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FEDERAL FACILITY COMPLIANCE ACT

**CONCEPTUAL SITE TREATMENT PLAN FOR THE
LAWRENCE LIVERMORE NATIONAL LABORATORY**

OCTOBER 1993

The U.S. Department of Energy
San Francisco Operations Office
1301 Clay Street
Oakland, California 94612-5208

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**FEDERAL FACILITY COMPLIANCE ACT
CONCEPTUAL SITE TREATMENT PLAN
FOR
LAWRENCE LIVERMORE NATIONAL
LABORATORY
LIVERMORE, CALIFORNIA**

Prepared for

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Table of Contents

1.0	Introduction	1
1.1	Purpose and Scope	1
1.2	Site History and Mission	2
1.3	Framework For Developing DOE's Site Treatment Plans	5
1.4	CSTP Organization	8
1.5	Other Activities Related to CSTP Development.....	9
2.0	Methodology	12
2.1	Assumptions for Conceptual Site Treatment Plans.....	12
2.2	Definitions.....	13
2.3	Treatability Groups	13
2.4	Characterization of Mixed Wastes	14
2.5	The Technology Options Analysis and Selection Process.....	16
3.0	Mixed Low-Level Waste Streams.....	23
3.1	MLLW with Existing Treatment Capacity	23
3.2	Waste Streams for which Technology Exists but Without Capacity On-Site	27
3.3	MLLW for which Technology Exists but Needs Adaptation or for which No Technology Exists	31
3.4	Wastes Streams Requiring Further Characterization or For Which Technology Assessment Has Not Been Done.....	34
4.0	Mixed Transuranic Waste Streams	36
4.1	Strategy for Managing Mixed Transuranic Waste	36
4.2	MTRU Waste Streams Expected to Meet WIPP Waste Acceptance Criteria	38
4.3	Non-Defense-related MTRU Waste Streams and MTRU Waste Streams Not Expected to Meet WIPP Waste Acceptance Criteria	42
5.0	High-Level Mixed Waste Streams	43
5.1	Description of waste streams	43
5.2	Strategy for Managing High-Level Mixed Waste.....	44
6.0	Future Generation of Mixed Wastes Streams	44
6.1	Environmental Restoration Waste	44
6.2	D&D Wastes	46
6.3	Other Wastes	46
7.0	Mixed Waste Streams for which Radionuclide Separation May Be Appropriate	47
7.1	Description of waste streams that may be candidates for radionuclide separation	47
7.2	Analysis and Implications	47
8.0	Conceptual Site Treatment Plan Summary Tables	51
	References	Tab

Figures

Figure 1.3	Framework for Developing DOE's Site Treatment Plans.....	6
Figure 2.5.1	A Decision Process for Evaluating Treatment and Technology Options	18
Figure 3.4	Projected Implementation Schedule (Preliminary Plan)	34

T a b l e s

Table 2.1	Limit of Sensitivity	16
Table 2.5.1	Mixed Waste Matrix-Contaminant Treatment Matrix (Contact Handled MLLW)	20
Table 2.5.2	Generic Waste Treatment Categories and Descriptions	21
Table 3.1	Wastes for Which LLNL has Treatment Capacity	24
Table 3.2	Treatment Technologies Used in the Existing Treatment Units	25
Table 3.3	Wastes for Which LLNL has Planned Treatment Capacity	28
Table 3.4	Treatment Technologies to be Used in the Planned (Proposed) Treatment Units	29
Table 3.5	Wastes for Which Adaptation to the Technology is Needed.....	31
Table 3.6	Treatment Technologies Proposed for Future Implementation	32
Table 3.7	Description of Waste Streams.....	35
Table 7.1	Candidate Waste Streams for Radionuclide Separation	48
Table 8.1	Summary of Potential Mixed Waste Treatment Needs and Options at LLNL.....	Tab 8.1
Table 8.2	Summary of On-site Treatment Systems at LLNL.....	Tab 8.2

