone or agreement to obtain the information, reference active negotiations addressing the commitment, include a commitment to obtain the information, or the text will describe why a commitment is not necessary. The following are examples of information needs that do not require a commitment:

- Radioactive characterization issues
- Characterization required as normal process when a cradle to grave process is being implemented (e.g., waste being sent to 200 Area Liquids)
- Unit-specific waste acceptance data not required for LDR waste characterization (e.g., total suspended solids for sending waste to the 200 Area Liquids, or Real-Time radiography)

If the answer is No, it means the waste is ready to be managed through the disposal phase.

If the answer is unknown at this time, an explanation is necessary. The explanation needs to identify what step(s) needs to be completed before the question can be answered. **If yes, provide Tri-Party Agreement milestone number(s):** Applicable TPA milestones related to characterization are provided.

- 2.12 Other key assumptions related to storage, inventory and generation information:** Explains anything about this waste that will provide greater understanding and clarification, or that cannot otherwise be supplied in the format provided. Also identifies assumptions that, if incorrect, would affect information in the data sheet or elsewhere in the report.

### **3.0 Waste Minimization**

- 3.1 Has a waste minimization assessment been completed for this stream?** Two options are provided in a multiple choice format, "yes" and "no." **If yes, provide date assessment conducted:** If "yes" is chosen, provides date the assessment was conducted. **If yes, provide document number or other identification:** Provides the document number or other identification of the assessment and/or results. The information provided is sufficient for a reader to find the document. **If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:** If "no" is chosen, provides a future date assessment is planned to be completed. "NA" is used only if the waste is no longer generated. Note that if the

waste is not generated at this location (i.e., if the location is for storage only), then this space can be used to explain that fact.

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):** Space is provided for the explanation.
- 3.3 Waste minimization schedule**
  - 3.3.1 Reduction achieved during calendar year (volume or mass):** How much waste has the facility avoided generating this past year as part of the waste minimization program?
  - 3.3.2 Projected future waste volume reductions:** Lists the next 5 years in volume (m<sup>3</sup>) or mass (kg). The database will automatically add the individual years' entries to supply the location-specific data sheet total.
  - 3.3.3 Bases and assumptions used in above estimates:** Provide the bases and assumptions used to answer Sections 3.3.1 and 3.3.2 of the location-specific data sheet, if any estimates or schedules were provided. Note that any other explanation that will provide greater understanding and clarification about waste minimization activities for this waste can also be provided, in addition to the bases and assumptions required to support Sections 3.3.1 and 3.3.2 of the location-specific data sheet.

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Table B-1. Data Sheet Index. (8 sheets)

Treatability Group Identifier		Treatability Group Name		
Area	Plant	Unit	Waste Stream	Page #
<b>221-T RCRA Tank System</b>		<b>T Plant Complex Waste</b>		B-19
200 West	221-T	221-T, RCRA Tank System	RCRA Tank System	B-23
<b>222-S T8 RH-MLLW</b>		<b>222-S Laboratory Complex T8 Tunnel Waste</b>		B-27
200 West	222-S	222-S T-8 Tunnel Waste	T-8 Tunnel Waste	B-31
<b>241-CX Tanks</b>		<b>241-CX Tanks</b>		B-35
200 West	Semi works	241-CX-70/71/72	CX-Tanks	B-39
<b>324 Bldg. Radiochemical Engineering Cell Waste</b>		<b>324 Building Radiochemical Engineering Cells</b>		B-43
300 Area	324	324 REC	Radiochemical Engineering Cell	B-47
<b>618-4 DU/Oil Drums</b>		<b>Depleted Uranium in Oil from 618-4 Burial Ground</b>		B-51
300 Area	618-4	618-4 DU/Oil Drums	DU/Oil Drums	B-56
<b>B Plant</b>		<b>B Plant Containment Building Storage</b>		B-60
200 East	B Plant	221-B, Containment	Containment Building Storage	B-64
<b>B Plant Cell 4 Waste</b>		<b>B Plant Complex Cell 4 waste</b>		B-68
200 East	B Plant	221-B, Cell 4	Cell 4	B-72
<b>Cesium and Strontium Capsules</b>		<b>Cesium and Strontium Capsules</b>		B-76
200 East	WESF	225-B, Cs & Sr Capsules	Cs and Sr Capsules	B-80
<b>DST Waste</b>		<b>DST Waste</b>		B-84
200 West	222-S	219-S Waste Handling Facility (WHF)	Bulk Aqueous Liquids	B-90
200 East	242-A	242-A Evaporator Slurry	Slurry Waste	B-94
200 East	DST	DST System	DST System	B-98
Various areas, as required	HO-64-4275	Tank Trailer Waste	Tank Trailer HO-64-4275 Waste	B-102
200 West	PFP	241-Z, Mixed Waste Tanks	Mixed Waste Tanks	B-106
<b>ERDF – Direct Disposal</b>		<b>ERDF – Direct Disposal</b>		B-110
200 East	200 LEF	200 ETF, ERDF Debris	CERCLA Debris	B-114
200 East	200 LEF	200 ETF, ERDF Powder	CERCLA Powder	B-118
100 Area	ERDF Direct Disposal	ERDF Direct Disposal	ERDF Direct Disposal	B-122

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Treatability Group Identifier		Treatability Group Name		
Area	Plant	Unit	Waste Stream	Page #
<b>ERDF—Treatment</b>		<b>ERDF—Treatment</b>		B-126
100 Area	100-HR-3 Spent Resin	CERCLA Resin	CERCLA Resin	B-130
100 Area	CERCLA Lead	CERCLA Lead	CERCLA Lead	B-134
100 Area	K Basin	K Basin, lead	Misc. lead	B-138
<b>Hexone Storage and Treatment Facility</b>		<b>Hexone Storage and Treatment Facility</b>		B-142
200 West	REDOX	276-S-141/142	HSTF Storage	B-148
<b>LERF/ETF Liquid Waste</b>		<b>LERF/ETF Liquid Waste</b>		B-152
200 West	200 LEF	LERF Liquids	Wastewater	B-156
200 West	200-UP-1	200-UP-1	200-UP-1	B-159
200 East	242-A	242-A Evaporator	Evaporator Process Condensate	B-163
200 West	LLBG	MW Trench	TR34 Leachate	B-167
200 West	T Plant Complex	2706-T RCRA Tank System	Storage-2706-T RCRA Tank System	B-171
600 Area	WSCF	WSCF, LERF/ETF	LERF/ETF	B-175
<b>MLLW-01</b>		<b>LDR Compliant Waste</b>		B-179
200 East	200 LEF	200 ETF, LDR Compliant	RCRA Powder, LDR Compliant	B-183
200 West	222-S	222-S LDR Compliant Waste, Dangerous Mixed Waste Storage Area (DMWSA)	222-S LDR Compliant Waste	B-187
200 West	CWC	CWC, LDR compliant	LDR compliant waste	B-191
200 West	PFP	234-5Z, LDR Compliant	Lab Chemicals/Reagents, LDR Compliant	B-195
200 West	T Plant Complex	LDR Compliant	Storage-LDR Compliant Waste	B-199
Various areas, as required	Tank Farm Facilities	LDR Compliant, DST and SST Containerized Waste	LDR Compliant Waste	B-203
200 West	WRAP	2336-W, LDR Compliant	LDR Compliant	B-207
<b>MLLW-02</b>		<b>Inorganic Non-Debris</b>		B-211
200 East	200 LEF	200 ETF, RCRA Powder, Inorg. Non-Debris	RCRA Powder, Non-LDR Compliant	B-217

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Table B-1. Data Sheet Index. (8 sheets)

Treatability Group Identifier		Treatability Group Name		
Area	Plant	Unit	Waste Stream	Page #
200 West	222-S	222-S Inorganic Non-Debris Dangerous Mixed Waste Storage Area (DMWSA)	222-S Inorganic Non-Debris	B-221
300 Area	324	324, Inorg. Non-Debris	Inorganic Discarded Chemical/Waste	B-225
300 Area	327	327, Inorg. Non-Debris	Inorganic Discarded Chemical/Waste	B-229
200 West	CWC	CWC, Inorg. Non-Debris	Inorganic Solids And Labpacks	B-233
200 West	PFP	234-5Z, Inorg. Non-Debris	Lab Chemical Wastes, Inorganic Non-Debris	B-237
200 West	T Plant Complex	Inorganic Non-Debris	Storage-Inorg Non-Debris	B-241
Various areas, as required	Tank Farm Facilities	Inorg. Non-Debris, DST and SST Containerized Waste	Inorganic Non-Debris	B-245
600 Area	WSCF	WSCF, Inorg. Non-Debris	Inorganic Non-Debris	B-249
<b>MLLW-03</b>		<b>Organic Non-Debris</b>		<b>B-253</b>
100 Area	100 Area Reactors	Reactor Waste	Waste Oil	B-261
200 West	222-S	222-S Organic Non-Debris, Dangerous Mixed Waste Storage Area (DMWSA)	222-S Organic Non-Debris	B-265
300 Area	324	324, Org. Non-Debris	Organic Discarded Chemical/Waste	B-269
300 Area	327	327, Org. Non-Debris	Organic Discarded Chemical/Waste	B-273
200 West	CWC	CWC, Org. Non-Debris	Organic Solids and Labpacks	B-277
200 West	PFP	234-5Z, Org. Non-Debris	Lab Chemicals/Waste, Organic Non-Debris	B-281
200 West	T Plant Complex	Org. Non-Debris	Storage-Organic Non-Debris	B-285
Various areas, as required	Tank Farm Facilities	Org. Non-Debris, DST and SST Containerized Waste	Organic Non-Debris	B-289
200 West	WRAP	2336-W, Org Non-Debris	Organic Non-Debris	B-293
600 Area	WSCF	WSCF, Org. Non-Debris	Organic Non-Debris	B-297
<b>MLLW-04A</b>		<b>O/C Hazardous Debris</b>		<b>B-301</b>
200 East	200 LEF	200 ETF, Acid O/C Debris	Acid	B-311

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Table B-1. Data Sheet Index. (8 sheets)

Treatability Group Identifier		Treatability Group Name		
Area	Plant	Unit	Waste Stream	Page #
200 East	200 LEF	200 ETF, Caustic O/C Debris	Caustic	B-315
200 East	200 LEF	200 ETF, O/C, Debris	RCRA O/C Debris	B-319
200 East	200 LEF	242-A, O/C Debris	242-A	B-323
200 West	222-S	222-S Organic/Carbonaceous Debris, Dangerous Mixed Waste Storage Area (DMWSA)	222-S Organic/Carbonaceous Hazardous Debris	B-327
300 Area	324	324, O/C Debris	Organic/Carbonaceous Hazardous Debris	B-331
300 Area	3711	3711, O/C Debris	Rad. Plastics/Inerts, Lead Residues	B-335
200 West	CWC	CWC, O/C Debris	O/C Hazardous Debris	B-339
200 East	Groundwater Well Maintenance Debris	Well Maintenance Debris	Well Debris	B-343
200 West	Hexone Storage and Treatment Facility Filter Waste	HSTF Filter Waste	Hexone Filter Waste	B-347
200 West	PFP	PFP, O/C Debris	Operations and D&D Wastes	B-351
200 West	REDOX	202-S, Organic Debris	202-S	B-355
200 West	T Plant Complex	O/C Debris	Storage-O/C Debris	B-359
Various areas, as required	Tank Farm Facilities	Organic Debris, DST and SST Containerized Waste	Organic Debris	B-363
200 West	WRAP	2336-W, O/C Debris	Organic/Carbonaceous Debris	B-367
600 Area	WSCF	WSCF, O/C Debris	Organic/Carbonaceous Hazard Debris	B-371
<b>MLLW-04B</b>		<b>Non-O/C Hazardous Debris</b>		<b>B-375</b>
200 West	CWC	CWC, Non-O/C Debris	Inorganic Debris	B-386
200 West	PFP	PFP, Non-O/C Debris	Inorganic Debris	B-390
Various areas, as required	Tank Farm Facilities	Inorg. Debris, DST and SST Containerized Waste	Inorganic Debris	B-394
200 West	WRAP	2336-W, Inorg. Debris	Inorganic Debris	B-398

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Treatability Group Identifier		Treatability Group Name		
Area	Plant	Unit	Waste Stream	Page #
<b>MLLW-05</b>		<b>Elemental Lead</b>		<b>B-402</b>
200 West	222-S	222-S Elemental Lead, Dangerous Mixed Waste Storage Area (DMWSA)	222-S Elemental Lead	B-409
300 Area	324	324, Pb, elemental	Elemental Lead	B-413
300 Area	327	327, Pb, elemental	Elemental Lead	B-417
200 West	CWC	CWC, Pb, elemental	Elemental Lead	B-421
200 West	PPF	234-5Z, Pb, elemental	Elemental Lead	B-425
Various areas, as required	Tank Farm Facilities	Pb, elemental, DST and SST Containerized Waste	Elemental Lead	B-429
200 West	WRAP	2336-W, Pb, elemental	Elemental Lead	B-433
<b>MLLW-06</b>		<b>Elemental Mercury</b>		<b>B-437</b>
300 Area	327	327, Hg, elemental	Elemental Mercury	B-443
200 West	CWC	CWC, Hg, elemental	Elemental Mercury	B-447
<b>MLLW-07</b>		<b>RH and Large Container</b>		<b>B-451</b>
200 West	222-S	222-S, Shielded Debris	222-S, MLLW-07	B-456
200 West	CWC	CWC, M-91 MLLW	M-91 MLLW	B-460
300 Area	HWTU	HWTU, MLLW-RH	MLLW-07	B-464
Various areas, as required	Tank Farm Facilities	RH Mixed Waste	M-91 MLLW	B-468
<b>MLLW-08</b>		<b>Unique Waste</b>		<b>B-472</b>
200 West	CWC	CWC, Unique Waste	Unique Waste	B-475
200 West	T Plant Complex	T Plant Complex Units	MW Requiring Special Processing	B-479
<b>MLLW-09</b>		<b>Lead-Acid and Cadmium Batteries</b>		<b>B-483</b>
300 Area	324	324, Batteries, Pb & Cd	Batteries	B-487
300 Area	327	327, Batteries, Pb & Cd	Batteries	B-491
200 West	CWC	CWC, Batteries, Pb & Cd	Lead-Acid and Cadmium Batteries	B-495
200 West	T Plant Complex	Batteries, Pb & Cd	Storage-Lead-Acid and Cadmium Batteries	B-499

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Treatability Group Identifier		Treatability Group Name		
Area	Plant	Unit	Waste Stream	Page #
<b>MLLW-10</b>		<b>Reactive Metals</b>		B-503
200 West	222-S	Reactive Metals and Metal Components, Dangerous Mixed Waste Storage Area (DMWSA)	Reactive Metals and Metal Compounds	B-507
200 West	CWC	CWC, Reactive Metals	Alkali Metals	B-511
400 Area	FFTF	FFTF, Reactive Metals	FFTF	B-515
<b>PNNL-HWTU Waste</b>		<b>PNNL Laboratory Waste</b>		B-519
300 Area	HWTU	HWTU	HWTU	B-524
<b>PUREX Containment Bldg. Waste</b>		<b>PUREX Containment Building</b>		B-528
200 East	PUREX	202-A, Containment	202-A	B-532
<b>PUREX Storage Tunnel Waste</b>		<b>PUREX Storage Tunnels</b>		B-536
200 East	PUREX	Storage Tunnels 1 and 2	Storage Tunnels 1 and 2	B-540
<b>Purgewater Storage and Treatment Facility</b>		<b>PSTF</b>		B-544
600 Area	Purgewater Storage And Treatment Facility	PSTF	Modu-Tanks	B-547
<b>SST Waste</b>		<b>Single-Shell Tank System</b>		B-551
200 East	SST	SST System	SST System	B-556
<b>T Plant EC-1 Condenser</b>		<b>T Plant Complex EC-1 Condenser</b>		B-560
200 West	221-T	221-T	EC-1 Condenser	B-564
<b>TRUM-BOX</b>		<b>M-91 T Plant TRUM, Large Boxed</b>		B-568
200 West	CWC	CWC, TRUM boxes	TRUM Boxes	B-572
<b>TRUM-CH</b>		<b>WRAP TRUM</b>		B-576
200 East	200 Area Investigation	200 Area Investigation	200 Area Investigation	B-581
200 West	233-S	233-S	233-S	B-585
200 West	CWC	CWC, CH TRUM	CH TRUM	B-589
300 Area	HWTU-TRU	TRUM-CH Contact-Handled	TRU	B-593
200 West	LLBG	TRU Retrieval	TRU Retrieval	B-597
200 West	PFP	234-5Z, Ash	Hanford Ash Residues	B-601

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Treatability Group Identifier		Treatability Group Name		
Area	Plant	Unit	Waste Stream	Page #
200 West	PFP	234-5Z, Solutions Stabilized Solids	Solutions Stabilized Solids	B-605
200 West	PFP	234-5Z, O/MO Residues	Pu Oxides/Mixed Oxides Residues	B-609
200 West	PFP	234-5Z, Pu Misc. Combustibles	Pu Miscellaneous Residues, Combustibles	B-613
200 West	PFP	234-5Z, Pu Misc. Residues	Plutonium-Bearing Misc. Residues	B-617
200 West	PFP	234-5Z, RF Ash	Rocky Flats Ash Residues	B-621
200 West	PFP	234-5Z, SS&C	Sand, Slag, and Crucible Residues	B-625
200 West	PFP	234-5Z, Solidified Pu Solutions	Solidified Pu Solutions	B-629
200 West	PFP	PFP, Legacy Holdup	Legacy Holdup Waste	B-633
200 West	WRAP	2336-W, CH TRUM	TRUM-CH	B-637
<b>TRUM-RH</b>		<b>M-91 T Plant TRUM, RH</b>		<b>B-641</b>
200 West	CWC	CWC, RH TRUM	RH TRUM	B-645
300 Area	HWTU	HWTU, TRUM-RH	TRUM-RH	B-649
<b>TRU-PCB</b>		<b>PCB TRUM and/or PCB TRU, CH</b>		<b>B-653</b>
200 West	CWC	CWC, TRUM PCBs	TRUM PCBs	B-657
300 Area	HWTU	HWTU, TRU-PCB	TRU-PCB	B-661
100 Area	K Basin	K Basin	K Basin Sludge	B-665
200 West		234-5Z, Org Non-Debris	Hydraulic Fluids Contaminated with PCBs/Rad	B-669

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## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** 221-T RCRA Tank System  
**Treatability group/aggregated stream name:** T Plant complex waste
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**  
 Liquid mixed waste with settled solids/sludge (waste also contains PCBs at TSCA regulated concentrations)

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**  
 Total volume (cubic meters): 62.840

**2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
<b>Totals</b>	0.000		

### 3.0 WASTE STREAM CHARACTERIZATION

**3.1 Radiological characteristics**

- 3.1.1 Mixed waste type**       High-level     Transuranic     Low-level
- 3.1.2 Handling (as currently packaged/stored)**     Contact-handled     Remote-handled
- 3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

The contents of the 221-T tank system are evaporating so that the concentration of radionuclides will be increasing over time. According to best information, at least one tank could be considered transuranic waste. Because a majority of the tanks are still considered to contain low-level waste, question 3.1.1 is answered as low-level waste.

**3.2 Matrix characteristics (physical content)**

- 3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**
- 3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:**  
 Low     Medium     High
- 3.2.3 Comments on matrix characteristics and/or confidence level:**

## LDR REPORT TREATABILITY GROUP DATA SHEET

The confidence level is high because of existing analytical data on the liquid and sludge fractions from representative tanks.

### 3.3 Regulated contaminated characteristics

#### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater  Non-wastewater  Unknown

#### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D005	TC-Barium	NA	>100 ppm	Analytical data	1.2 mg/L
D006	TC-Cadmium	NA	>1 ppm	"	0.69 mg/L
D007	TC-Chromium	NA	> 5 ppm	"	2.77 mg/L
D008	TC-Lead	Lead Charac.	>5 ppm	"	0.69 mg/L
F001	1,1,1-Trichloroethane	Spent Solvent	Unknown	Process knowledge	6.0 mg/kg
F002	Methylene chloride	Spent Solvent	"	"	30.0 mg/kg
F003	Acetone, MIK	Spent Solvent	"	"	160 & 33 mg/kg
F004	Cresols	Spent Solvent	"	"	5.6 mg/kg
F005	MEK	Spent Solvent	"	"	36 mg/kg

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

UHCs have not been determined for this waste stream.

#### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

- List: NA
- No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)
- None (i.e., all constituents/waste numbers of this waste stream still require treatment)

#### 3.3.4 Does this waste stream contain PCBs?

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Yes  No  Unknown If no or unknown, skip to Section 3.3.5

**3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?**

Yes  No  Unknown

**3.3.4.2 Indicate the PCB concentration range (ppm)**

<50  ≥ 50  Unknown

**3.3.5 What is the confidence level for the regulated contaminant characteristic data?**

Low  Medium  High

**3.3.6 Comments on regulated contaminant characteristics and/or confidence level:**

There is a potential for additional sampling to evaluate waste for long term storage (evaluate waste as liquid fraction continues to evaporate, rate estimated at approximately 8 gallons/day) and underlying hazardous constituents.

### 4.0 WASTE STREAM TREATMENT

**4.1 Is this stream currently being treated?**  Yes  No

If yes, provide details: NA

**4.2 Planned treatment**

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)  Treating or plan to treat off site  
 Treating or plan to treat on site  Treatment options still being assessed

**4.3 Planned treatment method, facility, extent of treatment capacity available:**

TBD

**4.4 Treatment schedule information:**

Dispositioning of the 221-T RCRA Tank System will be accomplished through the T Plant Complex Part B workshop process/negotiations with Ecology.