A p p e n d i c e s

Appendix 1.1	Sites at which DOE Generates or Stores Mixed Waste, Preparing Conceptual Site Treatment Plans (See as Appendix A)
Appendix 1.2	Candidate Mixed Waste Treatment System Information Sheets (See as Appendix B)
Appendix 2.1	Definitions
Appendix 3.1	Design and Operating Capacities of LLNL's Existing and Planned Mixed Waste Treatment Units (See as Appendices 3.1A & 3.1B) and Applicable BDATs for LLNL's Waste Streams (See as Appendix 3.1C)
Appendix 3.2	Process Flow Charts for Section 3.1
Appendix 3.3	Reserved
Appendix 3.4	Ranges of Costs Associated with Unit Operations to Treat Mixed Organic Waste Streams
Appendix 3.5	The Off-Site Facility Options Table
Appendix 3.6	Reserved
Appendix 4.1	"Lawrence Livermore National Laboratory TRU WASTE INVENTORY 5/11/93
Appendix 6.1	Remediation schedules under which both the Main Site and Site 300 are currently driven

Conceptual Site Treatment Plan For Lawrence Livermore National Laboratory

1.0 Introduction

1.1 Purpose and Scope

The Department of Energy (DOE) is required by section 3021(b) of the Resource Conservation and Recovery Act (RCRA), as amended by the Federal Facility Compliance Act (the Act), to prepare plans describing the development of treatment capacities and technologies for treating mixed waste. The Act requires site treatment plans (STPs or plans) to be developed for each site at which DOE generates or stores mixed waste and submitted to the State or EPA for approval, approval with modification, or disapproval. The Lawrence Livermore National Laboratory (LLNL) Conceptual Site Treatment Plan (CSTP) is the preliminary version of the plan required by the Act and is being provided to California, the U.S. Environmental Protection Agency (EPA), and others for review. A list of the other DOE sites preparing CSTPs is included in **Appendix 1.1** of this document. Please note that Appendix 1.1 appears as Appendix A, pages A-1 and A-2 in this document.

In addition to aiding LLNL, in conjunction with California and EPA, in formulating its final STP, the CSTP will also provide information to other DOE sites for use in identifying common technology needs and potential options for treating their wastes. The LLNL CSTP is also intended to be used in conjunction with CSTPs from other sites as a basis for nationwide discussions among state regulators, EPA, and other interested parties on the treatment strategies and options, and on technical and equity issues associated with DOE's mixed waste. DOE also intends to prepare a summary of the CSTPs to provide a national picture of DOE's technology needs and options to facilitate these discussions.

The CSTP includes the following information:

The CSTP addresses mixed waste, which is defined by the Act as waste containing both a hazardous waste subject to RCRA, and source, special nuclear or by-product material subject to the Atomic Energy Act of 1954 (42 U.S.C. 2011 *et seq.*).

The CSTP presents preliminary information on the treatment technology and capacity needs for LLNL's mixed waste. It also describes any existing mixed waste treatment capacity at the site to assist other sites in determining the suitability of that capacity for their wastes.

The CSTP identifies possible options for treatment where capacity does not exist and describes the technical uncertainties, and economic and other implications associated with the options.

LLNL also has some wastes that require further characterization or for which the appropriate technology has not yet been identified. These are identified in the CSTP, as well as waste streams, such as environmental restoration wastes, LLNL expects to generate in the future.

The CSTPs are intended to provide a starting point for discussions. LLNL has completed the analysis as completely and with as much technical accuracy as possible.

1.2 Site History and Mission

1.2.1 Site History

Lawrence Livermore National Laboratory (LLNL) is owned by the Department of Energy (DOE) and is jointly operated by the University of California and the DOE. The Laboratory was established in 1952 to conduct nuclear weapons research. Since 1952, other major programs including magnetic fusion energy, laser fusion and laser isotope separation, biomedical and environmental sciences, and applied energy technology have been added. These programs involve research in the areas of chemistry and materials science, computer science and technology, biological sciences, engineering, and physics. LLNL also conducts a variety of projects for other federal agencies.

LLNL's main site is located approximately 40 mi. east of San Francisco, California, at the southeast end of the Livermore Valley in southern Alameda County, adjacent to the City of Livermore. Nearly 6 million people live within 50 mi. of the LLNL main site; of these, approximately 56,700 live within the city of Livermore.

Much of LLNL's materials testing and high-explosives (HE) diagnostic work is conducted at Site 300. Site 300 is located in the sparsely populated hills of the Diablo Range, 15 mi. southeast of Livermore main site. LLNL also has operations at several other locations in the Livermore area including 2020 Research Drive, Almond Ave., and the Livermore Airport.