**4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**

None

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

None

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes  No  Unknown

If yes, describe: NOTE: Dispositioning of the 221-T RCRA Tank System will be accomplished through the T Plant Complex Part B workshop/negotiations with Ecology.

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- 4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

None

- 4.9 Key assumptions:** An estimated 8 gallons per day is evaporating.

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

The waste will either be placed into the double-shell tank system or into mixed waste disposal units (to be determined). NOTE: Discussions with Ecology regarding the waste within the 221-T RCRA Tank System and being addressed through the Part B workshop process. Closure currently planned for 2025.



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Other (explain): NA

### 2.1.1 How was the waste managed prior to storage?

The waste was generated and placed into the 221-T RCRA Tank System.

### 2.1.2 Timeframe when waste was placed into storage:

Waste was received in these tanks throughout the history of the 221-T Building until June 1999 when the tanks were removed from service.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
221-T BUILDING	7 tanks

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 62.84

Date of inventory values: 12/28/01

Comments on waste inventory: The liquid fraction of this waste is evaporating at approximately 8 gallons per day, but evaporation rate fluctuates with weather conditions.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: The 221-T RCRA Tank System wastes are stored in tanks that do not have secondary containment and do not have an integrity assessment. As such, this tank system has been removed from service and will no longer accept additional waste.

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: Refer to DOE/RL Letter 01-RCA-192 for discussion on proposed management of this waste.

None

### 2.6 Estimated generation projection by calendar year:

Year m3 and/or kg

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

2002	0.000
2003	0.000
2004	0.000
2005	0.000
2006	0.000
Totals	0.000

### 2.7 DOE Storage Compliance Assessment information:

- Assessment has been completed. Reference to most recent assessment: Oct. 2000, A&E-00-ASS-072
- Assessment has been scheduled. Scheduled date: Assessment currently scheduled for July 2003
- Other. Explain: NA

### 2.8 Applicable Tri-Party Agreement milestones related to storage at this location:

None

### 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?

- Yes  No

If yes, summarize releases and quantities and provide date:

NA

### 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?

- Yes  No

If yes, explain: NA

### 2.11 Is further characterization necessary?

- Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Dispositioning of the 221-T RCRA Tank System will be accomplished through the T Plant Complex Part B workshop process with Ecology. Additional characterization might be necessary to support long-term storage.

If yes, provide Tri-Party Agreement milestone number(s): NA

### 2.12 Other key assumptions related to storage, inventory, and generation information:

Negotiations on closure approach of the 221-T RCRA Tanks System will be accomplished through the T Plant Complex Part B workshop process with Ecology. An estimated 8 gallons per day are evaporating from the waste currently in the tanks due to ventilation of the cells in Building 221-T containing the tank system. The evaporation rate is approximately 3000 gallons (approximately 11 cubic meters) per year. Assuming this rate continues, the liquid fraction will have evaporated in 5.8 years. Information on the evaporation rate has been discussed with Ecology, and will be included in

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

the Part B permit application. Administrative and engineering controls have been put in place to prevent additional liquids from entering this tank system.

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted: NA

If yes, provide document number or other identification: NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

NA – stream is no longer generated (see 2.12 of this data sheet).

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

**3.3.2 Projected future waste volume reductions:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

**3.3.3 Bases and assumptions used in above estimates:**

NA

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** 222-S T8 RH-MLLW  
**Treatability group/aggregated stream name:** 222-S laboratory complex T8 tunnel waste
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**  
 This waste stream is comprised of debris which has come into contact with waste from the 219-S Waste Handling Facility (WHF) tank system waste. The debris is designated as remote-handled mixed low-level waste (RH MLLW) as a result of this contact.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**  
 Total volume (cubic meters): 0.200
- 2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	0.000		0.000
2003	0.000		0.000
2004	0.000		0.000
2005	0.000		0.000
2006	0.000		
Totals	0.000		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 Radiological characteristics**
- 3.1.1 Mixed waste type**  High-level  Transuranic  Low-level
- 3.1.2 Handling (as currently packaged/stored)**  Contact-handled  Remote-handled
- 3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**  
 Remote handled (RH) waste must be shielded down to contact-handled (CH) levels before it can be accepted into a Hanford TSD unit; therefore, RH waste packages in Hanford TSDF are actually input into SWITS as CH. To determine if a waste package contains RH waste, the radionuclide, dose rate, physical form and generator information in SWITS are reviewed for clues that might lead a reviewer to believe a waste may be RH. Since the T-8 Tunnel waste may be high dose, RH will apply to this waste stream.
- 3.2 Matrix characteristics (physical content)**
- 3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**
- 3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:**

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Low  Medium  High

**3.2.3 Comments on matrix characteristics and/or confidence level:**

This waste matrix that came in contact with the debris is the same waste contained in 219-S WHF.

**3.3 Regulated contaminated characteristics****3.3.1 Wastewater/non-wastewater under RCRA**

Wastewater  Non-wastewater  Unknown

**3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable**

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
F001	1,1,1-Trichloroethane	Spent Solvent	<6 mg/kg	***	6.0 mg/kg
F002	Methylene Chloride	Spent Solvent	< 30 mg/kg	***	30 mg/kg
F003	Acetone & Hexone	Spent Solvent	<160 mg/kg	***	160 mg/kg
F004	o-Cresol & p-Cresol	Spent Solvent	< 5.6 mg/kg	***	5.6 mg/kg
F005	Methyl Ethyl Ketone	Spent Solvent	< 36 mg/kg	***	36 mg/kg

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

\*\*\*generator knowledge based on the process that generated this waste

**3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards**

List:

No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)

None (i.e., all constituents/waste numbers of this waste stream still require treatment)

**3.3.4 Does this waste stream contain PCBs?**

Yes  No  Unknown If no or unknown, skip to Section 3.3.5

**3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?**

**LDR REPORT TREATABILITY GROUP DATA SHEET**

Yes  No  Unknown

**3.3.4.2 Indicate the PCB concentration range (ppm)**

<50  ≥ 50  Unknown

**3.3.5 What is the confidence level for the regulated contaminant characteristic data?**

Low  Medium  High

**3.3.6 Comments on regulated contaminant characteristics and/or confidence level:**

Characterization of the waste is based on characterization of the 219-S waste. Only F and D waste codes originally applied to the piping before it was taken out of service. The piping was rinsed prior to placement in the tunnel. Therefore, the piping no longer carries D waste codes, and only F waste codes apply. Underlying hazardous constituents do not apply.

**4.0 WASTE STREAM TREATMENT****4.1 Is this stream currently being treated?**  Yes  No

If yes, provide details: n/a

**4.2 Planned treatment**

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)  Treating or plan to treat off site  
 Treating or plan to treat on site  Treatment options still being assessed

**4.3 Planned treatment method, facility, extent of treatment capacity available:**

To Be Determined

**4.4 Treatment schedule information:**

Treatment will be scheduled to coincide with the 222-S Laboratory Complex closure in 2035.

**4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**

None

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

None

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes  No  Unknown

If yes, describe:

**4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

## LDR REPORT TREATABILITY GROUP DATA SHEET

To Be Determined

**4.9 Key assumptions:** NA

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Disposal will be discussed as a part of the 222-S Laboratory Complex closure in 2035.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 222-S/222-S T-8 Tunnel Waste      **Waste stream** T-8 Tunnel Waste  
Treatability/aggregated group identifier: 222-S T8 RH-MLLW  
Treatability/aggregated group name: 222-S laboratory complex T8 tunnel waste

**1.2 Applicable profile number(s) for this waste stream:**

None

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Waste was generated from removal of pipelines and other debris used in the transfer of aqueous analytical waste from the 222-S laboratory to the 219-S Waste Handling Facility (WHF).

**1.3.2 History of how and where the waste was/is generated:**

The waste consists of debris (used pipes that transferred chemicals, unused samples, standards and reagents during analytical procedures).

**1.3.3 Source of the hazardous constituents:**

The source of the hazardous constituents is 222-S Laboratory waste entering 219-S Waste Handling Facility (WHF).

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Approval of waste entering 219-S WHF is in accordance 222-S Waste Analysis Plan (WAP) DOE/RL-91-27.

**1.3.5 Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                 DST                                 SST  
 Other (explain): This debris waste stream is currently in the T8 tunnel.

**2.1.1 How was the waste managed prior to storage?**

This waste was being staged in the T-8 tunnel per Ecology approval ("Request for Approval to Stage Out of Service Ancillary Drain Piping in the 222-S Laboratory Service Tunnels", dated

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

October 10, 1997 ) until closure of the 222-S Laboratory Complex.

### 2.1.2 Timeframe when waste was placed into storage:

10/1997

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
219-S T8 TUNNEL	0

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 0.2

Date of inventory values: 1/14/02

Comments on waste inventory: None

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: This waste has been staged in a shielded area of T-8 tunnel. Final disposition will be determined at the time of 222-S Laboratory Complex closure.

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	0.000		0.000
2003	0.000		0.000
2004	0.000		0.000
2005	0.000		0.000
2006	0.000		0.000
Totals	0.000		

### 2.7 DOE Storage Compliance Assessment information:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Assessment has been completed. Reference to most recent assessment: A&E-SEC-01-018
- Assessment has been scheduled. Scheduled date:
- Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

M-20-22

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

- Yes  No

If yes, summarize releases and quantities and provide date:

n/a

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

- Yes  No

If yes, explain: n/a

**2.11 Is further characterization necessary?**

- Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

n/a

If yes, provide Tri-Party Agreement milestone number(s): n/a

**2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

- Yes  No

If yes, provide date assessment conducted: n/a

If yes, provide document number or other identification: n/a

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: n/a

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

n/a

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 0 m3

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		0.0
2003	0.000		0.0
2004	0.000		0.0
2005	0.000		0.0
2006	<u>0.000</u>		<u>0.0</u>
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

n/a

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 **Treatability group/aggregated stream identifier** 241-CX Tanks  
**Treatability group/aggregated stream name:** 241-CX Tanks
- 1.2 **Description of waste (list WSRd numbers for this waste stream, as applicable):**  
Residual tank waste resulting from REDOX, PUREX, and Semiworks processes.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 **Current total inventory for this stream (stored waste only, not accumulation areas)**  
Total volume (cubic meters): 3.000

- 2.2 **Estimated generation projection by calendar year**

<u>Year</u>	<u>m3</u>	<u>and/or</u>	<u>kg</u>
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	<u>0.000</u>		<u>          </u>
Totals	0.000		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 **Radiological characteristics**

- 3.1.1 **Mixed waste type**       High-level     Transuranic     Low-level
- 3.1.2 **Handling (as currently packaged/stored)**  Contact-handled     Remote-handled
- 3.1.3 **Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**  
None.

- 3.2 **Matrix characteristics (physical content)**

- 3.2.1 **Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**
- 3.2.2 **Confidence level for matrix characteristic data in Section 3.2.1:**  
 Low     Medium     High
- 3.2.3 **Comments on matrix characteristics and/or confidence level:**

Little information is available on the contents of the waste in the 241-CX-72.

- 3.3 **Regulated contaminated characteristics**

- 3.3.1 **Wastewater/non-wastewater under RCRA**

## LDR REPORT TREATABILITY GROUP DATA SHEET

Wastewater    Non-wastewater    Unknown

### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D002	corrosivity	corrosive char	**	process knowledge	DEACT, meet 268.48
D004	arsenic	NA	**	process knowledge	5.0 mg/L TCLP, meet 268.48
D005	barium	NA	**	process knowledge	21 mg/L TCLP, meet 268.48
D006	cadmium	cadmium char.	**	process knowledge	0.11 mg/l TCLP
D007	chromium	NA	**	process knowledge	0.60 mg/l TCLP
D008	lead	Lead char.	**	process knowledge	5.0 mg/L TCLP
D009	mercury	Low mercury	**	process knowledge	0.2 mg/l TCLP, meet 268.48
D010	selenium	NA	**	process knowledge	5.7 mg/l TCLP, meet 268.48
D011	silver	NA	**	process knowledge	0.14 mg/l TCLP, meet 268.48

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

- List:
- No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)
- None (i.e., all constituents/waste numbers of this waste stream still require treatment)

### 3.3.4 Does this waste stream contain PCBs?

## LDR REPORT TREATABILITY GROUP DATA SHEET

Yes  No  Unknown If no or unknown, skip to Section 3.3.5

**3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?**

Yes  No  Unknown

**3.3.4.2 Indicate the PCB concentration range (ppm)**

<50  ≥ 50  Unknown

**3.3.5 What is the confidence level for the regulated contaminant characteristic data?**

Low  Medium  High

**3.3.6 Comments on regulated contaminant characteristics and/or confidence level:**

Assume treatment will be required for this waste stream as no information is available about the concentration levels of the waste.

### 4.0 WASTE STREAM TREATMENT

**4.1 Is this stream currently being treated?**  Yes  No

If yes, provide details: NA

**4.2 Planned treatment**

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)  Treating or plan to treat off site  
 Treating or plan to treat on site  Treatment options still being assessed

**4.3 Planned treatment method, facility, extent of treatment capacity available:**

To be determined

**4.4 Treatment schedule information:**

Waste will be dispositioned with the TSD unit closure.

**4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**

M-20-54. Milestone negotiations for the Central Plateau are ongoing and could affect this milestone.

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

TSD is part of the ongoing Central Plateau negotiations.

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes  No  Unknown

If yes, describe: NA

**4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

## LDR REPORT TREATABILITY GROUP DATA SHEET

Unknown at this time

**4.9 Key assumptions:** None

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

To be determined.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

**1.1 Plant/unit name:** Semiworks/241-CX-70/71/72      **Waste stream** CX-Tanks  
Treatability/aggregated group identifier: 241-CX Tanks  
Treatability/aggregated group name: 241-CX Tanks

**1.2 Applicable profile number(s) for this waste stream:**

N/A

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

241-CX-70, -71, and -72 were used to store high level process wastes from REDOX, PUREX, and Strontium Semiworks Complex.

**1.3.2 History of how and where the waste was/is generated:**

Tanks were in operation beginning in early 1950's. On December 21, 1991 the waste placed in Tank 241-CX-70 was placed in containers and transferred to TRUSAF and then Central Waste Complex. Only the tank in 241-CX-72 contains mixed waste.

**1.3.3 Source of the hazardous constituents:**

Hazardous constituents resulted from past operations in REDOX, PUREX, and Strontium Semiworks Complex.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Process knowledge.

**1.3.5 Additional notes:**

All of the tanks have been out of service for at least 30 years. Further details can be found in the Part A, Form 3 permit application.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                     DST                             SST  
 Other (explain):

**2.1.1 How was the waste managed prior to storage?**

Waste was placed directly into storage from operations.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.1.2 Timeframe when waste was placed into storage:**

Waste was placed in storage between 1950 and 1967. Grout was added to the CX-72 tank in 1986.

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
241-CX-72	1 tank

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 3

Date of inventory values: 12/31/01

Comments on waste inventory: 11 feet of non-liquid mixed waste is located in tank CX-72.  
The volume assumes a 3.3 foot tank diameter.

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list:

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment

Assessment has been scheduled. Scheduled date:

1st quarter CY 2005

Other. Explain:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

NA

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Tank characterization will be coordinated with remediation of the 200-IS-1 Operable Unit.

If yes, provide Tri-Party Agreement milestone number(s): TPA Milestone M-13-00M

**2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA. Waste stream is no longer generated.

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

NA

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m<sup>3</sup>

**3.3.2 Projected future waste volume reductions:**

Year            m<sup>3</sup>            and/or            kg

### LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

2002	0.000	
2003	0.000	
2004	0.000	
2005	0.000	
2006	0.000	
Totals	0.000	

**3.3.3 Bases and assumptions used in above estimates:**

NA

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** 324 Bldg. Radiochemical Engineering Cell Waste  
**Treatability group/aggregated stream name:** 324 Building radiochemical engineering cells
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**  
 WSRd# 324X-20J-0001. High activity radioactive waste containing regulated quantities of toxic heavy metals. Mixed waste residue will be generated from the future REC decontamination and deactivation activities.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 5.000

- 2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	5.000		
2005	5.000		
2006	0.000		
Totals	10.000		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 Radiological characteristics**

**3.1.1 Mixed waste type**  High-level  Transuranic  Low-level

**3.1.2 Handling (as currently packaged/stored)**  Contact-handled  Remote-handled

**3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

Waste is highly contaminated.

- 3.2 Matrix characteristics (physical content)**

**3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**

**3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:**

Low  Medium  High

**3.2.3 Comments on matrix characteristics and/or confidence level:**

None

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.3 Regulated contaminated characteristics

#### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater     Non-wastewater     Unknown

#### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D005	Barium	NA	420 ppm	Sample analysis	Exempt (61 FR 60704)
D006	Cadmium	TC-Cadmium	1.0 ppm	Sample analysis	Exempt (61 FR 60704)
D007	Chromium	NA	6.3 ppm	Sample analysis	Exempt (61 FR 61704)
D008	Lead	TC-Lead	34.6 ppm	Sample analysis	Exempt (61 FR 61704)
D008	Lead	Rad. Lead Solids	>5.0	Process knowledge	Exempt (61 FR 60704)

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

#### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

List:

No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)

None (i.e., all constituents/waste numbers of this waste stream still require treatment)

#### 3.3.4 Does this waste stream contain PCBs?

Yes     No     Unknown    If no or unknown, skip to Section 3.3.5

##### 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?

Yes     No     Unknown

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.3.4.2 Indicate the PCB concentration range (ppm)

<50  ≥ 50  Unknown

### 3.3.5 What is the confidence level for the regulated contaminant characteristic data?

Low  Medium  High

### 3.3.6 Comments on regulated contaminant characteristics and/or confidence level:

None

## 4.0 WASTE STREAM TREATMENT

### 4.1 Is this stream currently being treated? Yes No

If yes, provide details: NA

### 4.2 Planned treatment

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)  Treating or plan to treat off site  
 Treating or plan to treat on site  Treatment options still being assessed

### 4.3 Planned treatment method, facility, extent of treatment capacity available:

TBD

### 4.4 Treatment schedule information:

NA. Any treatment on this waste matrix will be performed by the Hanford WIPP Program.

### 4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):

NA

### 4.6 Proposed new Tri-Party Agreement treatment milestones:

None

### 4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?

Yes  No  Unknown

If yes, describe: Waste minimization will be considered during the developing and/or selecting the treatment method.

### 4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:

TBD

### 4.9 Key assumptions: None

## 5.0 WASTE STREAM DISPOSAL

## LDR REPORT TREATABILITY GROUP DATA SHEET

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Waste will be disposed of at WIPP

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 324/324, REC **Waste stream** Radiochemical Engineering Cell
- Treatability/aggregated group identifier: 324 Bldg. Radiochemical Engineering Cell Waste
- Treatability/aggregated group name: 324 Building radiochemical engineering cells

**1.2 Applicable profile number(s) for this waste stream:**

None

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Waste residue from further REC deactivation and decontamination activities.

**1.3.2 History of how and where the waste was/is generated:**

Waste was generated during hot cell operations in the past, as described in the "324 Building Radiochemical Engineering Cells, High Level Vault, Low Level Vault, and Associated Areas Closure Plan", DOE/RL-96-73. Waste is being collected and containerized from the clean-up of the hot cells, pipe trench and tank vault.

**1.3.3 Source of the hazardous constituents:**

The hazardous constituents came from feed materials to support various research and development projects that were performed in the REC. This information is discussed in detail in DOE/RL-96-73, Rev.1, "324 Building Radiochemical Engineering Cells, High-Level Vault, Low-Level Vault, and Associated Areas Closure Plan".

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data, process knowledge.

**1.3.5 Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)
- Tank                 DST                         SST

- Other (explain): The waste is in the form of radioactive contamination within the hot cells, pipe trench and tank vault.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 2.1.1 How was the waste managed prior to storage?

In accordance with the "324 Building Radiochemical Engineering Cells, High Level Vault, Low Level Vault, and Associated Areas Closure Plan", DOE/RL-96-73.

### 2.1.2 Timeframe when waste was placed into storage:

As addressed in the 324 REC Closure Plan (DOE/RL-96-73), the waste is in the form of hot cells contamination from pre-1996 research and development operations.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
324 REC	

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 5  
 Date of inventory values: 12/31/01  
 Comments on waste inventory: Waste volume is estimated based on the container volume.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: NA

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	5.000		
2005	5.000		
2006	0.000		
Totals	10.000		

### 2.7 DOE Storage Compliance Assessment information:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Assessment has been completed. Reference to most recent assessment
- Assessment has been scheduled. Scheduled date: 4th quarter CY 2002
- Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**  
M-89-00 and M-92-16

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**  
 Yes  No

If yes, summarize releases and quantities and provide date:  
NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**  
 Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**  
 Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):  
NA

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**  
None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**  
 Yes  No

If yes, provide date assessment conducted: NA

If yes, provide document number or other identification: NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: Not scheduled at this time

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**  
Waste minimization is accomplished through waste segregation.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 0 m3

### 3.3.2 Projected future waste volume reductions:

<u>Year</u>	<u>m3</u>	<u>and/or</u>	<u>kg</u>
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

None

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

**1.1 Treatability group/aggregated stream identifier** 618-4 DU/Oil Drums  
**Treatability group/aggregated stream name:** Depleted uranium in oil from 618-4 Burial Ground

**1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**  
 The drums contain depleted uranium chips, turnings, cuttings, and sludges immersed in oil discovered in a burial ground being excavated under a CERCLA ROD. The 618-4 Burial Ground was operated from 1955 to 1961. No information is available about the history or source of the waste. The drums were discovered in March 1998 during remediation activities. In April 1998, each of the excavated drums was placed in a vented overpack and those with low oil content were stabilized with mineral oil. The drums are staged within the Area of Contamination (AOC) and are being managed in accordance with CERCLA requirements. The waste will be moved to a staging area at ERDF in 2002.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

**2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**  
 Total volume (cubic meters): 55.000

**2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	37.000		
2003	130.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	167.000		

### 3.0 WASTE STREAM CHARACTERIZATION

**3.1 Radiological characteristics**

**3.1.1 Mixed waste type**       High-level     Transuranic     Low-level

**3.1.2 Handling (as currently packaged/stored)**     Contact-handled     Remote-handled

**3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

Based on radiological characterization, U235 activity level is below the level that naturally occurs in uranium, therefore it is depleted. A complete radiological analysis was done, and uranium isotopes were the only radionuclides found. All data supports this conclusion, and the confidence level is high.