1.2.1.1 LLNL Main Site Background

Prior to 1942, the property was part of the Wagoner Ranch and used for grain production and cattle grazing. In 1942, the U.S. Department of the Navy bought the property to be used for a Naval Air Station (NAS) and an adjoining ancillary gunnery range. The facility was used originally as a flight-training base. By October, 1944, the functions of assembly, repair, and overhaul of aircraft had been relocated from the Alameda NAS to the Livermore site (Livermore NAS) where air units were housed and serviced. By mid-1945, large volumes of assembly and repair work, principally overflow from Alameda NAS, were performed on the property. This activity continued until October 1946, when the Livermore NAS was deactivated after the end of World War II.

After the 1946 deactivation, the land and runways were retained for the U.S. Naval Reserve Retraining command, accommodating some elements of the U.S. Navy until April 1950. During this period, the site was also used for stock-car racing, classroom

facilities, air meets, and club barbecues. In 1950, the Navy allowed occupation of the site by the Atomic Energy Commission (AEC). Since the property was formally transferred to the AEC in January 1951, successor agencies and other entities have used the site. These groups include the California Research and Development Corporation (CR&D, which is a subsidiary of Standard Oil), Pratt and Whitney, the Energy Research and Development Agency (ERDA), and the U.S. Department of Energy/LLNL (DOE/LLNL).

In September 1952, the site was established as the Livermore Branch of the University of California Radiation Laboratory. Subsequent names of the site include the Ernest O. Lawrence Radiation Laboratory (in 1958) and the Lawrence Livermore Laboratory (in 1971). In December 1979, the Congress renamed the site the Lawrence Livermore National Laboratory (LLNL).

1.2.1.2 LLNL Site 300 Background

In 1953, the University of California Radiation Laboratory (UCRL) proposed a location along Corral Hollow between Livermore and Tracy as a high explosive (HE) test site. UCRL acquired the approximate 3 sq. mi. parcel of land, named it Site 300, and commenced HE testing at the site in 1955. The site subsequently became part of the Livermore Branch of UCRL. Prior to its acquisition by UCRL, land use in the area of Site 300 was limited to sheep and cattle grazing. In 1957, additional land was acquired and the site was enlarged to 10.4 sq. mi. In 1971, the UCRL Livermore Branch became the Lawrence Livermore Laboratory (LLL), and Site 300 became part of LLL. Congress changed the name from LLL to LLNL in 1979, also including Site 300 as part of LLNL. Site 300 is currently owned by the DOE and is jointly operated by the University of California and the DOE.

In 1977, the Navy transferred ownership of a 7.44-acre parcel on the eastern edge of Site 300 to LLL for use as a pistol range. It was subsequently used by the U.S. Navy as a fire-fighting experimentation area. Currently, the parcel is unused. In February 1991, LLNL acquired 11.6 acres of the adjoining Connolly Ranch at the southeastern edge of Site 300. The parcel had been in the Connolly family since the 1890s and had been used for seasonal cattle grazing.

1.2.1.3 Hazardous Waste Management Activities

LLNL presently operates five Hazardous Waste Management Facilities at the Livermore main site. These are the Area 514 Facility, Area 612 Facility, Building 233 Facility, Building 693 Facility and Building 419 Facility. The Area 514 and 612 Facilities include treatment and storage units for hazardous and mixed wastes; the Building 233 Facility is a container storage unit for hazardous and mixed wastes; the Building 693 Facility is a container storage unit for hazardous wastes, but will eventually be used for the storage of both hazardous and mixed wastes; and, the Building 419 Facility includes inactive

treatment units which are awaiting regulatory closure.

LLNL's RCRA interim status document authorizes acceptance of both hazardous and mixed wastes from LLNL offsite operations at Site 300, 2020 Research Drive, Almond Ave., and the Livermore Airport. No other offsite locations are currently allowed to send hazardous or mixed wastes to the Livermore main site. LLNL has also submitted a RCRA Part B permit application to the State of California for continued operation of the Hazardous Waste Management Facilities at the main site.

LLNL also operates two Hazardous Waste Management Facilities at Site 300. However, these facilities are only used for the treatment and long term storage (i.e., greater than 90-day storage) of hazardous wastes. Mixed wastes which are generated at Site 300 are limited to storage periods of 90 days or less, and then are either taken to the main site for treatment and/or long term storage or are sent to commercial facilities for treatment and/or disposal.

LLNL operations at the 2020 Research Drive, Almond Ave., and the Livermore Airport locations may generate small quantities of hazardous wastes. No mixed wastes are generated at these locations. There are no interim status or permitted treatment or storage Hazardous Waste Management Facilities at these locations. Hazardous wastes which are generated at these locations are transported to the main site for treatment and/or storage or are sent to commercial facilities for treatment and/or disposal.

Hazardous Waste Management Facility operations at LLNL are subject to Federal, State, regional, and local environmental laws and regulations. Hazardous and mixed waste operations at LLNL sites include the safe and proper handling, treatment, packaging, storage, and disposition of all hazardous and mixed wastes generated by LLNL. Mixed wastes can be chemically or physically treated only at the Livermore main site. Existing treatment for mixed wastes includes the following: neutralization, flocculation, chemical reduction and oxidation, precipitation, separation, filtration, solidification, size reduction, shredding, adsorption and blending. LLNL has requested regulatory agency approval to add centrifugation and evaporation treatment units as well as to increase current treatment operations for mixed wastes. Also, mixed wastes are stored in appropriate units at the Livermore main site for extended periods until it can be shipped to an approved off-site treatment and/or disposal facility.

The Hazardous Waste Management Division (HWMD) of LLNL's Environmental Protection Department (EPD) manages all hazardous, radioactive, and mixed wastes generated at LLNL. HWMD processes these wastes for temporary storage, treatment, and transportation for recycling or off-site disposal. HWMD also processes, stores, packages, solidifies, treats, or prepares waste for shipment and disposal, recycling, or discharge to the sanitary sewer. Additionally, HWMD is involved in locating and evaluating facilities that may accept mixed waste for storage, treatment or disposal, and subsequently ensuring that shipments from LLNL meet the waste acceptance criteria of any selected site.

1.2.1.4 Environmental Restoration Activities

The Environmental Restoration Division (ERD) of EPD was established to identify releases to the environment and remediate contamination resulting from past hazardous materials handling and disposal practices including leaks and spills that have occurred at the Livermore main site and Site 300. These past practices and spills have resulted in releases of contaminants at concentrations requiring remedial measures. In addressing CERCLA compliance issues, ERD staff plans, directs, and conducts assessments to determine both the impact of such releases on the environment and the measures needed to reduce contamination levels to protect human health and the environment.

The ERD staff investigates field sites to confirm the presence and extent of contamination and its impact on human health and the environment. ERD also evaluates various remediation technologies, including state-of-the-art technologies, and recommends and implements actions for environmental restoration. Finally, ERD is responsible for managing remediation activities, such as soil removal and ground-water and surface-water treatment, and for assisting in closure of inactive facilities in a manner designed to prevent or minimize the extent of environmental contamination.

1.2.2 Mission

The mission of LLNL is to be a national resource of scientific, technical, and engineering capability with special focus on national security. LLNL undertakes those multidisciplinary fundamental and applied research and development activities that are necessary to maintain a leading position in the diverse scientific and technical fields required for this mission. In pursuit of this mission, LLNL interacts closely with scientific and technical personnel throughout the federal government, other national laboratories, universities and industry.

Over the years, LLNL mission has evolved to include a wide variety of activities including inertial confinement fusion, laser isotope separation, magnetic fusion energy, biomedical and environmental research, energy and resources, environmental restoration and waste management, and scientific and institutional support.

1.3 Framework For Developing DOE's Site Treatment Plans

Figure 1.3, "Framework for Developing DOE's Site Treatment Plans", illustrates the relationships among requirements that led to the process DOE is following to prepare the STPs. The key components of the framework for the plans are described below.