**3.2 Matrix characteristics (physical content)**

**3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:

Low    Medium    High

### 3.2.3 Comments on matrix characteristics and/or confidence level:

See Section 3.1.3 of this data sheet

### 3.3 Regulated contaminated characteristics

#### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater    Non-wastewater    Unknown

#### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D005	Barium	NA	1170 mg/l	TCLP	21 mg/L TCLP, meet 268.48
D008	Lead	Lead Char.	277 mg/l	TCLP	0.75 mg/l, meet 268.48
D009	Mercury	Low Mercury	1.4 mg/l	TCLP	0.025 mg/l, meet 268.48
D010	Selenium	NA	1.4 mg/l	TCLP	5.7 mg/l TCLP, meet 268.48
D018	Benzene	NA	75 mg/l	TCLP	10 mg/l, meet 268.48
D019	Carbon Tetrachloride	Spent Solvent	ND @ 78 mg/l	TCLP	6.0 and meet 268.48
D022	Chloroform	NA	10 mg/l	TCLP	6.0 mg/l, meet 268.48
D023	o-Cresol	NA	ND @ 1000 mg/l	TCLP	5.6 mg/l, meet 268.48
D025	p-Cresol	NA	ND @ 1000 mg/l	TCLP	5.6 mg/l, meet 268.48
D027	p-Dichlorobenzene	NA	ND @ 1000 mg/l	TCLP	6.0 mg/l, meet 268.48
D028	1,2-Dichlorobenzene	NA	ND @ 78 mg/l	TCLP	6.0 mg/l, meet 268.48
D029	1,1-Dichloroethylene	NA	ND @ 78 mg/l	TCLP	6.0 mg/l, meet 268.48
D030	2,4-Dinitrotoluene	NA	ND@1000 mg/l	TCLP	140 mg/l, meet 268.48

## LDR REPORT TREATABILITY GROUP DATA SHEET

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D032	Hexachlorobenzene	NA	ND @ 1000 mg/l	TCLP	10 mg/l, meet 268.48
D033	Hexachlorobutadiene	NA	ND @ 1000 mg/l	TCLP	5.6 mg/l, meet 268.48
D034	Hexachloroethane	NA	ND @ 1000 mg/l	TCLP	30 mg/l, meet 268.48
D035	Methyl ethyl ketone	NA	1900 mg/l	TCLP	36 mg/l, meet 268.48
D036	Nitrobenzene	NA	ND @ 1000 mg/l	TCLP	14 mg/l, meet 268.48
D037	Pentachlorophenol	NA	ND @ 5000 mg/l	TCLP	7.4 mg/l, meet 268.48
D039	Tetrachloroethylene	NA	99 mg/l	TCLP	6.0 mg/l TCLP, meet 268.48
D040	Trichloroethylene	NA	2000 mg/l	TCLP	6.0 mg/l TCLP, meet 268.48
D041	2,4,5-Trichlorophenol	NA	ND@ 1000 mg/l	TCLP	7.4 mg/l TCLP, meet 268.48
D042	2,4,6-Trichlorophenol	NA	ND @ 1000 mg/l	TCLP	7.4 mg/l TCLP, meet 268.48
D043	Vinyl Chloride	NA	ND @ 160 mg/l	TCLP	6.0 mg/l TCLP, meet 268.48
UHC	Cadmium	NA	0.29 mg/l	TCLP	0.11 mg/l TCLP
UHC	Chromium	NA	1.6 mg/l	TCLP	0.6 mg/l
UHC	Di-n-octylphthalate	NA	54 mg/l	analytical data	28 mg/l
UHC	Ethyl Benzene	NA	190 mg/l	analytical data	10 mg/l
UHC	Methylene chloride	NA	200 mg/l	analytical data	30 mg/l
UHC	Napthalene	NA	400 mg/l	analytical data	5.6 mg/l
UHC	PCB	NA	540 mg/l	analytical data	10 mg/l
UHC	Pyrene	NA	93 mg/l	analytical data	8.2 mg/l
UHC	Silver	NA	0.98 mg/l	analytical data	0.14 TCLP
UHC	Toluene	NA	410 mg/l	analytical data	10 mg/l
UHC	Xylene	NA	1200 mg/l	analytical data	30 mg/l

## LDR REPORT TREATABILITY GROUP DATA SHEET

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

**3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards**

List:

No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)

None (i.e., all constituents/waste numbers of this waste stream still require treatment)

**3.3.4 Does this waste stream contain PCBs?**

Yes  No  Unknown If no or unknown, skip to Section 3.3.5

**3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?**

Yes  No  Unknown

**3.3.4.2 Indicate the PCB concentration range (ppm)**

<50  ≥ 50  Unknown

**3.3.5 What is the confidence level for the regulated contaminant characteristic data?**

Low  Medium  High

**3.3.6 Comments on regulated contaminant characteristics and/or confidence level:**

The waste matrix consists of ~35 wt% depleted uranium. Under certain conditions, uranium metal is pyrophoric. The uranium is immersed in oil (to mitigate the pyrophoric attribute) which makes up the balance of the waste matrix. The depleted uranium and oil are considered as a single matrix. The contaminant levels were determined through sampling and analysis, which is why the confidence level is high. These levels will also be used for designating the remaining drums as they are retrieved.

### 4.0 WASTE STREAM TREATMENT

**4.1 Is this stream currently being treated?**  Yes  No

If yes, provide details: NA

**4.2 Planned treatment**

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

## LDR REPORT TREATABILITY GROUP DATA SHEET

- No treatment required (skip to Section 5.0)     Treating or plan to treat off site  
 Treating or plan to treat on site                       Treatment options still being assessed

**4.3 Planned treatment method, facility, extent of treatment capacity available:**

Preferred treatment alternative for the 618-4 DU/oil is thermal treatment at a commercial facility, however other treatment technologies are being considered.

**4.4 Treatment schedule information:**

TPA milestone M-16-03I requires DOE to "Complete treatment of drummed waste from the 618-4 Burial Ground in accordance with an approved Remedial Design Report/ Remedial Action Work Plan"

**4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**

M-16-03I for treatment of the waste stream.

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

NA

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

- Yes     No     Unknown

If yes, describe: NA

**4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

None

**4.9 Key assumptions:** Do not know the condition of the drums yet to be retrieved. Waste generation forecast assumes that the waste still buried will remain in its current location through calendar year 2002. Drums currently in storage were overpacked when removed from the 618-4 Burial Ground.

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Expect the treatment residues to go to the onsite Environmental Remediation Disposal Facility for disposal.

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## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 618-4/618-4 DU/Oil Drums      **Waste stream** DU/Oil Drums  
**Treatability/aggregated group identifier:** 618-4 DU/Oil Drums  
**Treatability/aggregated group name:** Depleted uranium in oil from 618-4 Burial Ground

**1.2 Applicable profile number(s) for this waste stream:**

Not applicable

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Drums of depleted uranium metal chips, turnings, cuttings, and sludges immersed in oil, found in the 618-4 Burial Grounds. This waste stream also includes forecasted waste from the 618-5 Burial Grounds. The project assumes that the burial ground will contain analogous waste and waste volumes.

**1.3.2 History of how and where the waste was/is generated:**

The 618-4 Burial Ground was operated from 1955 to 1961. No information is available about the history or source of the waste. The drums were discovered in March 1998 during remediation activities. An estimated 1185 drums were in the burial ground. In April 1998, each of the 260 excavated drums was placed in a vented overpack and those with low oil content were stabilized in mineral oil. The overpacked drums are staged within the Area of Contamination and are being managed in accordance with CERCLA requirements. The remaining drums will be retrieved from the burial ground and moved to a staging area at ERDF in accordance with TPA Milestone M-16-03G.

**1.3.3 Source of the hazardous constituents:**

Unknown

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data

**1.3.5 Additional notes:**

Depleted Uranium chips, turnings, cuttings, and sludges immersed in oil

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)

**LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET**

Tank                       DST                       SST

Other (explain): The containers retrieved to date have been overpacked and are stored in the Area of Contamination at the CERCLA site. The balance of the waste containers remain in the burial ground.

**2.1.1 How was the waste managed prior to storage?**

Waste was located in 618-4 Burial Grounds until encountered during remediation activities.

**2.1.2 Timeframe when waste was placed into storage:**

Drums retrieved in April 1998

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
618-4 AOC	260 drums

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 55

Date of inventory values: 12/31/01

Comments on waste inventory: Retrieved 260 30-gallon containers, which were overpacked following retrieval. Additional drums will be retrieved upon completion of the project.

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

**2.5 Planned management areas for storage of this waste:  Current location  CWC**

DST  Other area(s) list: The waste stream will be moved to a staging area at ERDF in 2003

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	37.000		
2003	130.000		
2004	0.000		
2005	0.000		
2006	0.000		

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Totals 167.000

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment

Assessment has been scheduled. Scheduled date: 2nd quarter CY 2005

Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

None

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

NA

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

The forecasted waste volumes are based on the TPA Milestone M-16-03G, which requires DOE to establish an ERDF staging area to receive waste from the 618-4 Burial Ground by September 30, 2002.

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted: NA

If yes, provide document number or other identification: NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: This waste stream is no longer generated.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

None. This waste was generated between 1955 and 1961.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m<sup>3</sup>

**3.3.2 Projected future waste volume reductions:**

**3.3.3 Bases and assumptions used in above estimates:**

None

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** B Plant  
**Treatability group/aggregated stream name:** B Plant Containment Building Storage
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**

Stream consists of failed equipment (e.g., process jumpers, pumps, etc.) used in the 221-B canyon. Contaminated debris/equipment derived from the processing of "F" listed wastes for the recovery of strontium and cesium. Also contains elemental lead used for counterbalances and shielding. This waste was placed in long term surveillance and maintenance in accordance with Section 8.0 of the Tri-Party Agreement in 1999. The current waste inventory is 294,000 kg, and no additional waste will be stored at this location. The facility is under long term surveillance and maintenance.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**  
 Total volume (cubic meters): \_\_\_\_\_
- 2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 Radiological characteristics**
- 3.1.1 Mixed waste type**       High-level     Transuranic     Low-level
- 3.1.2 Handling (as currently packaged/stored)**     Contact-handled     Remote-handled
- 3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**  
 Waste requires remote handling due to radioactivity level. Confidence high.
- 3.2 Matrix characteristics (physical content)**
- 3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**
- 3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:**  
 Low     Medium     High

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.2.3 Comments on matrix characteristics and/or confidence level:

Waste inventories are currently maintained by estimates of mass. A more detailed determination of waste volume would require extensive item identification and specific drawing information. At this time, obtaining this information is cost and schedule prohibitive.

### 3.3 Regulated contaminated characteristics

#### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater  Non-wastewater  Unknown

#### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
F001	1,1,1-Trichloroethane	Solvent Wastes	unknown	Process knowledge	DEBRIS STDS IN 40 CFR 268.45
F002	Methylene Chloride	Solvent Wastes	unknown	Process knowledge	DEBRIS STDS IN 40 CFR 268.45
F003	Acetone & Hexone	Solvent Wastes	unknown	Process knowledge	DEBRIS STDS IN 40 CFR 268.45
F004	o-Cresol & p-Cresol	Solvent Wastes	unknown	Process knowledge	DEBRIS STDS IN 40 CFR 268.45
F005	Methyl Ethyl Ketone	Solvent Wastes	unknown	Process knowledge	DEBRIS STDS IN 40 CFR 268.45

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

#### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

List:

No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)

None (i.e., all constituents/waste numbers of this waste stream still require treatment)

#### 3.3.4 Does this waste stream contain PCBs?

## LDR REPORT TREATABILITY GROUP DATA SHEET

Yes  No  Unknown If no or unknown, skip to Section 3.3.5

**3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?**

Yes  No  Unknown

**3.3.4.2 Indicate the PCB concentration range (ppm)**

<50  ≥ 50  Unknown

**3.3.5 What is the confidence level for the regulated contaminant characteristic data?**

Low  Medium  High

**3.3.6 Comments on regulated contaminant characteristics and/or confidence level:**

An assumption has been made that it is unlikely additional waste codes will be required.

### 4.0 WASTE STREAM TREATMENT

**4.1 Is this stream currently being treated?**  Yes  No

If yes, provide details: NA

**4.2 Planned treatment**

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)  Treating or plan to treat off site  
 Treating or plan to treat on site  Treatment options still being assessed

**4.3 Planned treatment method, facility, extent of treatment capacity available:**

Until a final decision is made on the Canyon Disposition Initiative, no commitments will be made for waste treatment and disposal.

**4.4 Treatment schedule information:**

Treatment schedule will be determined after a final decision has been made on the Canyon Disposition Initiative

**4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**

B-Plant is under long term surveillance and maintenance in accordance with Section 8.0 of the Tri-Party Agreement Action Plan, Facility Decommissioning Process.

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

None

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes  No  Unknown

If yes, describe: NA

## LDR REPORT TREATABILITY GROUP DATA SHEET

- 4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

NA

- 4.9 Key assumptions:** None at this time.

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Disposition of B-Plant waste will be determined after a final decision has been made on the Canyon Disposition Initiative. If waste is not left in place, waste will be disposed of in the LLBG Subtitle-C or LLBG LLW trenches depending on the treatment performed.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** B Plant/221-B, Containment      **Waste stream** Containment Building Storage
- Treatability/aggregated group identifier: B Plant
- Treatability/aggregated group name: B Plant Containment Building Storage

**1.2 Applicable profile number(s) for this waste stream:**

None

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Failed equipment (e.g., process jumpers, pumps, etc.) used in the 221-B canyon.

**1.3.2 History of how and where the waste was/is generated:**

Waste was generated during B-Plant operations and facility deactivation

**1.3.3 Source of the hazardous constituents:**

B-Plant process operations

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Process knowledge

**1.3.5 Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)
- Tank                     DST                             SST
- Other (explain): Containment building

**2.1.1 How was the waste managed prior to storage?**

Failed process equipment located in the containment building.

**2.1.2 Timeframe when waste was placed into storage:**

Waste was generated until September 1998 and stored in the B-Plant Complex

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
221-B	

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): \_\_\_\_\_

Date of inventory values: 12/31/01

Comments on waste inventory: Quantity estimated at 294,000 kg. A more detailed determination of waste volume would require extensive item identification and specific drawing information. At this time, obtaining this information is cost and schedule prohibitive

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list:

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment 12/2000, A&E-00-ASS-075

Assessment has been scheduled. Scheduled date: \_\_\_\_\_ Next assessment scheduled for April 2003

Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

B-Plant is under long term surveillance and maintenance in accordance with Section 8.0 of the Tri-

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### Party Agreement

- 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

- 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

- 2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Additional characterization could be required for treatment or disposal of the waste located in the facility. Milestones will be established as necessary in accordance with Section 8.7 of the Tri-Party Agreement Action Plan.

If yes, provide Tri-Party Agreement milestone number(s): NA

- 2.12 Other key assumptions related to storage, inventory, and generation information:**

No additional waste will be stored at this location

### 3.0 WASTE MINIMIZATION

- 3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

NA

- 3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

**3.3.2 Projected future waste volume reductions:**

### LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

<u>Year</u>	<u>m3</u>	<u>and/or</u>	<u>kg</u>
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	<u>0.000</u>		<u>                    </u>
Totals	0.000		

**3.3.3 Bases and assumptions used in above estimates:**

No additional waste will be generated.

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** B Plant Cell 4 Waste  
**Treatability group/aggregated stream name:** B Plant complex cell 4 waste
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**

Waste resulted from WESF hot cell maintenance waste (i.e. manipulator boots, light bulbs, HEPA filters, misc. debris). Facility was placed in long term surveillance and maintenance in 1999. No additional waste will be stored in this location as the facility is under long term surveillance and maintenance.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 1.400

- 2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 Radiological characteristics**

**3.1.1 Mixed waste type**       High-level     Transuranic     Low-level

**3.1.2 Handling (as currently packaged/stored)**     Contact-handled     Remote-handled

**3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

High personnel dose potential, remote handled. Range from 200 mR to 500 R at 30 cm. Confidence high. B Plant transitioned to Environmental Restoration program; no additional waste will be placed in storage.

- 3.2 Matrix characteristics (physical content)**

**3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**

**3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:**

Low     Medium     High

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.2.3 Comments on matrix characteristics and/or confidence level:

Lead component represents <1% of the entire waste matrix as it is mixed with other miscellaneous non-hazardous radioactive materials in the drum due to packaging constraints in WESF. The lead component is lead solder from contaminated light bulbs. However, due to the packaging constraints, if a drum contains lead in any proportions, the entire drum is managed appropriately for the lead component.

### 3.3 Regulated contaminated characteristics

#### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater  Non-wastewater  Unknown

#### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D008	Lead-contaminated	Waste Lead Char	>5 mg/L	Process knowledge	5.0 MG/L

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

#### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

List:

No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)

None (i.e., all constituents/waste numbers of this waste stream still require treatment)

#### 3.3.4 Does this waste stream contain PCBs?

Yes  No  Unknown If no or unknown, skip to Section 3.3.5

##### 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?

Yes  No  Unknown

##### 3.3.4.2 Indicate the PCB concentration range (ppm)

## LDR REPORT TREATABILITY GROUP DATA SHEET

<50    ≥ 50    Unknown

**3.3.5 What is the confidence level for the regulated contaminant characteristic data?**

Low    Medium    High

**3.3.6 Comments on regulated contaminant characteristics and/or confidence level:**

None

### 4.0 WASTE STREAM TREATMENT

**4.1 Is this stream currently being treated?**    Yes    No

If yes, provide details:   NA

**4.2 Planned treatment**

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)    Treating or plan to treat off site  
 Treating or plan to treat on site    Treatment options still being assessed

**4.3 Planned treatment method, facility, extent of treatment capacity available:**

Disposition of B-Plant waste will be determined after a decision is made on the Canyon Disposition Initiative.

**4.4 Treatment schedule information:**

Schedule will be determined after a final decision has been made on the Canyon Disposition Initiative.

**4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**

B-Plant is under long term surveillance and maintenance in accordance with Section 8.0 of the Tri-Party Agreement.

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

NA

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes    No    Unknown

If yes, describe: NA

**4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

NA

**4.9 Key assumptions:** None

### 5.0 WASTE STREAM DISPOSAL

## **LDR REPORT TREATABILITY GROUP DATA SHEET**

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Final decision on the Canyon Disposition Initiative will affect the waste stream disposal options. If appropriate, the waste will be disposed of in the LLBG Subtitle-C or LLBG LLW trenches depending on the treatment performed.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** B Plant/221-B, Cell 4                      **Waste stream** Cell 4  
    **Treatability/aggregated group identifier:**    B Plant Cell 4 Waste  
    **Treatability/aggregated group name:**    B Plant complex cell 4 waste

**1.2 Applicable profile number(s) for this waste stream:**

NA

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

WESF hot cell maintenance waste (i.e., manipulator boots, light bulbs, HEPA filters, misc. debris).

**1.3.2 History of how and where the waste was/is generated:**

Waste was generated during B-Plant and WESF operations

**1.3.3 Source of the hazardous constituents:**

Hazardous constituents resulting from facility process operations

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Process knowledge

**1.3.5 Additional notes:**

Waste volumes are from past operations. The facility is now under long term surveillance and maintenance in accordance with the Tri-Party Agreement. No additional waste volumes are generated or stored at this location.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                       DST                       SST  
 Other (explain):

**2.1.1 How was the waste managed prior to storage?**

Waste was located in WESF hot cells.

**2.1.2 Timeframe when waste was placed into storage:**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Drums placed in storage between 1988 to 1997

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
B-PLANT CELL 4	7 drums

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 1.4  
 Date of inventory values: 12/31/01  
 Comments on waste inventory: No additional waste will be stored at B-Plant

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list:

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	<u>0.000</u>		<u>                    </u>
Totals	0.000		

### 2.7 DOE Storage Compliance Assessment information:

Assessment has been completed. Reference to most recent assessment: 12/2000, A&E-00-ASS-075

Assessment has been scheduled. Scheduled date: Next DOE assessment is scheduled for April 2003

Other. Explain:

### 2.8 Applicable Tri-Party Agreement milestones related to storage at this location:

B-Plant is under long term surveillance and maintenance in accordance with Section 8.0 of the Tri-

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Party Agreement.

- 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

- 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

- 2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Additional characterization of this waste could be required for treatment and disposal. Milestones will be established as necessary in accordance with Section 8.7 of the Tri-Party Agreement Action Plan.

If yes, provide Tri-Party Agreement milestone number(s): NA

- 2.12 Other key assumptions related to storage, inventory, and generation information:**

No additional waste will be stored at this location.

### 3.0 WASTE MINIMIZATION

- 3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

No additional waste is being generated at this location.

- 3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):**

**3.3.2 Projected future waste volume reductions:**

## **LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET**

### **3.3.3 Bases and assumptions used in above estimates:**

None

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** Cesium and Strontium Capsules  
**Treatability group/aggregated stream name:** Cesium and Strontium Capsules

**1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**

Cesium and strontium were reclaimed from Tank Farm waste as a product, separated and purified at B Plant, and converted to dry salt for storage in capsules at WESF. The cesium and strontium capsules were declared waste in 1997 with the application for a Part A, Form 3 permit application. The subject waste consists of 1335 cesium capsules and 601 strontium capsules. The capsules are stored in pool cells at WESF.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

**2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 2.000

**2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.0 WASTE STREAM CHARACTERIZATION

**3.1 Radiological characteristics**

**3.1.1 Mixed waste type**  High-level  Transuranic  Low-level

**3.1.2 Handling (as currently packaged/stored)**  Contact-handled  Remote-handled

**3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

The contents consist of purified cesium and strontium salts in the form of cesium chloride and strontium fluoride. The curie content of each capsule varies depending on when it was reclaimed and the amount of impurities it contains. With the daughter products included, it is estimated that there are 90.1 mega curies of cesium and 39.7 mega curies of strontium as of 01/01/2002.

**3.2 Matrix characteristics (physical content)**

**3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:

Low  Medium  High

### 3.2.3 Comments on matrix characteristics and/or confidence level:

None

## 3.3 Regulated contaminated characteristics

### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater  Non-wastewater  Unknown

### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D005	TC-Barium	Radioactive	0.55-0.94%	(1), (2)	HLVIT
D005	TC-Barium	Radioactive	0.1-2%	(2), (3)	HLVIT
D006	TC-Cadmium	Radioactive	0.02%	(1), (2)	HLVIT
D006	TC-Cadmium	Radioactive	<0.1%	(2), (3)	HLVIT
D007	TC-Chromium	Radioactive	0.02-1.4%	(1), (2)	HLVIT
D007	TC-Chromium	Radioactive	<0.2%	(2), (3)	HLVIT
D008	TC-Lead	Radioactive	0.14-1.4%	(1), (2)	HLVIT
D008	TC-Lead	Radioactive	<0.2%	(2), (3)	HLVIT
D011	TC-Silver	Radioactive	NA	(1), (2)	HLVIT
D011	TC-Silver	Radioactive	Unknown	(2), (3)	HLVIT
WT02	Toxic, DW	NA		(1)	None
WT02	Toxic, DW	NA		(3)	None

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

## LDR REPORT TREATABILITY GROUP DATA SHEET

- List:
- No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)
- None (i.e., all constituents/waste numbers of this waste stream still require treatment)

### 3.3.4 Does this waste stream contain PCBs?

- Yes  No  Unknown If no or unknown, skip to Section 3.3.5

#### 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?

- Yes  No  Unknown

#### 3.3.4.2 Indicate the PCB concentration range (ppm)

- <50  ≥ 50  Unknown

### 3.3.5 What is the confidence level for the regulated contaminant characteristic data?

- Low  Medium  High

### 3.3.6 Comments on regulated contaminant characteristics and/or confidence level:

None

## 4.0 WASTE STREAM TREATMENT

### 4.1 Is this stream currently being treated? Yes No

If yes, provide details: NA

### 4.2 Planned treatment

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

- No treatment required (skip to Section 5.0)  Treating or plan to treat off site
- Treating or plan to treat on site  Treatment options still being assessed

### 4.3 Planned treatment method, facility, extent of treatment capacity available:

Currently plan to treat by vitrification.

### 4.4 Treatment schedule information:

Treatment schedule is proposed as part of the Cesium/Strontium Project Management Plan HNF-SD-WM-PMP-025, Rev. 0. Modification of this plan is expected, dependent upon treatment plan changes. Capsules are expected to be stored at the WESF through 2022 with shipments beginning in 2018. Shipments to the high-level waste vitrification unit for treatment will continue through 2022.

### 4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):

M-92-01

## LDR REPORT TREATABILITY GROUP DATA SHEET

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

None. See response to 4.4.

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes  No  Unknown

If yes, describe: NA

**4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

TBD

**4.9 Key assumptions:** None

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Disposal with vitrified tank waste in a national geologic repository.



## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.1.2 Timeframe when waste was placed into storage:**

The capsules were declared waste June 14, 1997

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
225B/POOL CELLS	1936 Capsules

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 2

Date of inventory values: 12/31/01

Comments on waste inventory: There are 1335 cesium capsules and 601 strontium capsules stored in the pool cells.

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list: The waste will be stored at their current location through 2018. From 2018 through 2022, the capsules will be shipped to vitrification to be blended with the high level waste feed currently stored in the double shell tanks.

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

**2.7 DOE Storage Compliance Assessment information:**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Assessment has been completed. Reference to most recent assessment: A&E-SEC-02-002 Dec. 2001

Assessment has been scheduled. Scheduled date:

Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

M-92-01

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

NA

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

NA

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 0 m3

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

None

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 **Treatability group/aggregated stream identifier** DST Waste  
**Treatability group/aggregated stream name:** DST Waste

- 1.2 **Description of waste (list WSRd numbers for this waste stream, as applicable):**  
 Basic aqueous solution that may contain suspended material and/or settled solids (sludge and saltcake). Waste streams are treated with sodium hydroxide and sodium nitrite to minimize tank corrosion and to address compatibility issues. Wastes have been stored in the DST system from 1970 to the present.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 **Current total inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 80,038.866

- 2.2 **Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	16,918.900		
2003	7,804.900		
2004	6,536.900		
2005	9,316.900		
2006	<u>8,742.900</u>		
Totals	49,320.500		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 **Radiological characteristics**

- 3.1.1 **Mixed waste type**     High-level     Transuranic     Low-level  
 3.1.2 **Handling (as currently packaged/stored)**     Contact-handled     Remote-handled  
 3.1.3 **Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

DST system wastes contain the following major radionuclides: 3H, 14C, 60Co, 63Ni, 90Sr, 90Y, 93Zr, 93mNb, 99Tc, 106Ru, 113mCd, 125Sb, 126Sn, 129I, 134Cs, 137Cs, 137mBa, 151Sm, 152Eu, 154Eu, 155Eu, 234U, 235U, 238U, 238Pu, 239Pu, 240Pu, 241Am, and 241Pu.

- 3.2 **Matrix characteristics (physical content)**

- 3.2.1 **Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**
- 3.2.2 **Confidence level for matrix characteristic data in Section 3.2.1:**  
 Low     Medium     High

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.2.3 Comments on matrix characteristics and/or confidence level:

The major constituents of DST system wastes are water and sodium salts of aluminates, nitrate, nitrite, phosphate, hydroxide, carbonate, and sulfate. Some calcium and potassium salts are also present. Chemically complexed waste in the DSTs contain sodium salts of chelating agents ethylenediamine-tetraacetic acid and n-hydroxyethylenediamine-tetraacetic acid. There may also be detectable concentrations of halogenated and nonhalogenated organic compounds and heavy metals such as lead, chromium and cadmium.

### 3.3 Regulated contaminated characteristics

#### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater  Non-wastewater  Unknown

#### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D001	Ignitability	Low TOC Ignitable char liquid	(5)	(5)	DEACT(2); RORGS; COMBST
D002	Corrosivity	(1)	(5)	(5)	HLVIT
D003	Reactivity	Reactive Cyanides	(5)	(5)	590/30 mg/kg
D004	Arsenic	(1)	(5)	(5)	HLVIT
D005	Barium	(1)	(5)	(5)	HLVIT
D006	Cadmium	(1)	(5)	(5)	HLVIT
D007	Chromium	(1)	(5)	(5)	HLVIT
D008	Lead	(1)	(5)	(5)	HLVIT
D009	Mercury	(1)	(5)	(5)	HLVIT
D010	Selenium	(1)	(5)	(5)	HLVIT
D011	Silver	(1)	(5)	(5)	HLVIT
D018	Benzene	NA	(5)	(5)	10 mg/kg (2)
D019	Carbon Tetrachloride	NA	(5)	(5)	6.0 mg/kg (2)
D022	Chloroform	NA	(5)	(5)	6.0 mg/kg (2)
D028	1,2-Dichloroethane	NA	(5)	(5)	6.0 mg/kg (2)
D029	1,1-Dichloroethylene	NA	(5)	(5)	6.0 mg/kg (2)
D030	2,4-Dinitrotoluene	NA	(5)	(5)	140 mg/kg (2)
D033	Hexachlorobutadiene	NA	(5)	(5)	5.6 mg/kg (2)

**LDR REPORT TREATABILITY GROUP DATA SHEET**

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D034	Hexachloroethane	NA	(5)	(5)	30 mg/kg (2)
D035	Methyl Ethyl Ketone	NA	(5)	(5)	36 mg/kg (2)
D036	Nitrobenzene	NA	(5)	(5)	14 mg/kg (2)
D038	Pyridine	NA	(5)	(5)	16 mg/kg (2)
D039	Tetrachloroethylene	NA	(5)	(5)	6.0 mg/kg (2)
D040	Trichloroethylene	NA	(5)	(5)	6.0 mg/kg (2)
D041	2,4,5-trichlorophenol	NA	(5)	(5)	7.4 mg/kg (2)
D043	Vinyl Chloride	NA	(5)	(5)	6.0 mg/kg (2)
F001	1,1,1-Trichloroethane	Spent Solvent	(5)	(5)	6.0 mg/kg
F002	Methylene Chloride	Spent Solvent	(5)	(5)	30 mg/kg
F003	Acetone	Spent Solvent	(5)	(5)	160 mg/kg
F003	Methyl Isobutyl Ketone	Spent Solvent	(5)	(5)	33 mg/kg
F004	Cresols	Spent Solvent	(5)	(5)	5.6 mg/kg (o, m & p); 11.2 mg/kg (mixed)
F005	Methyl Ethyl Ketone	Spent Solvent	(5)	(5)	36 mg/kg
UHC(4)	Antimony	NA	(5)	(5)	1.15 mg/l (6)
UHC(4)	Beryllium	NA	(5)	(5)	1.22 mg/l (6)
UHC(4)	Cyanide (total)	NA	(5)	(5)	590 mg/l (6)
UHC(4)	Nickel	NA	(5)	(5)	11 mg/l (6)
UHC(4)	Thallium	NA	(5)	(5)	0.2 mg/l (6)
UHC(4)	PCBs (sum of Aroclors)	NA	(5)	(5)	10 mg/l (6)
UHC(4)	Selenium	NA	(5)	(5)	5.7 mg/l (6)
WP01	Persistent, EHW & DW	NA	(5)	(5)	NONE (3)
WP02	Persistent, DW	NA	(5)	(5)	NONE
WT01	Toxic, EHW & DW	NA	(5)	(5)	NONE (3)
WT02	Toxic, DW	NA	(5)	(5)	NONE

## LDR REPORT TREATABILITY GROUP DATA SHEET

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

- 1) Radioactive high-level wastes generated during the reprocessing of fuel rods.
- 2) and meet 40CFR268.48.
- 3) Mixed extremely hazardous wastes can be land-disposed in Washington State in DOE facilities in accordance with RCW 70.105.050 (2).
- 4) UHCs which have been identified in waste entering the DST system since 1995. For more information see comments in 3.3.6
- (5) See Section 3.3.6
- (6) TCLP

Tank Waste is subject to non-wastewater treatment standards.

### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

- List:
- No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)
- None (i.e., all constituents/waste numbers of this waste stream still require treatment)

### 3.3.4 Does this waste stream contain PCBs?

- Yes  No  Unknown If no or unknown, skip to Section 3.3.5

#### 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?

- Yes  No  Unknown

#### 3.3.4.2 Indicate the PCB concentration range (ppm)

- <50  ≥ 50  Unknown

### 3.3.5 What is the confidence level for the regulated contaminant characteristic data?

- Low  Medium  High

### 3.3.6 Comments on regulated contaminant characteristics and/or confidence level:

The waste codes assigned to DST system waste are based on process knowledge, and analysis. Dangerous waste constituents in individual tanks will vary based upon process knowledge. Since 1995, LDR requirements have been documented on waste profile sheets for waste sent to the DST system. On September 25, 1995, waste acceptance criteria for waste entering the DST system specifically required the identification of UHCs. There is no documentation of LDR requirements for waste placed in the SST system and for waste sent to the DST system prior to 1995. A list is kept of the UHCs that have been documented since 1995. At this time, UHCs relevant to DOE activities at Hanford are

## LDR REPORT TREATABILITY GROUP DATA SHEET

considered or can reasonably be expected to be present in the waste per references PNNL-11927, PNNL-11943, and PNNL-12039. It has been determined per the framework Agreement for Management of PCBs in Hanford Tank Waste, dated August 31, 2001 that some DSTs contain PCB remediation waste. The risk-based disposal approval process will address the disposal of PCB remediation waste through the waste treatment plant where it is being addressed as a constituent of concern.

### 4.0 WASTE STREAM TREATMENT

- 4.1 **Is this stream currently being treated?**  Yes  No

If yes, provide details: Tank waste is not currently being treated for LDR concerns.

- 4.2 **Planned treatment**

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

- No treatment required (skip to Section 5.0)  Treating or plan to treat off site  
 Treating or plan to treat on site  Treatment options still being assessed

- 4.3 **Planned treatment method, facility, extent of treatment capacity available:**

DST system wastes will be retrieved, pretreated, and solidified for disposal. The wastes may be vitrified in a process that will: destroy or extract organic and cyanide constituents to below treatment standards, neutralize or deactivate dangerous waste and extremely hazardous waste, and immobilize toxic metals.

- 4.4 **Treatment schedule information:**

Per TPA milestone M-62-00:  
M-62-09, Hot Start - 12/31/2007  
M-62-00A, Complete Phase I Pretreatment - 2/2018

- 4.5 **Applicable Tri-Party Agreement milestone numbers (including permitting):**

M-62-00, Complete Pretreatment Processing/Vitrification; M-92-00, Acquisition of New Facilities; M-90-00, New Facilities for IHLAW and ILAW, M-20-00, Permitting for DST, CSB and ILAW, M-43-00, Tank Farm Upgrades; M-48-00 (Proposed) Tank Integrity; M-47-00, Waste Feed Delivery; M-46-00, Tank Space Evaluation .

- 4.6 **Proposed new Tri-Party Agreement treatment milestones:**

Negotiations as outlined in the TPA, to include those in the M-62, series and other modifications necessary to maintain compliance with agreement requirements.

- 4.7 **If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

- Yes  No  Unknown

If yes, describe: The treatment method, high-level vitrification was chosen on the basis of the "Final Environmental Impact Statement for the Tank Waste Remediation System", (DOE/EIS-0189) and the subsequent ROD, as a matter of necessity for compliance

## LDR REPORT TREATABILITY GROUP DATA SHEET

with the regulations for this waste. Waste minimization will be considered during the design and development of the vitrification plant in accordance with federal and state laws and regulations, and DOE orders.

**4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

None at this time

**4.9 Key assumptions:**

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

In accordance with current plans, the vitrified low-activity waste fraction will be disposed of onsite in a retrievable form. The vitrified HLW fraction will be stored on site until the Geologic Repository Program is available to receive wastes for disposal.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 222-S/219-S Waste Handling Facility (WHF)      **Waste stream** Bulk Aqueous Liquids
- Treatability/aggregated group identifier: DST Waste
- Treatability/aggregated group name: DST Waste

**1.2 Applicable profile number(s) for this waste stream:**

None

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Aqueous liquid waste is generated from analytical procedures, unused or expired standards and reagents, and unused Tank Farm samples.

**1.3.2 History of how and where the waste was/is generated:**

This waste stream is generated from analytical procedure operations, unused samples, unused or expired standards and reagents. The facility will generate this waste throughout the 222-S complex (Analytical Procedures, Hot Cell, 219-S WHF operations).

**1.3.3 Source of the hazardous constituents:**

Hanford generating facilities (e.g. LLBG, PFP, Tank Farms, K-Basins, ETF, ERDF, etc.). Analytical procedures standards and reagents.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Waste Stream Fact Sheets (WSFS), Container Disposal Request (CDR), Inventory sheets, MSDSs, and Request for Sample Analysis.

**1.3.5 Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)
- Tank                     DST                             SST
- Other (explain):

**2.1.1 How was the waste managed prior to storage?**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Per the Hanford Facility Dangerous Waste Permit Application, 222-S Laboratory Complex (DOE/RL-91-27 Revision 1)

### 2.1.2 Timeframe when waste was placed into storage:

The last transfer of 219-S waste to the DST System occurred on June 13, 2001. Thus the timeframe would be from that date until December 31, 2001 for the purposes of this report.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
219S WHF	3

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 23.766

Date of inventory values: 1/14/02

Comments on waste inventory: The volume is rounded to the nearest cubic meter. The waste volume was based on actual tank readings. (CY 2001=6270.7 gallons.). A fourth tank, Tank 103 is inactive and only contains a heel. Tank 103 does not contribute to this volume.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? N/A

When is this capacity expected to be reached N/A

Bases and assumptions used: n/a

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list:

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	37.900		
2003	37.900		
2004	37.900		
2005	37.900		
2006	37.900		
Totals	189.500		

### 2.7 DOE Storage Compliance Assessment information:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Assessment has been completed. Reference to most recent assessment: A&E-SEC-01-018  
 Assessment has been scheduled. Scheduled date:  
 Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**  
M-20-22

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**  
 Yes  No

If yes, summarize releases and quantities and provide date:  
n/a

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**  
 Yes  No

If yes, explain: n/a

**2.11 Is further characterization necessary?**  
 Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Characterization is performed as necessary to facilitate batch transfer of the waste to the Double-Shell Tank System. A commitment is not necessary for this characterization.

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

Tank 103 was flushed and has a remaining heel. The heel will be left in place until the 219-S Waste Handling Facility undergoes RCRA closure as documented in the 222S Laboratory Complex Part B Permit Application. Tank 103 will be left in place and addressed during the closure of the 219-S tank system. The 222-S Laboratory Complex Part B Permit Application and resolution of NOD comments reflects Ecology agreement with this strategy. Tank 103 contents were sampled before tank was emptied per Ecology agreement.

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**  
 Yes  No

If yes, provide date assessment conducted: 9/2000

If yes, provide document number or other identification: Operating and analytical procedures at the 222S Laboratory Complex.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

Currently, the Laboratory optimizes the use of lab ware for the work performed. Proper planning is used prior to waste generation through AJHA pre-job, and consistent review of routine operations minimizes waste generation where possible. Also, the Laboratory constantly seeks innovative opportunities to reduce waste by being aware of current waste minimizing technology.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 7.3 m3

**3.3.2 Projected future waste volume reductions:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

**3.3.3 Bases and assumptions used in above estimates:**

DOE/RL-2000-79- "Pollution Prevention Accomplishments" document reported waste reductions for CY 2000. The waste reduction volume reported above in Section 3.3.1 is a total waste minimization volume for similar waste streams across the 222-S Laboratory; this waste stream may be a portion of what was reported. 222-S has no waste minimization goals for this waste stream; therefore, no projected future waste volume reductions are reported above in Section 3.3.2. However, the analytical process generating this stream is continuously evaluated for waste minimization opportunities.



## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.1.2 Timeframe when waste was placed into storage:**

Staged prior to last evaporator campaign.

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
242-A/TK E-A-1	1

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 0

Date of inventory values: 12/31/01

Comments on waste inventory: Slurry waste will only be in the system during evaporator campaigns.

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? \_\_\_\_\_

When is this capacity expected to be reached \_\_\_\_\_

Bases and assumptions used:

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list:

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	3,785.000		
2003	3,785.000		
2004	3,785.000		
2005	3,785.000		
2006	3,785.000		
Totals	18,925.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment

A&E-00-ASS-073

Assessment has been scheduled. Scheduled date:

Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

NA

- 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

- 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain:

- 2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

If yes, provide Tri-Party Agreement milestone number(s):

- 2.12 Other key assumptions related to storage, inventory, and generation information:**

### 3.0 WASTE MINIMIZATION

- 3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

If yes, provide document number or other identification:

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: No assessment is planned at this time.

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

Operation of the 242-A Evaporator is a waste reduction activity.

- 3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m<sup>3</sup>

**3.3.2 Projected future waste volume reductions:**

Year m<sup>3</sup> and/or kg

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

2002	0.000
2003	0.000
2004	0.000
2005	0.000
2006	0.000
Totals	0.000

### 3.3.3 Bases and assumptions used in above estimates:

Evaporator campaign schedule based on tank farms' forecast.



## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 2.1 Current storage method

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                     DST                                     SST  
 Other (explain):

#### 2.1.1 How was the waste managed prior to storage?

Waste was managed at the specific contributing operating facility or in the SST system.

#### 2.1.2 Timeframe when waste was placed into storage:

From 1971 to the present.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
241-AN	7 Tanks
241-AP	8 Tanks
204-AR	1 Tank
241-AW	6 Tanks
241-AY	2 Tanks
241-AZ	2 Tanks
241-SY	3 Tanks
DCRT	5 Tanks
DST SYSTEM	Diversion Boxes Valve Pits Catch Tanks Vent Station

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 80000

Date of inventory values: 12/31/01

Comments on waste inventory: The volume is rounded to the nearest 1,000 cubic meter. Tank volumes are determined by waste level measurements, which are then converted to volumes. Actual tank volume measurements at any given time may differ from the reported values due to factors such as instrumentation errors, uneven surfaces, and calculation rounding errors.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

- Yes     No

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

If yes, what is the total estimated storage capacity? 118,000 cubic  
meters

When is this capacity expected to be reached 2010

Bases and assumptions used: This date is dependent on the 242-A Evaporator operating at least yearly,  
and the schedule/order of Single-Shell Tank retrieval.