RCRA Land Disposal Restriction (LDR) Requirements require the treatment of hazardous waste (including the hazardous component of mixed waste) to certain standards before land disposal, and prohibit storage of hazardous wastes that do not meet LDR standards, except for the purposes of accumulating sufficient quantities to facilitate

Figure 1.3 Framework For Developing DOE's Site Treatment Plans.

proper recovery, treatment, or disposal of the waste. DOE is currently storing mixed waste inconsistent with the LDR provisions because the treatment capacity for such wastes, either at DOE sites or in the commercial sector, is not adequate or is simply unavailable at this time.

The Federal Facility Compliance Act, signed on October 6, 1992, waives sovereign immunity for fines and penalties for RCRA violations at Federal facilities. However, a provision postpones that waiver for three years for mixed waste LDR storage prohibition violations at DOE sites and requires DOE to prepare plans for developing the required treatment capacity for mixed waste. Each plan must be approved by the State or EPA, after consultation with other affected States and consideration of public comment, and an order issued by the regulator requiring compliance with the plan. The Act further provides that DOE will not be subject to fines and penalties for LDR storage prohibition violations for mixed waste as long as it is in compliance with an approved plan and order.

The Act specifies that the STPs must address all mixed wastes at the site, regardless of the time of generation. For mixed waste for which identified treatment technologies exist, the plan must provide a schedule and milestones for constructing the necessary treatment capacity. For mixed waste without an identified existing treatment technology, the plan must include a schedule for identifying and developing technologies. The Act also requires the plan to address wastes where DOE proposes radionuclide separation and provide an estimate of the volume of waste that would exist without such separation; cost estimates and underlying assumptions must also be provided in the plan. Section 3021(b)(1)(C) of RCRA states that the plans may provide for centralized, regional or on-site treatment of mixed waste, or any combination thereof; and section 3021(b)(2) requires the states to consider the need for regional treatment facilities in reviewing the plans.

The Mixed Waste Inventory Report, required by the Act, provides an inventory of all mixed wastes stored or generated, or expected to be generated over the next five years, at each DOE site, and an inventory of treatment capacities and technologies. The Interim Mixed Waste Inventory Report, published by DOE in April of 1993, provides information on a waste stream-by-waste stream basis for each DOE site that generates or stores mixed waste. A Final Report is being prepared that reflects comments received on the Interim Report and further improvements in the data. The waste stream and technology information contained in the report serves as the starting point for the CSTPs.

The "Schedule for Submitting Plans for the Treatment of Mixed Waste Generated or Stored at Each Site", as required by the Act, was published April 6, 1993, in the Federal Register (58 FR 17875). The published schedule specifies that DOE sites will provide the site treatment plans in three phases: this "conceptual plan" by October 1993, a "draft plan" no later than August 1994, and a "final proposed plan" no later than February 1995.

DOE arrived at this tiered approach to preparing the STPs based on discussions with the states, EPA and other interested parties. The process provides opportunity for early involvement by the states and others in the decision making process. Most importantly, the CSTP and the draft plan provide an early opportunity for discussions on technical and equity issues between the site and the regulatory agency and among affected states, the EPA, and other parties. The interim plans provide a base of information about each site's waste, the technology needs, existing and planned treatment facilities, and treatment options, including potential options for treating off-site wastes, to facilitate these discussions.

At each stage, the STP will contain increasingly complete and detailed information. The Conceptual STP is focused on identifying treatment needs, capabilities, and options for treating the site's mixed waste. The Draft STP will identify DOE's preferred option for treating the site's mixed wastes, as well as proposed schedules for constructing capacity. The Final Proposed STP will be submitted to the State or EPA for review and approval, approval with modification, or disapproval, as required by the Act. Each version of the STP will reflect State equity discussions, as well as site-specific input from the individual regulatory agency and other interested parties on the previous submittal. It is DOE's intent that this iterative process, with ample opportunity for input and discussion, will facilitate approval of the STP and issuance of the compliance order required by the Act. DOE's goal is to have all plans and orders in place by October 1995.

1.4 CSTP Organization

LLNL's CSTP follows the same format as the CSTPs of the other DOE sites. This common format will facilitate cross-site comparisons.

Chapter 1.0 of the CSTP provides a general discussion of the plan, including its purpose and scope.

Chapter 2.0 presents general information on technical aspects of preparing the plans, including the rationale behind the treatability groupings and a discussion of characterization issues.