2.5 **Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list:

None

2.6 **Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	13,060.000		
2003	3,970.000		
2004	2,690.000		
2005	5,470.000		
2006	4,920.000		
Totals	30,110.000		

2.7 **DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment A-01-EMD-TF-09

Assessment has been scheduled. Scheduled date: See Table 3-4 for list of scheduled assessments

Other. Explain:

2.8 **Applicable Tri-Party Agreement milestones related to storage at this location:**

M-43-00, Tank Farms Upgrades; M-48-00, Tank Integrity; M-47-00, Waste Feed Delivery; M-90-00,  
New Facilities (CSB, ILAW)

2.9 **Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

N/A

2.10 **Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: N/A

2.11 **Is further characterization necessary?**

Yes  No  Unknown at this time

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

It is unknown if further information will be needed for disposal. Awaiting information such as, variance and delisting petitions. Waste is sampled and characterized per RPP-8093, Fiscal Year 2002 Tank Characterization Technical Sampling Basis and Waste Information Requirements Document, 8/2001 (WIRD document), and the Regulatory Data Quality Objectives, PNNL-12040 Rev 0, 12/1998. Waste received into the tank farms must meet the DST Waste Acceptance criteria prior to receipt.

If yes, provide Tri-Party Agreement milestone number(s): M-44-00

### 2.12 Other key assumptions related to storage, inventory, and generation information:

## 3.0 WASTE MINIMIZATION

### 3.1 Has a waste minimization assessment been completed for this stream?

Yes  No

If yes, provide date assessment conducted: 9/1995

If yes, provide document number or other identification: P20A ID Code 95-0007

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:

### 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):

Some of the waste sent to the DST system is reduced at the generating location through pretreatment and recycling of streams. Waste is also minimized by treatment at the 242-A Evaporator. The frequency and volumes of flush solutions has also been minimized.

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 2500 m<sup>3</sup>

#### 3.3.2 Projected future waste volume reductions:

Year	m <sup>3</sup>	and/or	kg
2002	2,600.000		
2003	6,000.000		
2004	0.000		
2005	5,000.000		
2006	5,000.000		
Totals	18,600.000		

#### 3.3.3 Bases and assumptions used in above estimates:

The waste volume reduction is based on 242-A Evaporator reduction for CY2001. Projected waste volume reductions are based on Evaporator campaigns.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

1.1 **Plant/unit name:** HO-64-4275/Tank Trailer Waste      **Waste stream** Tank Trailer HO-64-4275 Waste

Treatability/aggregated group identifier: DST Waste

Treatability/aggregated group name: DST Waste

1.2 **Applicable profile number(s) for this waste stream:**

1.3 **Waste stream source information**

1.3.1 **General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Hydrotesting water, maintenance wastes, laboratory wastes.

1.3.2 **History of how and where the waste was/is generated:**

The tank trailer was used to transport rain water, raw water, operations maintenance wastes and laboratory wastes and contains a heel.

1.3.3 **Source of the hazardous constituents:**

Hazardous chemicals used in operations, maintenance and laboratory activities.

1.3.4 **Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data and process knowledge.

1.3.5 **Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

2.1 **Current storage method**

Container (pad)     Container (covered)     Container (retrievably buried)

Tank                       DST                       SST

Other (explain): Tank trailer

2.1.1 **How was the waste managed prior to storage?**

Managed at the facility which generated the waste.

2.1.2 **Timeframe when waste was placed into storage:**

1999 to the present

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
HO-64-4275	1 tank trailer

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 0.1

Date of inventory values: 12/31/01

Comments on waste inventory: The tank trailer is pumped as empty as it can be pumped, however, it is not RCRA empty.

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? N/A

When is this capacity expected to be reached N/A

Bases and assumptions used: N/A

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list:

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment

Assessment has been scheduled. Scheduled date:

Other. Explain: Not scheduled at this time. This is a vehicle which is used to transport waste from one facility to another. It can not be pumped empty enough to be declared RCRA empty. It is used on a periodic basis, when a direct connection to the DST system is not available.

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

None

- 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

N/A

- 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: N/A

- 2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

If yes, provide Tri-Party Agreement milestone number(s):

- 2.12 Other key assumptions related to storage, inventory, and generation information:**

N/A

### 3.0 WASTE MINIMIZATION

- 3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

N/A

If yes, provide document number or other identification:

N/A

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: No assessment scheduled at this time.

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

None

- 3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):**

0 m<sup>3</sup>

**3.3.2 Projected future waste volume reductions:**

Year      m<sup>3</sup>      and/or      kg

### LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

2002	0.000
2003	0.000
2004	0.000
2005	0.000
2006	0.000
Totals	0.000

**3.3.3 Bases and assumptions used in above estimates:**

None

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** PFP/241-Z, Mixed Waste Tanks      **Waste stream** Mixed Waste Tanks  
     Treatability/aggregated group identifier: DST Waste  
     Treatability/aggregated group name: DST Waste

**1.2 Applicable profile number(s) for this waste stream:**

None

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

The liquid waste in the 241-Z dangerous waste tank system was and continues to be generated from PFP development and analytical laboratory testing and procedures, operation of the precipitation processes, and from miscellaneous facility support and cleanout flush activities.

The waste received by the 241-Z dangerous waste tank system may contain arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, or carbon tetrachloride (designated as waste number D019), based on process knowledge, modeling, and some sampling. The wastes are chemically adjusted to a pH of greater than 12.5 to ensure compatibility of the waste and tank construction materials.

**1.3.2 History of how and where the waste was/is generated:**

These tanks are used to store and treat the radioactive liquid wastes (RLW) generated in the PFP before transfer to the tank farms. Also see item 1.3.1 above.

**1.3.3 Source of the hazardous constituents:**

1) Hazardous chemicals are added to meet DST acceptance criteria 2) Hazardous constituents in the process and laboratory waste are discharged from the plant to the tanks.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Process knowledge, modeling, and some sampling.

**1.3.5 Additional notes:**

These liquid wastes are not treated to LDR standards prior to transfer to the DST System.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Tank             DST             SST  
 Other (explain):

### 2.1.1 How was the waste managed prior to storage?

Laboratory waste and facility support activities waste are either accumulated in satellite accumulation or 90 day areas after generation and prior to discharge to the 241-Z mixed waste tanks or introduced directly into the tank waste system upon generation of the waste. Waste generated from the processing operations (for example, Precipitation Processes), are introduced to the 241-Z mixed waste tanks at the point of generation.

### 2.1.2 Timeframe when waste was placed into storage:

Waste is accumulated into a 12,000 kg batch and then transferred to the DST system.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
241-Z	4 Tanks

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 15  
 Date of inventory values: 12/31/01  
 Comments on waste inventory: Rounded to the nearest cubic meter.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

- Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location CWC

- DST  Other area(s) list:

- None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	36.000		
2003	12.000		
2004	24.000		
2005	24.000		
2006	0.000		

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Totals 96.000

### 2.7 DOE Storage Compliance Assessment information:

- Assessment has been completed. Reference to most recent assessment: 241-Z TSD Compliance Assessment, A&E-00-ASSMT-074
- Assessment has been scheduled. Scheduled date:
- Other. Explain:

### 2.8 Applicable Tri-Party Agreement milestones related to storage at this location:

M-32-01

### 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?

- Yes  No

If yes, summarize releases and quantities and provide date:

NA

### 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?

- Yes  No

If yes, explain: NA

### 2.11 Is further characterization necessary?

- Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

The waste is characterized prior to each batch transfer in accordance with applicable acceptance criteria for transfer to the DST system. No characterization commitment needed because it is performed as part of normal requirements to transfer waste

If yes, provide Tri-Party Agreement milestone number(s): NA

### 2.12 Other key assumptions related to storage, inventory, and generation information:

NONE

## 3.0 WASTE MINIMIZATION

### 3.1 Has a waste minimization assessment been completed for this stream?

- Yes  No

If yes, provide date assessment conducted:

CY 2001

If yes, provide document number or other identification:

PFP 2001 Waste Minimization Evaluation for LDR Report Waste Streams, Letter#

**LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET**

M2100-02-016

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

PFP has a waste minimization program. A hierarchical approach to environmental management is applied to all types of pollution and waste generating activities. Pollution prevention and waste minimization, through source reduction, is the preferred option, followed by environmentally safe recycling. Treatment to reduce the quantity, toxicity, and/or mobility will be considered only when prevention or recycling is not possible or practical. Environmentally safe disposal is the last option. Segregation is applicable in all of these activities.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

**3.3.2 Projected future waste volume reductions:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

**3.3.3 Bases and assumptions used in above estimates:**

PFP is currently in a clean up and stabilization mode. Clean up and stabilization operations tend to increase production of waste. PFP has a waste minimization program and is currently undergoing a Site Strategic Pollution Prevention Opportunity Assessment, which will identify if there are further opportunities to reduce waste production or produce waste in a less hazardous form.

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** ERDF -- Direct Disposal  
**Treatability group/aggregated stream name:** ERDF -- Direct Disposal
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**  
 Remediation waste generated from excavation of waste sites, D&D, and monitoring and treatment of groundwater. Waste stream is generated pursuant to Records of Decision or other CERCLA Authorization.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

**2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 20.200

**2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	3,724.550		
2003	3,624.550		
2004	3,624.550		
2005	3,624.550		
2006	<u>3,624.550</u>		
Totals	18,222.750		

### 3.0 WASTE STREAM CHARACTERIZATION

**3.1 Radiological characteristics**

**3.1.1 Mixed waste type**       High-level     Transuranic     Low-level

**3.1.2 Handling (as currently packaged/stored)**     Contact-handled     Remote-handled

**3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

Waste profiles are prepared for each waste stream disposed of at ERDF and must meet the ERDF Waste Acceptance Criteria.

**3.2 Matrix characteristics (physical content)**

**3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**

**3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:**

Low     Medium     High

**3.2.3 Comments on matrix characteristics and/or confidence level:**

ERDF accepts a large volume of CERCLA remediation waste including soil, concrete

## LDR REPORT TREATABILITY GROUP DATA SHEET

rubble, miscellaneous solid waste

### 3.3 Regulated contaminated characteristics

#### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater     Non-wastewater     Unknown

#### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D009	Mercury	Low Mercury	**	analytical data/ process knowledge	0.025 mg/l TCLP
F001	Carbon Tetrachloride	Spent Solvent	**	analytical data/ process knowledge	4.8 mg/l TCLP
F002	Methylene Chloride	Spent Solvent	**	analytical data/ process knowledge	30 mg/l
F003	Methanol	Spent Solvent	**	analytical data/ process knowledge	0.75 mg/l TCLP
F004	Cresol-mixed Isomers	Spent Solvent	**	analytical data/ process knowledge	5.6 mg/l, meet 268.48
F005	Methyl ethyl ketone	Spent Solvent	**	analytical data/ process knowledge	36 mg/l
WP02	Persistent DW	NA	**	analytical data/ process knowledge	None
WT02	Toxic, DW	NA	**	analytical data/ process knowledge	None

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

Mixed extremely hazardous wastes may be land disposed in Washington State in DOE facilities in accordance with RCW 70.105.050(2)

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

- List: D009, F001, F002, F003, F004, F005, WP02, WT02
- No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)
- None (i.e., all constituents/waste numbers of this waste stream still require treatment)

### 3.3.4 Does this waste stream contain PCBs?

- Yes  No  Unknown If no or unknown, skip to Section 3.3.5

#### 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?

- Yes  No  Unknown

#### 3.3.4.2 Indicate the PCB concentration range (ppm)

- <50  ≥ 50  Unknown

### 3.3.5 What is the confidence level for the regulated contaminant characteristic data?

- Low  Medium  High

### 3.3.6 Comments on regulated contaminant characteristics and/or confidence level:

All of the waste disposed of at ERDF is assessed against the ERDF Waste Acceptance Criteria, BHI-00139, Rev. 3. Section 4.3.4 of the acceptance criteria addresses disposal of PCB contaminated waste.

## 4.0 WASTE STREAM TREATMENT

### 4.1 Is this stream currently being treated? Yes No

If yes, provide details: NA

### 4.2 Planned treatment

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

- No treatment required (skip to Section 5.0)  Treating or plan to treat off site
- Treating or plan to treat on site  Treatment options still being assessed

### 4.3 Planned treatment method, facility, extent of treatment capacity available:

NA

### 4.4 Treatment schedule information:

No treatment is required

### 4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):

## LDR REPORT TREATABILITY GROUP DATA SHEET

M-16-00

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

NA

**4.7 If treating or planning to treat-on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes  No  Unknown

If yes, describe: NA, See section 4.2

**4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

NA

**4.9 Key assumptions:** No treatment required.

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Waste is disposed of at ERDF

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 200 LEF/200 ETF, ERDF Debris      **Waste stream** CERCLA Debris  
    **Treatability/aggregated group identifier:** ERDF -- Direct Disposal  
    **Treatability/aggregated group name:** ERDF -- Direct Disposal

**1.2 Applicable profile number(s) for this waste stream:**

EFTCERCLA001, ETFMISC001

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Process contacted debris generated from maintenance and clean-up activities.

**1.3.2 History of how and where the waste was/is generated:**

Generated during operation and maintenance activities at the 200 Area Effluent Treatment Facility (ETF) and associated facilities.

**1.3.3 Source of the hazardous constituents:**

Waste from CERCLA activities

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data and process knowledge.

**1.3.5 Additional notes:**

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)       Container (covered)       Container (retrievably buried)  
 Tank                       DST                       SST  
 Other (explain):

**2.1.1 How was the waste managed prior to storage?**

Waste was in the process of being generated.

**2.1.2 Timeframe when waste was placed into storage:**

09/01 - 12/01 for current inventory. This type waste has been generated at this location since

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

1997.

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
2025E	3 boxes
2025E	26 Drums

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 9.2  
 Date of inventory values: 12/31/01  
 Comments on waste inventory:

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? \_\_\_\_\_

When is this capacity expected to be reached \_\_\_\_\_

Bases and assumptions used:

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list:

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	28.350		
2003	28.350		
2004	28.350		
2005	28.350		
2006	28.350		
Totals	141.750		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment: 09/2000, A&E-00-ASS-070

Assessment has been scheduled. Scheduled date:

Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

N/A

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain:

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

If yes, provide Tri-Party Agreement milestone number(s):

**2.12 Other key assumptions related to storage, inventory, and generation information:**

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

If yes, provide document number or other identification:

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: No assessment planned at this time.

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

Facility operating procedures provide instructions on packaging and segregation of waste.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m<sup>3</sup>

**3.3.2 Projected future waste volume reductions:**

Year      m<sup>3</sup>      and/or      kg

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

2002	0.000
2003	0.000
2004	0.000
2005	0.000
2006	0.000
Totals	0.000

### 3.3.3 Bases and assumptions used in above estimates:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 200 LEF/200 ETF, ERDF Powder    **Waste stream** CERCLA Powder  
Treatability/aggregated group identifier: ERDF -- Direct Disposal  
Treatability/aggregated group name: ERDF -- Direct Disposal

**1.2 Applicable profile number(s) for this waste stream:**

ETFCERCLA001, ETFMISC001

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Secondary waste generated during treatment of CERCLA wastewaters at ETF.

**1.3.2 History of how and where the waste was/is generated:**

Secondary waste is generated from the treatment of wastewater through the 200 Area Effluent Treatment Facility (ETF). The contaminants are destroyed or removed from the wastewater and dried as powder. Sludge waste maybe generated during facility maintenance activities.

**1.3.3 Source of the hazardous constituents:**

Wastewaters managed under the CERCLA program.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data and generator information.

**1.3.5 Additional notes:**

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank     DST     SST  
 Other (explain):

**2.1.1 How was the waste managed prior to storage?**

The waste was in the process of being generated

**2.1.2 Timeframe when waste was placed into storage:**

**LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET**

10/01 - 12/01 for current inventory. This type waste has been generated at this location since 1997.

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
ETF	115 drums

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 11

Date of inventory values: 12/31/01

Comments on waste inventory:

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? \_\_\_\_\_

When is this capacity expected to be reached \_\_\_\_\_

Bases and assumptions used:

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list: Destined for disposal in ERDF.

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	96.200		
2003	96.200		
2004	96.200		
2005	96.200		
2006	96.200		
Totals	481.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment 09/2000, A&E-00-ASS-070

Assessment has been scheduled. Scheduled date:

Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

N/A

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain:

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Characterization required as normal process when a cradle to grave process is being implemented.

If yes, provide Tri-Party Agreement milestone number(s):

**2.12 Other key assumptions related to storage, inventory, and generation information:**

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

If yes, provide document number or other identification:

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: No assessment planned at this time.

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

The ETF removes contaminants from the wastewater and dries them to powder. The wastewaters are segregated and processed to minimize the generation of secondary waste.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

**3.3.2 Projected future waste volume reductions:**

Year m3 and/or kg

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

2002	0.000
2003	0.000
2004	0.000
2005	0.000
2006	0.000
Totals	0.000

### 3.3.3 Bases and assumptions used in above estimates:

NA

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

**1.1 Plant/unit name:** ERDF Direct Disposal/ERDF Direct Disposal      **Waste stream** ERDF Direct Disposal  
**Treatability/aggregated group identifier:** ERDF -- Direct Disposal  
**Treatability/aggregated group name:** ERDF -- Direct Disposal

**1.2 Applicable profile number(s) for this waste stream:**  
Not Applicable

#### 1.3 Waste stream source information

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**  
Remediation waste generated from excavation of waste sites, D&D, and monitoring and treatment of groundwater. Waste stream is generated pursuant to Records of Decision or other CERCLA authorization. This stream is comprised of waste from the 100, 200, 300, and 600 Areas of the Hanford Site, although the majority of the waste is from the 100 Area.

**1.3.2 History of how and where the waste was/is generated:**  
Waste is generated from excavation of waste sites, D&D of facilities, and monitoring and treatment of groundwater.

**1.3.3 Source of the hazardous constituents:**  
The majority of contaminated material resulted from past Hanford operations in which reactor cooling liquid was discharged to cribs, ponds, ditches, and trenches

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**  
Process knowledge and analytical data

**1.3.5 Additional notes:**  
ERDF is a disposal facility.

This waste stream represents mixed wastes that do not require treatment in order to meet Land Disposal Restrictions. Historical data for the five years of ERDF operations show approximately 1.8% of the waste disposed at ERDF being mixed waste, not requiring treatment. Waste requiring treatment prior to disposal are reported separately.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

#### 2.1 Current storage method

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                 DST                                 SST  
 Other (explain): Direct Disposal at ERDF

### 2.1.1 How was the waste managed prior to storage?

Soil and debris is excavated, placed in roll off boxes, and transported to ERDF for disposal.

### 2.1.2 Timeframe when waste was placed into storage:

NA

### 2.2 Inventory locations:

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 0

Date of inventory values: 12/31/01

Comments on waste inventory: Waste is not stored prior to disposal

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location    CWC

DST     Other area(s) list: Waste is disposed of at ERDF

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	3,600.000		
2003	3,500.000		
2004	3,500.000		
2005	3,500.000		
2006	<u>3,500.000</u>		
Totals	17,600.000		

### 2.7 DOE Storage Compliance Assessment information:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Assessment has been completed. Reference to most recent assessment
- Assessment has been scheduled. Scheduled date: 2nd quarter CY 2005
- Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

NA

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

- Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

- Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

- Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

NA

If yes, provide Tri-Party Agreement milestone number(s):

**2.12 Other key assumptions related to storage, inventory, and generation information:**

Mixed waste makes up 2% of the total inventory disposed of at ERDF.

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

- Yes  No

If yes, provide date assessment conducted: N/A

If yes, provide document number or other identification: N/A

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

None

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 0 m3

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

None

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** ERDF -- Treatment  
**Treatability group/aggregated stream name:** ERDF -- Treatment
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**  
 This waste stream reflects mixed waste, contaminated with lead or chromium, that requires treatment prior to disposal at ERDF. The waste is stored at the operable unit, and is shipped to ERDF where the waste where treatment and disposal occur.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**  
 Total volume (cubic meters): 6.000
- 2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	414.000		
2003	388.000		
2004	388.000		
2005	388.000		
2006	388.000		
Totals	1,966.000		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 Radiological characteristics**
- 3.1.1 Mixed waste type**       High-level     Transuranic     Low-level
- 3.1.2 Handling (as currently packaged/stored)**     Contact-handled     Remote-handled
- 3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**  
 ERDF accepts waste from CERCLA clean up actions performed across the Hanford Site. The waste disposed at ERDF meets the ERDF Waste Acceptance Criteria, BHI-00139, Rev. 3.
- 3.2 Matrix characteristics (physical content)**
- 3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**
- 3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:**  
 Low     Medium     High
- 3.2.3 Comments on matrix characteristics and/or confidence level:**

## LDR REPORT TREATABILITY GROUP DATA SHEET

Waste is stabilized in place at time of disposal

### 3.3 Regulated contaminated characteristics

#### 3.3.1 Wastewater/non-wastewater under RCRA

Wastewater     Non-wastewater     Unknown

#### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D007	Chromium	NA	**	process knowledge and analytical data	macroencapsulati on
D008	Lead	lead char.	**	process knowledge and analytical data	macroencapsulati on

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

#### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

List:

No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)

None (i.e., all constituents/waste numbers of this waste stream still require treatment)

#### 3.3.4 Does this waste stream contain PCBs?

Yes     No     Unknown    If no or unknown, skip to Section 3.3.5

##### 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?

Yes     No     Unknown

##### 3.3.4.2 Indicate the PCB concentration range (ppm)

<50     ≥ 50     Unknown

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.3.5 What is the confidence level for the regulated contaminant characteristic data?

Low  Medium  High

### 3.3.6 Comments on regulated contaminant characteristics and/or confidence level:

Spent resins have been sampled and are of high confidence. Lead contaminated remediation waste may or may not contain PCBs. Section 4.3.4 of the ERDF acceptance criteria addresses disposal of PCB contaminated waste.

## 4.0 WASTE STREAM TREATMENT

### 4.1 Is this stream currently being treated? Yes No

If yes, provide details: Waste is stabilized when disposed of at ERDF

### 4.2 Planned treatment

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)  Treating or plan to treat off site  
 Treating or plan to treat on site  Treatment options still being assessed

### 4.3 Planned treatment method, facility, extent of treatment capacity available:

Stabilization capacity is available for treatment within the ERDF on an as needed basis.

### 4.4 Treatment schedule information:

ERDF acceptance of waste requiring treatment is coordinated so treatment and disposal can occur within a short time of receipt of the waste

### 4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):

M-16

### 4.6 Proposed new Tri-Party Agreement treatment milestones:

None

### 4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?

Yes  No  Unknown

If yes, describe: NA

### 4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:

None planned at this time

### 4.9 Key assumptions: One tenth of the mixed waste disposed of at ERDF requires treatment at ERDF.

## 5.0 WASTE STREAM DISPOSAL

## LDR REPORT TREATABILITY GROUP DATA SHEET

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Waste stream is disposed of at ERDF

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 100-HR-3 Spent Resin/CERCLA Resin      **Waste stream** CERCLA Resin  
Resin  
**Treatability/aggregated group identifier:** ERDF -- Treatment  
**Treatability/aggregated group name:** ERDF -- Treatment

- 1.2 Applicable profile number(s) for this waste stream:**  
Not applicable

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Spent ion exchange resins

**1.3.2 History of how and where the waste was/is generated:**

Contaminated ion exchange resins generated during operations of the 100-HR-3 and 100-KR-4 groundwater pump and treat.

**1.3.3 Source of the hazardous constituents:**

Discharge of process liquids to the soil (via cribs, ponds, ditches, and trenches)

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data

**1.3.5 Additional notes:**

The resin will be treated at and disposed of into the ERDF.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

Container (pad)     Container (covered)     Container (retrievably buried)

Tank                       DST                       SST

- Other (explain): Waste is placed in drums or burial boxes awaiting treatment prior to disposal. Stabilization for chromium will be conducted after a contained-in determination has been received from Ecology to remove listed waste codes.

**2.1.1 How was the waste managed prior to storage?**

Waste is managed in the Area of Contamination

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.1.2 Timeframe when waste was placed into storage:**

Spent resin started being generated when the remedial action began. Waste is generated and located in the CERCLA Area of Contamination.

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
OPERABLE UNIT	14 boxes

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 0  
 Date of inventory values: 12/31/01  
 Comments on waste inventory: None

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list: Waste is stored at the 100-HR-3 Area of Contamination prior to being shipped to ERDF for treatment and disposal.

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	8.000		
2003	8.000		
2004	8.000		
2005	8.000		
2006	8.000		
Totals	40.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment

Assessment has been scheduled. Scheduled date:

2nd quarter CY 2005

Other. Explain:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

NA

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

NA

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted: September 2000

If yes, provide document number or other identification: System Optimization

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

The duration that the ion exchange resin will remain in the pump and treat system has been reduced (starting 9/00). As a result, the resins in general will not be mixed waste and can then be regenerated instead of treated/disposed.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

The forecast volume of waste generated by this activity reflects the waste minimization effort undertaken by the project. The waste generation volume assumes that one resin change out per year will be disposed as mixed waste.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** CERCLA Lead/CERCLA Lead      **Waste stream** CERCLA Lead  
Treatability/aggregated group identifier: ERDF -- Treatment  
Treatability/aggregated group name: ERDF -- Treatment

**1.2 Applicable profile number(s) for this waste stream:**

Not applicable

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Lead and lead contaminated remediation waste generated in the 100 and 300 Areas of the Hanford Site from excavation of waste sites and Interim Safe Storage of the Hanford Reactors. Waste stream is generated pursuant to Records of Decision, or other CERCLA authorization documents, mandating remediation of the waste site and disposed of pursuant to the ERDF Record of Decision

**1.3.2 History of how and where the waste was/is generated:**

The majority of waste is contaminated soil resulting from past Hanford operations in which reactor coolant liquids were discharged to cribs, ponds, ditches, and trenches. Lead was used in the reactors for shielding.

**1.3.3 Source of the hazardous constituents:**

Generated as a result of past Hanford Operations, see Section 1.3.2 of this data sheet.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Process knowledge and analytical data

**1.3.5 Additional notes:**

Historically, this waste stream has represented 0.2% of the mixed waste disposed of at ERDF. The volume identified on this waste stream data sheet is based on historical experience of waste disposed of at ERDF.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                 DST                         SST  
 Other (explain): Waste is stored within the CERCLA Area of Contamination

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 2.1.1 How was the waste managed prior to storage?

Soil and debris is excavated or demolished, placed in containers, and transported to ERDF for treatment and disposal.

### 2.1.2 Timeframe when waste was placed into storage:

NA

### 2.2 Inventory locations:

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 0

Date of inventory values: 12/31/01

Comments on waste inventory: Waste is not stored

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: Waste is transferred to ERDF for treatment prior to disposal

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	400.000		
2003	380.000		
2004	380.000		
2005	380.000		
2006	<u>380.000</u>		
Totals	1,920.000		

### 2.7 DOE Storage Compliance Assessment information:

Assessment has been completed. Reference to most recent assessment

Assessment has been scheduled. Scheduled date:

2nd quarter CY 2005

Other. Explain:

### 2.8 Applicable Tri-Party Agreement milestones related to storage at this location:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

NA

- 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

- 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

- 2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

NA

If yes, provide Tri-Party Agreement milestone number(s): NA

- 2.12 Other key assumptions related to storage, inventory, and generation information:**

Mixed waste forecasts are based on an assumption that 0.2% of the mixed waste disposed at of ERDF will require treatment. ERDF forecasts through FY 2003 can be found in the Richland ER Project FY 2001 - 2003 Detailed Work Plan. Volumes for CY 2004 and CY 2005 were assumed to be consistent with the volume forecasted for CY 2003.

### 3.0 WASTE MINIMIZATION

- 3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: No recycling pathways available.

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

- 3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):**

0 m<sup>3</sup>

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

None

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

1.1 **Plant/unit name:** K Basin/K Basin, Lead                      **Waste stream** Misc. Lead  
    **Treatability/aggregated group identifier:**    ERDF -- Treatment  
    **Treatability/aggregated group name:**    ERDF -- Treatment

1.2 **Applicable profile number(s) for this waste stream:**

NA

1.3 **Waste stream source information**

1.3.1 **General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Three 2X4X8 metal boxes containing radioactive contaminated lead bricks, sheets and misc lead are located at 105-KW. The lead is individually wrapped in plastic and placed in the metal boxes. The lead was used for shielding during reactor operations. It is classified as CERCLA waste and will be disposed of at the ERDF facility.

1.3.2 **History of how and where the waste was/is generated:**

The lead was derived during operations of the K Basins reactors. It was used for shielding from radioactivity. The lead was derived from housekeeping efforts in the K Basins facility. At one time recycling and decontamination were considered but no feasible decontamination method was ever approved.

1.3.3 **Source of the hazardous constituents:**

Lead

1.3.4 **Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Process knowledge and container inventory sheets corresponding to the appropriate boxes.

1.3.5 **Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

2.1 **Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                       DST                       SST  
 Other (explain):

2.1.1 **How was the waste managed prior to storage?**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

It was managed as recyclable waste until it was decided to declare it waste.

### 2.1.2 Timeframe when waste was placed into storage:

It was considered mixed waste as of 12/31/01.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
105KW	3

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 6  
 Date of inventory values: 12/31/01  
 Comments on waste inventory: NA

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? 6

When is this capacity expected to be reached NA

Bases and assumptions used: The waste is stored in a CERCLA waste staging area and volume capacity is no issue.

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: Waste will be disposed of at the ERDF facility.

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	6.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	6.000		

### 2.7 DOE Storage Compliance Assessment information:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Assessment has been completed. Reference to most recent assessment:  
 Assessment has been scheduled. Scheduled date: 2nd Quarter CY 2004  
 Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

NA

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

- Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

- Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

- Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

NA

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

Lead is not being used for shielding anymore at K Basins, so no additional inventory is foreseen.

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

- Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

Waste from waste stream is no longer generated.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 0 m3

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

This waste stream is no longer generated.

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 **Treatability group/aggregated stream identifier** Hexone Storage and Treatment Facility  
**Treatability group/aggregated stream name:** Hexone Storage and Treatment Facility
- 1.2 **Description of waste (list WSRd numbers for this waste stream, as applicable):**  
Residual heel content remaining from Reduction/Oxidation (REDOX) Process.

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 **Current total inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 1.064

- 2.2 **Estimated generation projection by calendar year**

<u>Year</u>	<u>m3</u>	<u>and/or</u>	<u>kg</u>
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	<u>0.000</u>		<u>                    </u>
Totals	0.000		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 **Radiological characteristics**

3.1.1 **Mixed waste type**       High-level     Transuranic     Low-level

3.1.2 **Handling (as currently packaged/stored)**     Contact-handled     Remote-handled

3.1.3 **Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

None

- 3.2 **Matrix characteristics (physical content)**

3.2.1 **Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)**

3.2.2 **Confidence level for matrix characteristic data in Section 3.2.1:**

Low     Medium     High

3.2.3 **Comments on matrix characteristics and/or confidence level:**

Samples were taken from three distillation vessels containing process waste.

- 3.3 **Regulated contaminated characteristics**

3.3.1 **Wastewater/non-wastewater under RCRA**

## LDR REPORT TREATABILITY GROUP DATA SHEET

Wastewater     Non-wastewater     Unknown

### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D001	Ignitable	High TOC Ignitable char liquids		process knowledge	RORGS; CMBS; or POLYM
D018	benzene	NA	3.55	TCLP	10 mg/kg, meet 268.48
D019	carbon tetrachloride	NA	2.08	TCLP	6.0 mg/kg, meet 268.48
D023	o-Cresol	NA	89000	TCLP	5.6 mg/kg, meet 268.48
D024	m-Cresol	NA	180000	TCLP	5.6 mg/kg, meet 268.48
D025	p-Cresol	NA	180000	TCLP	5.6 mg/kg, meet 268.48
D027	p-Dichlorobenzene	NA	89000	TCLP	6.0 mg/kg, meet 268.48
D028	1,2-Dichloroethane	NA	2.85	TCLP	6.0 mg/kg, meet 268.48
D029	1,1-Dichloroethylene	NA	3.38	TCLP	6.0 mg/kg, meet 268.48
D030	2,4-Dinitrotoluene	NA	89000	TCLP	140 mg/kg, meet 268.48
D032	Hexachlorobenzene	NA	89000	TCLP	10 mg/kg, meet 268.48
D033	Hexachlorobutadine	NA	89000	TCLP	5.6 mg/kg, meet 268.48
D034	Hexachloroethane	NA	89000	TCLP	30 mg/kg, meet 268.48
D036	Nitrobenzene	NA	89000	TCLP	14 mg/kg, meet 268.48
D037	Pentachlorophenol	NA	180000	TCLP	7.4 mg/kg, meet 268.48
D039	Tetrachlorethylene	NA	1	TCLP	6.0 mg/kg, meet 268.48
D040	Trichloroethylene	NA	3.17	TCLP	6.0 mg/kg, meet 268.48

## LDR REPORT TREATABILITY GROUP DATA SHEET

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D041	2,4,5-Trichlorophenol	NA	89000	TCLP	7.4 mg/kg, meet 268.48
D042	2,4,6-Trichlorophenol	NA	89000	TCLP	7.4 mg/kg, meet 268.48
D043	Vinyl Chloride	NA	2.65	TCLP	6.0 mg/kg, meet 268.48
F003	Methyl isobutyl ketone	Spent Solvent	28000	lab data	33 mg/kg
UHC	Phenol	NA	89000	analytical data	6.2 mg/kg
UHC	bis(2- chloroethyl)ether	NA	89000	analytical data	6 mg/kg
UHC	2-Chlorophenol	NA	89000	analytical data	5.7 mg/kg
UHC	1,3-Dichlorobenzene	NA	89000	analytical data	6 mg/kg
UHC	1,2-Dichlorobenzene	NA	89000	analytical data	6 mg/kg
UHC	2-Nitrophenol	NA	89000	analytical data	13 mg/kg
UHC	Lead	NA	0.995	analytical data	0.75 mg/kg
UHC	PCB	NA	12.19	analytical data	10 mg/kg
UHC	1,1,2,2- tetrachloroethane	NA	54.5	analytical data	6 mg/kg
UHC	1,1,2-trichloroethane	NA	82.5	analytical data	6 mg/kg
UHC	2,4-Dimethylphenol	NA	89000	analytical data	14 mg/kg
UHC	bis(2- chloroethoxy)methan e	NA	89000	analytical data	7.2 mg/kg
UHC	2,4-Dichlorophenol	NA	89000	analytical data	14 mg/kg
UHC	1,2,4- Trichlorobenzene	NA	89000	analytical data	19 mg/kg
UHC	Napthalene	NA	89000	analytical data	5 mg/kg
UHC	4-Chloroaniline	NA	89000	analytical data	16 mg/kg
UHC	4-Chloro-3- methylphenol	NA	89000	analytical data	14 mg/kg
UHC	Hexachlorocyclopent adiene	NA	180000	analytical data	2.4 mg/kg
UHC	2-Chloronaphthalene	NA	89000	analytical data	5.6 mg/kg
UHC	2-Nitroaniline	NA	89000	analytical data	14 mg/kg

## LDR REPORT TREATABILITY GROUP DATA SHEET

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
UHC	Dimethylphthalate	NA	89000	analytical data	28 mg/kg
UHC	Acenaphthylene	NA	89000	analytical data	3.4 mg/kg
UHC	2,6-Dinitrotoluene	NA	89000	analytical data	28 mg/kg
UHC	Acenaphthene	NA	89000	analytical data	3.4 mg/kg
UHC	2,4-Dinitrophenol	NA	89000	analytical data	160 mg/kg
UHC	4-Nitrophenol	NA	89000	analytical data	29 mg/kg
UHC	Diethylphthalate	NA	89000	analytical data	28 mg/kg
UHC	Fluorene	NA	89000	analytical data	3.4 mg/kg
UHC	4-Nitroaniline	NA	89000	analytical data	28 mg/kg
UHC	4,6-Dinitro-2-cresol	NA	180000	analytical data	160 mg/kg
UHC	4-Bromophenyl phenylether	NA	89000	analytical data	15 mg/kg
UHC	Phenanthrene	NA	89000	analytical data	5.6 mg/kg
UHC	Anthracene	NA	89000	analytical data	3.4 mg/kg
UHC	Di-n-butylphthalate	NA	89000	analytical data	28 mg/kg
UHC	Fluoranthene	NA	89000	analytical data	3.4 mg/kg
UHC	Pyrene	NA	89000	analytical data	8.2 mg/kg
UHC	Butylbenzylphthalate	NA	89000	analytical data	28 mg/kg
UHC	Benzo(a)anthracene	NA	89000	analytical data	3.4 mg/kg
UHC	Chrysene	NA	89000	analytical data	3.4 mg/kg
UHC	bis(2- ethylexyl)phthalate	NA	89000	analytical data	28 mg/kg
UHC	Di-n-octylphthalate	NA	89000	analytical data	28 mg/kg
UHC	Benzo(b)fluoranthene	NA	89000	analytical data	6.8 mg/kg
UHC	Benzo(k)fluoranthene	NA	89000	analytical data	6.8 mg/kg
UHC	Benzo(a)pyrene	NA	89000	analytical data	3.4 mg/kg
UHC	Indeno(1,2,3,- c,d)pyrene	NA	89000	analytical data	3.4 mg/kg
UHC	Dibenzo(a,h)anthracene	NA	89000	analytical data	8.2 mg/kg
UHC	Benzo(g,h,i)perylene	NA	89000	analytical data	1.8 mg/kg

## LDR REPORT TREATABILITY GROUP DATA SHEET

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

- List: benzene; carbon tetrachloride; 1,2-Dichloroethane; 1,1-Dichloroethylene; Tetrachloroethylene; Trichloroethylene; Vinyl Chloride
- No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)
- None (i.e., all constituents/waste numbers of this waste stream still require treatment)

### 3.3.4 Does this waste stream contain PCBs?

- Yes  No  Unknown If no or unknown, skip to Section 3.3.5

#### 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?

- Yes  No  Unknown

#### 3.3.4.2 Indicate the PCB concentration range (ppm)

- <50  ≥ 50  Unknown

### 3.3.5 What is the confidence level for the regulated contaminant characteristic data?

- Low  Medium  High

### 3.3.6 Comments on regulated contaminant characteristics and/or confidence level:

Tank waste was sampled in support of interim stabilization effort that is underway.

## 4.0 WASTE STREAM TREATMENT

### 4.1 Is this stream currently being treated? Yes No

If yes, provide details: NA

### 4.2 Planned treatment

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

- No treatment required (skip to Section 5.0)  Treating or plan to treat off site
- Treating or plan to treat on site  Treatment options still being assessed

**LDR REPORT TREATABILITY GROUP DATA SHEET**

- 4.3 Planned treatment method, facility, extent of treatment capacity available:**  
Waste will be interim stabilized.
- 4.4 Treatment schedule information:**  
Interim stabilization is planned for FY 2002
- 4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**  
TSD closure will be coordinated with the OU remediation in accordance with M-15 milestones for 200-IS-1 Operable Unit.
- 4.6 Proposed new Tri-Party Agreement treatment milestones:**  
NA
- 4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**  
 Yes  No  Unknown  
If yes, describe:
- 4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**  
None
- 4.9 Key assumptions:** None

**5.0 WASTE STREAM DISPOSAL**

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Closure of this TSD will be coordinated with the 200-IS-1 Operable Unit remediation.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

1.1 **Plant/unit name:** REDOX/276-S-141/142                      **Waste stream** HSTF Storage  
    **Treatability/aggregated group identifier:**                      Hexone Storage and Treatment Facility  
    **Treatability/aggregated group name:**                              Hexone Storage and Treatment Facility

1.2 **Applicable profile number(s) for this waste stream:**

909, 647

1.3 **Waste stream source information**

1.3.1 **General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Tank and heel content.

1.3.2 **History of how and where the waste was/is generated:**

The Hexone Storage and Treatment Facility (HSTF) received liquid mixed waste from the Reduction/Oxidation (REDOX) Plant and possibly the Hot Semiworks Plant at shutdown of 202-S in 1967. In 1991 and 1992, the tanks were remediated using a distillation process that removed free liquids from the tanks. The tank heel is all that remains in the tank.

1.3.3 **Source of the hazardous constituents:**

The tanks were used to receive and store reagent-grade hexone used in the REDOX process. When the REDOX Plant was deactivated in 1967, the final cycle-recovered hexone from the plant was placed in the hexone storage tanks for storage. Tank 276-S-142 also contained kerosene and TBP from a one-time campaign to separate americium, curium, and promethium from Shippingport reactor blanket fuel in 1966.

1.3.4 **Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Process knowledge and sampling data.

1.3.5 **Additional notes:**

Further information about the history of the TSD unit can be found in the Part A, Form 3 permit application.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

2.1 **Current storage method**

Container (pad)     Container (covered)     Container (retrievably buried)

Tank                       DST                       SST

Other (explain):

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 2.1.1 How was the waste managed prior to storage?

Waste was stored in the tank after being used in the REDOX Plant.

### 2.1.2 Timeframe when waste was placed into storage:

Waste in the tanks was distilled in 1990-1992. The residual heel has been stored in the tanks since the distillation process was completed in 1992.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
276-S-142	1 Tank

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 1.064

Date of inventory values: 12/31/01

Comments on waste inventory: Waste is no longer generated.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list:

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 2.7 DOE Storage Compliance Assessment information:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Assessment has been completed. Reference to most recent assessment
- Assessment has been scheduled. Scheduled date:
- Other. Explain: Not scheduled at this time

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

TSD closure will be coordinated with M-015 milestone for remediation of the 200-IS-1 Operable Unit

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

- Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

- Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

- Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

NA

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

Tank waste is being interim stabilized in place in accordance with Ecology approval.