Chapters 3.0 through 5.0 identify treatment technology needs and treatment options for specific waste streams. These chapters of the CSTP are organized according to the radioactive waste classifications, i.e., low-level mixed waste, transuranic (TRU) mixed waste, and high-level mixed waste, defined in Section 2.2, because many of the treatment options and technology requirements are driven by the level of radioactivity associated with the waste. Not all waste classifications are present at all DOE facilities. The LLNL site has 26 waste streams. These waste streams are delineated in the "Interim Mixed Waste Inventory Report: Waste Streams, Treatment Capacities and Technologies" Data Base, April 1993¹.

Chapter 3.0, "Low-Level Mixed Waste," is further organized according to the availability of capacity and treatment technology to treat the waste stream:

- 3.1 Waste Streams With Existing Treatment Capacity
- 3.2 Waste Streams for Which Technology Exists (and does not need adaptation) But Without Capacity On-Site
- 3.3 Waste Streams for Which Technology Needs Adaptation or for Which No Technology Exists

Each section includes a description of the waste streams; an identification of the applicable treatability groups; and a description of the existing technology or the technology needs to treat the wastes, along with associated uncertainties and technical and administrative limitations.

In addition, preliminary treatment options for wastes without existing capacity are

identified to the extent possible. Options (e.g., treatment at the planned 'Mixed Waste Treatment Facility' at DOE site 'X') may include development of on-site treatment capacity, treatment in an existing facility or in capacity under development at another DOE site, the use of commercial capacity, and other regulatory compliance options. The implications and uncertainties associated with an option are described, including technical uncertainties, potential administrative barriers such as permit restrictions, and budgetary implications.

The options identified are those that appear technically able to treat the waste, given the limits in the data on waste streams and facilities, particularly facilities in the early planning stages. The intention has been to be all inclusive in identifying options; the options do not represent DOE preferred option or reflect its intentions for treating the wastes.

An additional section, "3.4 Waste Streams that Require Further Characterization or For Which Technology Assessment Has Not Been Done," is also included, because the appropriate treatment category for some wastes cannot be determined at this time. The section describes what is currently known about the waste streams and future activities to characterize the waste streams.

Chapters 4.0 and 5.0 on TRU and high-level mixed wastes have similar formats. The discussion differs from that for low-level mixed wastes, however, in that more is known about the treatment strategy for these types of wastes. Those strategies are discussed, as well as any uncertainties and technical issues associated with management of the wastes.

Chapter 6.0 discusses mixed wastes that are expected to be generated in the future, for example, wastes from environmental restoration activities. For environmental restoration wastes, the wastes and technology needs are described to the extent possible and schedules associated with conducting restoration activities identified.

Chapter 7.0 discusses mixed wastes for which radionuclide separation may be appropriate, as required by section 3021(b)(1)(B)(iii).

Chapter 8.0 summarizes this Conceptual Site Treatment Plan in two tables. Table 8.1 presents a summary in tabular form of the potential mixed waste treatment needs and options at LLNL, while Table 8.2 presents a tabular summary of LLNL's on-site treatment systems.

1.5 Other Activities Related to CSTP Development

Other DOE efforts are closely linked to the STP development. These include the IMWIR; activities conducted pursuant to the National Environmental Policy Act (NEPA); and compliance and cleanup agreements containing commitments relevant to treatment of mixed waste.

1.5.1 Interim Mixed Waste Inventory Report (IMWIR)

DOE published the IMWIR in April 1993. This report provides information on a waste

stream-by-waste stream basis for each DOE site that generates or stores mixed waste. The waste stream, treatment facility and technology information contained in the IMWIR serves as the starting point for the CSTP's, and descriptions are generally identical. However, it should be noted that data is continually being refined. The CSTP reflects the most current and accurate data regarding individual waste streams and their technology needs; as a result, there may be some differences between the CSTP and the IMWIR.

One key difference between the IMWIR and the CSTP's for all DOE sites is the listing of treatment facilities considered to be candidates for treatment options. The IMWIR only described existing DOE mixed waste treatment facilities and planned facilities that are in the latter stages of development. However in the CSTP, provisions have been made to identify as many as possible mixed waste treatment options. In addition to existing and planned DOE facilities described in the Interim Report, facilities at earlier stages of development have also been included. These facilities have generally not received any formal DOE approval, but are under consideration, or have