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

- Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA. Waste stream is no longer generated

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

None

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 0 m3

### 3.3.2 Projected future waste volume reductions:

<u>Year</u>	<u>m3</u>	<u>and/or</u>	<u>kg</u>
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	<u>0.000</u>		<u>          </u>
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

NA

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier LERF/ETF Liquid Waste  
Treatability group/aggregated stream name: LERF/ETF Liquid Waste
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):  
CERCLA and RCRA Wastewaters

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 Current total inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 27,741.406

- 2.2 Estimated generation projection by calendar year

Year	m3	and/or	kg
2002	80,925.040		
2003	80,925.040		
2004	80,925.040		
2005	80,925.040		
2006	<u>80,925.040</u>		<u>                    </u>
Totals	404,625.200		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 Radiological characteristics

3.1.1 Mixed waste type  High-level  Transuranic  Low-level

3.1.2 Handling (as currently packaged/stored)  Contact-handled  Remote-handled

3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):

- 3.2 Matrix characteristics (physical content)

3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)

3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:

Low  Medium  High

3.2.3 Comments on matrix characteristics and/or confidence level:

- 3.3 Regulated contaminated characteristics

3.3.1 Wastewater/non-wastewater under RCRA

Wastewater  Non-wastewater  Unknown

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
D008	Lead	lead	> 5.0 mg/L	knowledge/analysis	0.69 mg/L (1)
D009	Mercury	D009 wastewaters	>0.2 mg/L	knowledge/analysis	0.15 mg/L (1)
F001	1,1,1-trichloroethane, carbon tetrachloride	F001-F005	***	knowledge/analysis	multiple
F002	methylene chloride	F001-F005	***	knowledge/analysis	0.089 mg/L
F003	acetone, methyl isobutyl ketone	F001-F005	***	knowledge/analysis	multiple
F004	cresols	F001-F005	***	knowledge/analysis	0.11 mg/L
F005	methyl ethyl ketone	F001-F005	***	knowledge/analysis	0.28 mg/L
F039	F001-F005 solvent wastes	NA	***	knowledge/analysis	multiple

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

\*\*\* The concentration varies.

The ETF/LERF receives many different liquid waste from many different generators. The generators are required to thoroughly characterize the waste per the ETF/ERF waste analysis plan. Information on actual constituent concentrations and ranges can be found in the regulatory file for each of the generator waste located at the ETF.

### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

- List: Some wastewaters meet treatment standard for F001-F005, F039 on receipt.
- No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)
- None (i.e., all constituents/waste numbers of this waste stream still require treatment)

### 3.3.4 Does this waste stream contain PCBs?

## LDR REPORT TREATABILITY GROUP DATA SHEET

Yes  No  Unknown If no or unknown, skip to Section 3.3.5

**3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?**

Yes  No  Unknown

**3.3.4.2 Indicate the PCB concentration range (ppm)**

<50  ≥ 50  Unknown

**3.3.5 What is the confidence level for the regulated contaminant characteristic data?**

Low  Medium  High

**3.3.6 Comments on regulated contaminant characteristics and/or confidence level:**

### 4.0 WASTE STREAM TREATMENT

**4.1 Is this stream currently being treated?**  Yes  No

If yes, provide details: The 200 Area Effluent Treatment Facility (ETF) is a final status RCRA TSD unit and treats RCRA and CERCLA aqueous wastewaters generated from various locations on the Hanford Site. The contaminants are destroyed or removed from the wastewaters and dried to a powder.

**4.2 Planned treatment**

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)  Treating or plan to treat off site

Treating or plan to treat on site  Treatment options still being assessed

**4.3 Planned treatment method, facility, extent of treatment capacity available:**

The ETF has pH adjustment, ultraviolet/oxidation, filtration, reverse osmosis, degasification, and ion exchange unit operations to remove the contaminants from the wastewaters.

**4.4 Treatment schedule information:**

Continuous

**4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**

NA

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

NA

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes  No  Unknown

If yes, describe: The ETF/LERF does not generate liquid waste. However, the wastewaters are segregated and processed to minimize the generation of waste requiring further

## LDR REPORT TREATABILITY GROUP DATA SHEET

treatment.

- 4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

NA

- 4.9 Key assumptions:** Assume PCB's are less than 0.5 ug/L in feed streams to the LERF/ETF during the forecast period.

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Secondary waste (dry powder) that is generated from the treatment of wastewaters from the ETF is disposed at the Mixed Waste Burial Trenches or ERDF depending on whether the wastewater is designated as RCRA or CERCLA. The delisted wastewater is disposed to a State Approved Land Disposal Site under WAC 173-216. Delisting modification for LERF/ETF is needed to manage other waste streams that require treatment at the ETF.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

1.1 **Plant/unit name:** 200 LEF/LERF Liquids                      **Waste stream**    Wastewater  
    **Treatability/aggregated group identifier:**                      LERF/ETF Liquid Waste  
    **Treatability/aggregated group name:**                              LERF/ETF Liquid Waste

1.2 **Applicable profile number(s) for this waste stream:**

NA

1.3 **Waste stream source information**

1.3.1 **General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Wastewaters generated during RCRA and CERCLA cleanup activities on the Hanford Site are transferred to LERF for interim storage prior to treatment through the ETF. Drummed wastewater generated during RCRA and CERCLA cleanup activities on the Hanford Site are received at the ETF for interim storage prior to treatment through the ETF.

1.3.2 **History of how and where the waste was/is generated:**

Wastewaters generated under the RCRA and CERCLA programs on the Hanford Site. Refer to specific generator source wastewater information.

1.3.3 **Source of the hazardous constituents:**

Refer to specific generator information.

1.3.4 **Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Process knowledge and analytical information - per the RCRA waste analysis plan for LERF/ETF.

1.3.5 **Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

2.1 **Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                       DST                       SST  
 Other (explain): Three surface impoundments (LERF Basins 42, 43, 44).

2.1.1 **How was the waste managed prior to storage?**

At the generator site.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 2.1.2 Timeframe when waste was placed into storage:

Wastewater maybe received at any time depending on generator needs.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
LERF BASINS	3
ETF CONTAINERS	23

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 27680  
Date of inventory values: 12/31/01  
Comments on waste inventory: None

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? \_\_\_\_\_

When is this capacity expected to be reached \_\_\_\_\_

Bases and assumptions used:

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: Wastewater will be treated through the ETF.

None

### 2.6 Estimated generation projection by calendar year:

### 2.7 DOE Storage Compliance Assessment information:

Assessment has been completed. Reference to most recent assessment A&E-00-ASS-070,-071

Assessment has been scheduled. Scheduled date:

Other. Explain:

### 2.8 Applicable Tri-Party Agreement milestones related to storage at this location:

None

### 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?

Yes  No

If yes, summarize releases and quantities and provide date:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain:

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

If yes, provide Tri-Party Agreement milestone number(s):

**2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

If yes, provide document number or other identification:

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

Generators will address waste minimization for their particular waste streams.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

**3.3.2 Projected future waste volume reductions:**

**3.3.3 Bases and assumptions used in above estimates:**

None

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## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 200-UP-1/200-UP-1                      **Waste stream** 200-UP-1  
    Treatability/aggregated group identifier:                      LERF/ETF Liquid Waste  
    Treatability/aggregated group name:                              LERF/ETF Liquid Waste

**1.2 Applicable profile number(s) for this waste stream:**

Profile transmitted to ETF facility via BHI letter dated 1/31/01; CCN #086036

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Groundwater contaminated with uranium, technetium, carbon tetrachloride, and nitrates from the UO3 Plant operations.

**1.3.2 History of how and where the waste was/is generated:**

It is estimated that 4,000 kg of process waste from the UO3 Plant, consisting primarily of dilute nitric acid containing uranium, technetium-99, and small quantities of fission products, was discharged to the soil via the 261-U-1 and 216-U-2 Cribs. The mobile uranium was transported from the soil into the groundwater when large volumes of cooling water were discharged to the adjacent 216-U-16 Crib in 1984. In 1997, the 200-UP-1 Interim Record of Decision required the contaminated groundwater be extracted and transferred to ETF for treatment.

**1.3.3 Source of the hazardous constituents:**

Resulted from liquid discharges to the soil from past Hanford operations.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data and process knowledge

**1.3.5 Additional notes:**

Water is being treated at ETF pursuant to the 200-UP-1 Record of Decision

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                       DST                       SST  
 Other (explain): Transferred to LERF Basin via underground pipeline

**2.1.1 How was the waste managed prior to storage?**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Groundwater is transferred to the LERF Basin as it is being extracted.

**2.1.2 Timeframe when waste was placed into storage:**

NA

**2.2 Inventory locations:**

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 0

Date of inventory values: 12/31/01

Comments on waste inventory: Water is transferred to LERF Basin for treatment

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list: Groundwater is stored at LERF, treated at ETF, and discharged in accordance with the operating permit

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	77,270.000		
2003	77,270.000		
2004	77,270.000		
2005	77,270.000		
2006	<u>77,270.000</u>		
Totals	386,350.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment

Assessment has been scheduled. Scheduled date:

Other. Explain: NA

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

NA -- Groundwater remediation is being performed under the 200-UP-1 Interim Record of Decision

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Waste stream was fully characterized to support development of the 200-UP-1 Record of Decision. Quarterly sampling of groundwater is performed to assess the performance of the remedial action.

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

Forecast assumes no changes to the 200-UP-1 Record of Decision

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: Assessment not warranted. See 3.2 below.

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

None. Generation of this waste stream occurs due to requirements in the 200-UP-1 Record of Decision to remove contaminated groundwater from the aquifer as mandated under the 200-UP-1 Interim Record of Decision

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

**3.3.2 Projected future waste volume reductions:**

Year m3 and/or kg

**LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET**

2002	0.000	
2003	0.000	
2004	0.000	
2005	0.000	
2006	0.000	
Totals	0.000	

**3.3.3 Bases and assumptions used in above estimates:**

NA

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

**1.1 Plant/unit name:** 242-A/242-A Evaporator      **Waste stream** Evaporator Process Condensate  
**Treatability/aggregated group identifier:** LERF/ETF Liquid Waste  
**Treatability/aggregated group name:** LERF/ETF Liquid Waste

**1.2 Applicable profile number(s) for this waste stream:**

242-A Evaporator Process Condensate stored in condensate tank C-100 between campaigns.

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Process condensate from treatment of DST waste in 242-A Evaporator.

**1.3.2 History of how and where the waste was/is generated:**

Waste is generated during evaporator campaigns that begin with waste staging and characterization activities in the tank farms.

**1.3.3 Source of the hazardous constituents:**

DST waste

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data is used to characterize feed to the 242-A Evaporator before it is treated. The RCRA waste analysis plans for 242-A and LERF/ETF govern characterization requirements.

**1.3.5 Additional notes:**

Most process condensate is sent to LERF/ETF for storage and treatment. Some process condensate is stored in condensate tank C-100 at 242-A between campaigns for use in priming the evaporator treatment system at the beginning of the next campaign (waste minimization).

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                     DST                             SST  
 Other (explain):

**2.1.1 How was the waste managed prior to storage?**

Prior to treatment and storage at 242-A, the waste was stored in DST.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.1.2 Timeframe when waste was placed into storage:**

During the last 242-A Evaporator campaign, 03/01 - 04/01.

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
242-A/TK C-100	1

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 34

Date of inventory values: 12/31/01

Comments on waste inventory:

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? \_\_\_\_\_

When is this capacity expected to be reached \_\_\_\_\_

Bases and assumptions used:

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list: Adequate storage and treatment capacity is available through LERF/ETF.

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	3,370.000		
2003	3,370.000		
2004	3,370.000		
2005	3,370.000		
2006	<u>3,370.000</u>		
Totals	16,850.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment

A&E-00-ASS-073

Assessment has been scheduled. Scheduled date:

Other. Explain:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain:

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

If yes, provide Tri-Party Agreement milestone number(s):

**2.12 Other key assumptions related to storage, inventory, and generation information:**

Evaporator campaigns are planned and conducted based on DST needs.

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

If yes, provide document number or other identification:

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: Evaporator treatment process is waste reduction.

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

It is desirable to increase the size of this waste stream--provided it reflects an overall decrease in DST waste volume.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 34 m<sup>3</sup>

**3.3.2 Projected future waste volume reductions:**

Year            m<sup>3</sup>            and/or            kg

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

2002	34.000	
2003	68.000	
2004	68.000	
2005	68.000	
2006	68.000	
Totals	306.000	

### 3.3.3 Bases and assumptions used in above estimates:

Evaporator campaign schedule based on tank farms' forecast.



## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

NA

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
NA	NA

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 0

Date of inventory values: 12/31/01

Comments on waste inventory: Trench 34 leachate is managed in a 90 day accumulation area prior to transfer to LERF/ETF. There is no waste stored.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: LERF/ETF

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	265.000		
2003	265.000		
2004	265.000		
2005	265.000		
2006	265.000		
Totals	1,325.000		

### 2.7 DOE Storage Compliance Assessment information:

Assessment has been completed. Reference to most recent assessment

Assessment has been scheduled. Scheduled date:

Other. Explain: NA

### 2.8 Applicable Tri-Party Agreement milestones related to storage at this location:

NA

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

NA

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

Generation information is based 2001 total. Actual generation is dependent upon the amount of precipitation received each year.

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted: 1997

If yes, provide document number or other identification: Return on Investment: RMW Rain Curtain

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

Currently the trench is outfitted with a rain curtain that diverts approximately 85% of the precipitation received. The diverted precipitation never enters the disposal area and thus does not become mixed waste.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 1020 m<sup>3</sup>

**3.3.2 Projected future waste volume reductions:**

Year                      m<sup>3</sup>                      and/or                      kg

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

2002	1,130.000	
2003	1,130.000	
2004	1,130.000	
2005	1,130.000	
2006	1,130.000	
Totals	5,650.000	

### 3.3.3 Bases and assumptions used in above estimates:

The projected future waste reduction is based on average Hanford Site precipitation and continued use of the current rain curtain.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

**1.1 Plant/unit name:** T Plant Complex/2706-T RCRA Tank System      **Waste stream** Storage-2706-T RCRA Tank System  
**Treatability/aggregated group identifier:** LERF/ETF Liquid Waste  
**Treatability/aggregated group name:** LERF/ETF Liquid Waste

**1.2 Applicable profile number(s) for this waste stream:**

None

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Liquid waste generated as a result of decontamination, treatment activities, and potentially radiologically contaminated precipitation.

**1.3.2 History of how and where the waste was/is generated:**

Waste resulting from decontamination and treatment activities in the 2706-T and 2706-TA Buildings and various other sources (e.g., potentially contaminated rainwater, etc.).

**1.3.3 Source of the hazardous constituents:**

See Section 1.3.1 and 1.3.2

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical and process knowledge

**1.3.5 Additional notes:**

None.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                     DST                             SST  
 Other (explain): NA

**2.1.1 How was the waste managed prior to storage?**

Generated as part of decontamination and treatment activities.

**2.1.2 Timeframe when waste was placed into storage:**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

1999 to present

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
T PLANT COMPLEX	2

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 27.406  
 Date of inventory values: 12/28/01  
 Comments on waste inventory: Inventory subject to fluctuation from decontamination, treatment, and other waste management activities and subsequent shipment to ETF or to another approved location.

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list: ETF or other approved location

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	19.000		
2003	19.000		
2004	19.000		
2005	19.000		
2006	19.000		
Totals	95.000		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment: Oct. 2000, A&E-00-ASS-072

Assessment has been scheduled. Scheduled date: Assessment currently scheduled for July 2003

Other. Explain: NA

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

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NA

- 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

- 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

- 2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Before transfer to an approved TSD unit, waste will be sampled and evaluated to ensure that the waste meets the receiving TSD units waste acceptance criteria. A commitment is not necessary to complete characterization because a cradle to grave process is being implemented.

If yes, provide Tri-Party Agreement milestone number(s): NA

- 2.12 Other key assumptions related to storage, inventory, and generation information:**

Efforts are underway to prepare the 2706-T and TA to begin liquid decontamination/treatment efforts. As more information becomes available on types, quantities of equipment/material to be decontaminated, waste forecasts will be developed. Acceptance criteria for the ETF is the preferred target; the DST System remains a backup TSD unit for this waste, or another approved location.

### 3.0 WASTE MINIMIZATION

- 3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted: NA

If yes, provide document number or other identification: NA

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: NA

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

It is extremely difficult to determine how much waste will be generated for this particular waste stream. Will fluctuate greatly depending upon how much equipment needs decontaminating, treatment

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

activities, and other waste management operations.

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 0 m3

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

The T Plant Complex, where possible, will use non-regulated decontamination solutions, as well as limiting the amount of liquid waste generated as a result of decontamination/treatment activities to the extent practical. This waste stream volume will fluctuate greatly depending upon decontamination and treatment activities.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

**1.1 Plant/unit name:** WSCF/WSCF, LERF/ETF      **Waste stream** LERF/ETF  
Treatability/aggregated group identifier: LERF/ETF Liquid Waste  
Treatability/aggregated group name: LERF/ETF Liquid Waste

**1.2 Applicable profile number(s) for this waste stream:**

NA

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

This waste stream is generated from analytical processes within the laboratory. The aqueous based wastes are generally comprised of acids, bases, and other toxic constituents. The resulting liquids are drummed and shipped to the ETF for treatment.

**1.3.2 History of how and where the waste was/is generated:**

WSCF has been sending waste to the ETF since approximately 1999, for treatment and disposal. The waste is generated as a result of laboratory operations.

**1.3.3 Source of the hazardous constituents:**

The hazardous constituents are derived from listed waste sample contribution and/or the addition of reagents during the analytical process.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Information to characterize this waste stream is obtained from both process knowledge and analytical data.

**1.3.5 Additional notes:**

WSCF waste is managed in a SAA or a 90 day accumulation area. WSCF has no TSD unit.

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                 DST                                 SST  
 Other (explain):

**2.1.1 How was the waste managed prior to storage?**

WSCF waste is managed in a SAA or 90 day accumulation area. WSCF has no TSD unit.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 2.1.2 Timeframe when waste was placed into storage:

NA

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
NA	NA

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 0

Date of inventory values: 12/31/01

Comments on waste inventory: See section 2.1.1 of this data sheet.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA; WSCF does not "store" waste as it has no TSD.

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: LERF/ETF

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	1.040		
2003	1.040		
2004	1.040		
2005	1.040		
2006	1.040		
Totals	5.200		

### 2.7 DOE Storage Compliance Assessment information:

Assessment has been completed. Reference to most recent assessment:

Assessment has been scheduled. Scheduled date:

Other. Explain: NA

### 2.8 Applicable Tri-Party Agreement milestones related to storage at this location:

NA

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Characterization is performed as necessary to meet LERF/ETF waste acceptance criteria. A commitment is not necessary to complete characterization because a cradle to grave process is being implemented.

If yes, provide Tri-Party Agreement milestone number(s): NA

**2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

1996

If yes, provide document number or other identification:

Return on Investment. Waste Water Feed  
Reduced by Removal of Chloride.

Tracking Code Number YP219

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

None. ETF has changed its acceptance criteria and this waste stream is now acceptable as is without removing chlorides. No other waste minimization has been identified for this waste stream.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):**

0 kg

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

No waste minimization techniques for this waste stream have been identified. The return on investment for reverse osmosis is no longer in effect as ETF changed its acceptance criteria and now accepts the wastes with higher chloride content.

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION

- 1.1 Treatability group/aggregated stream identifier** MLLW-01  
**Treatability group/aggregated stream name:** LDR compliant waste
- 1.2 Description of waste (list WSRd numbers for this waste stream, as applicable):**  
 WSRds: BLS, H3L, 901, 903, 904, 930, 931; Waste with WSRd BLS consists of soils (dirt, sand, gravel, rocks, etc.) that were excavated from the various waste tank farms. The waste was incidentally contaminated with tank waste; therefore, the waste is designated with F001 through F005 based on the "contained-in" policy. The waste is typically packaged in drums and boxes. Remaining WSRds include waste that consists of soils (dirt, sand, gravel, rocks, etc.), treated debris, other particulates, and solidified liquids. All waste forms are anticipated to contain LDR compliant levels of dangerous waste constituents. Subject waste also includes the currently stored inventory of LDR compliant 183H Basin wastes and the forecast LDR compliant waste that comes directly from the generator (e.g., macroencapsulated SST/DST long-length contaminated equipment [LLCE] and other debris waste items, deactivated waste, stabilized waste and waste meeting LDRs as generated).

### 2.0 WASTE STREAM INVENTORY AND GENERATION

- 2.1 Current total inventory for this stream (stored waste only, not accumulation areas)**  
 Total volume (cubic meters): 1,128.216
- 2.2 Estimated generation projection by calendar year**

Year	m3	and/or	kg
2002	56.960		
2003	56.960		
2004	56.960		
2005	56.960		
2006	<u>57.120</u>		
Totals	284.960		

### 3.0 WASTE STREAM CHARACTERIZATION

- 3.1 Radiological characteristics**
- 3.1.1 Mixed waste type**       High-level     Transuranic     Low-level
- 3.1.2 Handling (as currently packaged/stored)**     Contact-handled     Remote-handled
- 3.1.3 Comments on radiological characteristics (e.g., more specific content, treatment concerns caused by radiation, confidence level):**

This waste is a general category based on dangerous waste characteristics, hence, the radiological characteristics are expected to vary greatly. However, there is high confidence that the waste is MLLW. The LDR compliant treatability group will consist of both RH and CH waste packages, however, the majority of the waste will be CH. Category 3 waste will either meet radiological stabilization requirements as delivered to the disposal unit, or it will be radiologically stabilized in the unit by means of placing the

## LDR REPORT TREATABILITY GROUP DATA SHEET

waste inside of a high integrity container (HIC).

### 3.2 Matrix characteristics (physical content)

3.2.1 Matrix constituent table (each constituent listed should constitute at least 1% of the total volume or mass)

3.2.2 Confidence level for matrix characteristic data in Section 3.2.1:

Low  Medium  High

3.2.3 Comments on matrix characteristics and/or confidence level:

Waste with WSRd BLS has a medium confidence level. The waste has been verified through the Backlog Waste Program per the Backlog Waste Analysis Plan (BWAP). A contained-in determination was approved for the subject waste by Ecology. The waste is acceptable for disposal into the LLW portion of Hanford's LLBGs after it is screened for PCB constituents and debris type items are removed from the waste. Waste with numerical WSRds (e.g., 903, etc.) meet the requirements of the Waste Specification System and has a high confidence level. If some of the waste does not meet direct disposal criteria (i.e., does not meet all LDRs), it will be reassigned into the appropriate waste stream that requires treatment (e.g., MLLW-02 through -10). This waste stream can consist of many different physical matrix characteristic types since it is based on LDR requirements for disposal of a dangerous waste. Although this waste meets RCRA and state LDRs, it may not meet all Low-Level Burial Ground disposal criteria (i.e., void space requirements) and may require repackaging or void fill prior to disposal.

### 3.3 Regulated contaminated characteristics

3.3.1 Wastewater/non-wastewater under RCRA

Wastewater  Non-wastewater  Unknown

3.3.2 Regulated contaminant table including treatment requirements and UHCs, if applicable

EPA/ State number	Waste description	LDR sub- category*	Concentration (typical or range)**	Basis	LDR Treatment Concentration Standard or Technology Code
See Footnote (1)					

\*LDR subcategory marked NA if no existing subcategory adequately describes this waste, or if there are no defined subcategories for the waste number (40 CFR 268.40).

\*\*If the waste is not consistent in concentration or the concentration is unknown, this may not apply. Describe in Section 3.3.6.

(1) Subject treatability group has been assigned those waste codes that are listed on the current CWC and/or Mixed Waste Disposal unit Part A's (Form C). Individual waste packages assigned to the treatability group may have one or more of these waste codes. The waste meets (or will meet) the treatment standards listed in 40CFR268.40, 40CFR268.45 and/or WAC 173-303-140

## LDR REPORT TREATABILITY GROUP DATA SHEET

### 3.3.3 List any waste numbers from Section 3.3.2 for which the stream already meets established LDR treatment standards

List:

No LDR treatment required (e.g., TRUM waste destined for WIPP, exclusion, etc.)

None (i.e., all constituents/waste numbers of this waste stream still require treatment)

### 3.3.4 Does this waste stream contain PCBs?

Yes  No  Unknown If no or unknown, skip to Section 3.3.5

#### 3.3.4.1 Is waste stream subject to TSCA regulations for PCBs?

Yes  No  Unknown

#### 3.3.4.2 Indicate the PCB concentration range (ppm)

<50  ≥ 50  Unknown

### 3.3.5 What is the confidence level for the regulated contaminant characteristic data?

Low  Medium  High

### 3.3.6 Comments on regulated contaminant characteristics and/or confidence level:

Confidence level for this waste treatability group is high. Waste with WSRd BLS has been verified through the backlog waste program per the Backlog Waste Analysis Plan (BWAP). A contained-in determination was approved for the subject waste by Ecology. The waste is acceptable for disposal into the LLW portion of Hanford's LLBGs. The other waste has been verified via the WSS and is awaiting disposal. For waste with WSRd BLS, all hazardous constituents are below the LDR limits. Furthermore, a "contained-in" determination was granted by Ecology to allow disposal of the subject waste into the LLW portion of Hanford's LLBGs. Waste with numerical WSRds (e.g., 903, etc.) meets all applicable LDR treatment standards including applicable UHCs. Treatment per 40CFR268.40, 40CFR268.45 and/or WAC 173-303-140.

## 4.0 WASTE STREAM TREATMENT

### 4.1 Is this stream currently being treated? Yes No

If yes, provide details: Although "no" is marked above, some of this waste stream is treated at the generators facilities under Treatment By Generator (TBG) provisions prior to receipt at the Mixed Waste Disposal Facility. Deactivation, stabilization and alternative debris treatment technologies are utilized.

### 4.2 Planned treatment

Check the appropriate box indicating future plans for treating this waste stream to meet applicable regulations, including LDR treatment standards.

No treatment required (skip to Section 5.0)  Treating or plan to treat off site

## LDR REPORT TREATABILITY GROUP DATA SHEET

- Treating or plan to treat on site                       Treatment options still being assessed

**4.3 Planned treatment method, facility, extent of treatment capacity available:**

TBG activities will continue to be utilized.

**4.4 Treatment schedule information:**

TBG is performed as needed.

**4.5 Applicable Tri-Party Agreement milestone numbers (including permitting):**

None applicable.

**4.6 Proposed new Tri-Party Agreement treatment milestones:**

An M-91 TPA Change request was submitted to Ecology on 2/13/02.

**4.7 If treating or planning to treat on site, was or will waste minimization be addressed in developing and/or selecting the treatment method?**

Yes    No    Unknown

If yes, describe: Waste minimization reviews are/will be performed to minimize the amount of secondary waste generated.

**4.8 List or describe treatability equivalency petitions, rulemaking petitions, and case-by-case exemptions needed for treatment:**

Contained-in determination for WSRd BLS, the backlog soils, allows this portion of waste stream to be disposed of in the low-level waste portion of the Low-Level Burial Grounds. A delisting modification for the 200LEF unit was submitted to Ecology in November 1998 and then revised again in December 2001. This delisting modification if approved would allow for the disposal of additional F coded waste, and of P and U coded waste into Hanford's mixed waste trenches.

**4.9 Key assumptions:** None.

### 5.0 WASTE STREAM DISPOSAL

**After treatment, how will the waste stream be disposed of (include description, locations, milestone numbers, variances required, etc., as applicable)?**

Hanford LLBG (LLW portion) is planned to receive the portion of this stream that has WSRd BLS. Other waste in this waste treatability group will be disposed of in mixed waste trenches located on the Hanford Site. The majority of the existing stored inventory of this waste treatability group is designated with P and U waste codes and came from the closure of the 183-H Basins. This waste cannot currently be disposed of until a disposition pathway is achieved for the F039 leachate that would be generated from the disposal unit.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 **Plant/unit name:** 200 LEF/200 ETF, LDR Compliant **Waste stream** RCRA Powder, LDR Compliant
- Treatability/aggregated group identifier: MLLW-01
- Treatability/aggregated group name: LDR compliant waste

1.2 **Applicable profile number(s) for this waste stream:**

2LEF-930-0001-00-CAT1, 2LEF-931-0001-00-CAT2

1.3 **Waste stream source information**

1.3.1 **General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

The ETF process generates secondary waste (dry powder) from the treatment of dangerous wastewaters from various generators on the Hanford Site.

1.3.2 **History of how and where the waste was/is generated:**

Secondary waste (dry powder) generated from the treatment of wastewater through the 200 Area Effluent Treatment Facility (ETF). The contaminants are destroyed or removed from the wastewater and dried to powder.

1.3.3 **Source of the hazardous constituents:**

Wastewaters from various generators on the Hanford Site, for example, 242-A Evaporator process condensate, Mixed Waste Burial Trench leachate, WSCF laboratory wastewater, etc.

1.3.4 **Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Wastewaters are characterized using analytical data and process knowledge in accordance with the RCRA Waste Analysis Plan for LERF/ETF.

1.3.5 **Additional notes:**

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

2.1 **Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)
- Tank                 DST                         SST
- Other (explain):

2.1.1 **How was the waste managed prior to storage?**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

The waste was in the process of being generated.

### 2.1.2 Timeframe when waste was placed into storage:

10/01 for current inventory. This type waste has been generated at this location since 1995.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
ETF	24 drums

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 5

Date of inventory values: 12/31/01

Comments on waste inventory:

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? \_\_\_\_\_

When is this capacity expected to be reached \_\_\_\_\_

Bases and assumptions used:

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list:

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	6.000		
2003	6.000		
2004	6.000		
2005	6.000		
2006	6.000		
Totals	30.000		

### 2.7 DOE Storage Compliance Assessment information:

Assessment has been completed. Reference to most recent assessment 09/2000, A&E-00-ASS-070

Assessment has been scheduled. Scheduled date:

Other. Explain:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

N/A

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain:

**2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Characterization required as normal process when a cradle to grave process is being implemented.

If yes, provide Tri-Party Agreement milestone number(s):

**2.12 Other key assumptions related to storage, inventory, and generation information:**

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

If yes, provide document number or other identification:

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: No assessment planned at this time.

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

The ETF removes contaminants from wastewater and dries them to a powder. The wastewaters are segregated and processed to minimize the generation of secondary waste.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

**3.3.2 Projected future waste volume reductions:**

Year                      m3                      and/or                      kg

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2002	0.000	
2003	0.000	
2004	0.000	
2005	0.000	
2006	0.000	
Totals	0.000	

### 3.3.3 Bases and assumptions used in above estimates:

NA

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 Plant/unit name:** 222-S/222-S LDR Compliant Waste, Dangerous Mixed Waste Storage Area (DMWSA)      **Waste stream** 222-S LDR Compliant Waste
- Treatability/aggregated group identifier: MLLW-01
- Treatability/aggregated group name: LDR compliant waste

**1.2 Applicable profile number(s) for this waste stream:**

Waste that complies with State and Federal Land Disposal Restrictions. This waste is generated by analytical procedures, maintenance, 219-S operations. This is an inorganic solid non-acidic waste.

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Waste from general maintenance, analytical procedure operations, Hot Cell operations and 219-S operations. This waste is LDR compliant because it meets the requirements in WAC 173-303-140.

**1.3.2 History of how and where the waste was/is generated:**

Analytical operations, 219-S operations, and hot cell operations.

**1.3.3 Source of the hazardous constituents:**

Hazardous constituents are already contained in samples from Hanford generators (e.g. Tank Farms, K-Basins, N-Reactor Fuel, PFP). Unused samples, unused or expired standards or reagents.

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Waste Stream Fact Sheet (WSFS), Container Disposal Request (CDR), Request for Sample Analysis

**1.3.5 Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)
- Tank                 DST                     SST
- Other (explain):

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 2.1.1 How was the waste managed prior to storage?

It was being generated at other locations (see section 1.3.3 of this data sheet).

### 2.1.2 Timeframe when waste was placed into storage:

Since 3/1998

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
HS-0083A	1
HS-0083B	1

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 0.416

Date of inventory values: 1/14/02

Comments on waste inventory: Inventory is based on Solid Waste Information and Tracking System (SWITS).

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? n/a

When is this capacity expected to be reached n/a

Bases and assumptions used: n/a

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: Disposed of in the Mixed Waste Trench. A container may be temporarily stored in CWC prior to disposal.

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	0.310		
2003	0.310		
2004	0.310		
2005	0.310		
2006	0.310		
Totals	1.550		

### 2.7 DOE Storage Compliance Assessment information:

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Assessment has been completed. Reference to most recent assessment: A&E-SEC-01-018
- Assessment has been scheduled. Scheduled date:
- Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

M-20-22

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

- Yes  No

If yes, summarize releases and quantities and provide date:

n/a

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

- Yes  No

If yes, explain: n/a

**2.11 Is further characterization necessary?**

- Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

n/a

If yes, provide Tri-Party Agreement milestone number(s): n/a

**2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

- Yes  No

If yes, provide date assessment conducted: 9/2000

If yes, provide document number or other identification: Operating and analytical procedures at 222S Laboratory Complex.

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:

**3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

The 222-S Laboratory personnel minimizes waste by proper planning during Automated Job Hazard

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Analysis (AJHA) and pre-jobs and by optimizing the use of lab ware. Personnel constantly seek innovative opportunities to reduce waste by being aware of current waste minimizing technology.

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 7.3 m3

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

DOE/RL-2000-79 "Pollution Prevention Accomplishments", document reported waste reductions for CY 2000. The waste reduction volume reported above in Section 3.3.1 is a total waste minimization volume for similar waste streams across the 222-S Laboratory; this waste stream may be a portion of what was reported. 222-S has no waste minimization goals for this waste stream; therefore, no projected future waste volume reductions are reported above in Section 3.3.2. However, the analytical process generating this stream is continuously evaluated for waste minimization opportunities.



## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

- Tank                       DST                       SST  
 Other (explain):

**2.1.1 How was the waste managed prior to storage?**

Waste was placed in boxes and drums by generators.

**2.1.2 Timeframe when waste was placed into storage:**

Portions of the waste have been in storage since 1995.

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
CWC	Approx. 3130

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 1102.44

Date of inventory values: 12/31/01

Comments on waste inventory: Inventory data based on Solid Waste Inventory Tracking System (SWITS) under WSRds 901, 903, 904, 930 (except 183-H), 931, BLS, and H3L

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

- Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: No issues with CWC storage based on 20 year waste generation forecast.

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

- DST  Other area(s) list:

- None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

Totals 0.000

**2.7 DOE Storage Compliance Assessment information:**

- Assessment has been completed. Reference to most recent assessment A&E-SEC-02-001  
 Assessment has been scheduled. Scheduled date:  
 Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

M-20-12

**2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

- Yes  No

If yes, summarize releases and quantities and provide date:

NA

**2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

- Yes  No

If yes, explain: NA

**2.11 Is further characterization necessary?**

- Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

If necessary to provide further characterization, waste will be re-characterized just prior to disposal to ensure it meets current disposal requirements. Should further treatment be required due to changing regulations, waste will be re-characterized for most efficient use of resources. Characterization will be performed as necessary to support the results of the active M-91 TPA negotiations.

If yes, provide Tri-Party Agreement milestone number(s): None

**2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

**3.1 Has a waste minimization assessment been completed for this stream?**

- Yes  No

If yes, provide date assessment conducted:

NA

If yes, provide document number or other identification:

NA

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA: None planned - waste not generated at CWC.

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**  
These activities occur before the wastes are shipped to CWC. There are few opportunities to reduce waste volumes placed into storage.

**3.3 Waste minimization schedule**

**3.3.1 Reduction achieved during calendar year (volume or mass):** 0 m3

**3.3.2 Projected future waste volume reductions:**

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

**3.3.3 Bases and assumptions used in above estimates:**

There is no projected waste generation by CWC.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

**1.1 Plant/unit name:** PFP/234-5Z, LDR Compliant      **Waste stream** Lab Chemicals/Reagents,  
LDR Compliant  
**Treatability/aggregated group identifier:** MLLW-01  
**Treatability/aggregated group name:** LDR compliant waste

**1.2 Applicable profile number(s) for this waste stream:**  
PFPX-930-0001-01

**1.3 Waste stream source information**

**1.3.1 General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Spent or expired lab chemicals/reagents

**1.3.2 History of how and where the waste was/is generated:**

Laboratory operations.

**1.3.3 Source of the hazardous constituents:**

Intrinsically hazardous

**1.3.4 Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data, process knowledge

**1.3.5 Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

**2.1 Current storage method**

- Container (pad)     Container (covered)     Container (retrievably buried)  
 Tank                 DST                             SST  
 Other (explain):

**2.1.1 How was the waste managed prior to storage?**

NA - Chemical product. See 2.1.2 below

**2.1.2 Timeframe when waste was placed into storage:**

When it is declared as waste it is either placed into a satellite accumulation area or placed in a

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

90 day accumulation area.

**2.2 Inventory locations:**

Building/room number	Number of containers/tanks
234-5Z	

**2.3 Current inventory for this stream (stored waste only, not accumulation areas)**

Total volume (cubic meters): 0  
 Date of inventory values: 12/31/01  
 Comments on waste inventory: None

**2.4 Is storage capacity at this location potentially an issue for this waste stream?**

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: Not stored at this location. Shipped to Mixed Waste Trench as waste.

**2.5 Planned management areas for storage of this waste:**  Current location  CWC

DST  Other area(s) list: Mixed Waste Trench

None

**2.6 Estimated generation projection by calendar year:**

Year	m3	and/or	kg
2002	0.260		
2003	0.260		
2004	0.260		
2005	0.260		
2006	0.420		
Totals	1.460		

**2.7 DOE Storage Compliance Assessment information:**

Assessment has been completed. Reference to most recent assessment

PFP Compliance  
Assessment, A&E-SEC-01-  
015

Assessment has been scheduled. Scheduled date:

Other. Explain:

**2.8 Applicable Tri-Party Agreement milestones related to storage at this location:**

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

None

- 2.9 Has there ever been any non-permitted, unauthorized release of this stream to the environment?**

Yes  No

If yes, summarize releases and quantities and provide date:

NA

- 2.10 Are there any plans to submit requests for variances or other exemptions related to storage?**

Yes  No

If yes, explain: NA

- 2.11 Is further characterization necessary?**

Yes  No  Unknown at this time

If yes, provide details and schedule (also see treatment/characterization plan volume for further information):

Will be characterized after being declared waste.

If yes, provide Tri-Party Agreement milestone number(s): NA

- 2.12 Other key assumptions related to storage, inventory, and generation information:**

None

### 3.0 WASTE MINIMIZATION

- 3.1 Has a waste minimization assessment been completed for this stream?**

Yes  No

If yes, provide date assessment conducted:

CY 2001

If yes, provide document number or other identification:

PFP 2001 Waste Minimization Evaluation  
for LDR Report Waste Streams, Letter#  
M2100-02-016

If no, provide date assessment will be completed, or if waste stream is no longer generated then indicate NA:

- 3.2 Provide details of current and proposed methods for minimizing the generation of this stream (e.g., process changes to reduce or eliminate LDR waste, methods to reduce volume through segregation and avoidance of commingling, substitution of less-toxic materials, etc.):**

PFP has a waste minimization program. A hierarchical approach to environmental management is applied to all types of pollution and waste generating activities. Pollution prevention and waste minimization, through source reduction, is the preferred option, followed by environmentally safe recycling. Treatment to reduce the quantity, toxicity, and/or mobility will be considered only when prevention or recycling is not possible or practical. Environmentally safe disposal is the last option. Segregation is applicable in all of these activities. PFP routinely evaluates the chemicals in the labs to

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

ensure that there is an identified use for them. Chemicals with no justifiable use will be either recycled, if possible, or discarded as waste and not reordered.

### 3.3 Waste minimization schedule

3.3.1 Reduction achieved during calendar year (volume or mass): 0 m3

### 3.3.2 Projected future waste volume reductions:

Year	m3	and/or	kg
2002	0.000		
2003	0.000		
2004	0.000		
2005	0.000		
2006	0.000		
Totals	0.000		

### 3.3.3 Bases and assumptions used in above estimates:

PFP is currently in a clean up and stabilization mode. Clean up and stabilization operations tend to increase production of waste. PFP has a waste minimization program and is currently undergoing a Site Strategic Pollution Prevention Opportunity Assessment, which will identify if there are further opportunities to reduce waste production or produce waste in a less hazardous form. PFP routinely evaluates the chemicals in the labs to ensure that there is an identified use for them. Chemicals with no justifiable use will be either recycled, if possible, or discarded as waste and not reordered.

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

### 1.0 WASTE STREAM IDENTIFICATION AND SOURCE

- 1.1 **Plant/unit name:** T Plant Complex/LDR Compliant      **Waste stream** Storage-LDR Compliant Waste  
Treatability/aggregated group identifier: MLLW-01  
Treatability/aggregated group name: LDR compliant waste

1.2 **Applicable profile number(s) for this waste stream:**

WSRd BLS, 930, and 931

1.3 **Waste stream source information**

1.3.1 **General description of the waste (e.g., spill clean-up waste, discarded lab materials, maintenance waste):**

Expired/excess chemicals from 221-T canyon cleanout, materials generated during routine maintenance, and operations and contaminated soil. Federal and state LDR compliant waste that does not require additional treatment.

1.3.2 **History of how and where the waste was/is generated:**

This waste is generated as a result of cleanout activities from the 221-T Canyon and from routine maintenance and operations. In addition, this waste is generated from various onsite locations and by offsite generators.

1.3.3 **Source of the hazardous constituents:**

See 1.3.1 and 1.3.2

1.3.4 **Source of information (e.g., analytical data, process knowledge, document number, etc.)**

Analytical data and process knowledge

1.3.5 **Additional notes:**

None

### 2.0 WASTE STREAM STORAGE, INVENTORY, AND GENERATION INFORMATION

2.1 **Current storage method**

- Container (pad)       Container (covered)       Container (retrievably buried)  
 Tank                       DST                               SST

- Other (explain): T Plant Complex has a combination of covered and uncovered storage areas to support various waste management operations/activities. Depending upon the type of waste being managed the waste can be stored in covered or uncovered storage locations. As an example: If the waste is bulk liquid, this waste might be stored in

## LDR REPORT WASTE LOCATION-SPECIFIC DATA SHEET

a storage building equipped with HVAC to prevent freezing.

### 2.1.1 How was the waste managed prior to storage?

Generated by various onsite and offsite generators

### 2.1.2 Timeframe when waste was placed into storage:

1991 to present.

### 2.2 Inventory locations:

Building/room number	Number of containers/tanks
T PLANT	72

### 2.3 Current inventory for this stream (stored waste only, not accumulation areas)

Total volume (cubic meters): 20.16

Date of inventory values: 12/28/01

Comments on waste inventory: Inventory fluctuates as T Plant Complex generates waste, or perform waste treatment/verification for onsite/offsite generators.

### 2.4 Is storage capacity at this location potentially an issue for this waste stream?

Yes  No

If yes, what is the total estimated storage capacity? NA

When is this capacity expected to be reached NA

Bases and assumptions used: NA

### 2.5 Planned management areas for storage of this waste: Current location CWC

DST  Other area(s) list: E.g., Mixed Waste Disposal Trenches

None

### 2.6 Estimated generation projection by calendar year:

Year	m3	and/or	kg
2002	0.100		
2003	0.100		
2004	0.100		
2005	0.100		
2006	<u>0.100</u>		
Totals	0.500		

### 2.7 DOE Storage Compliance Assessment information: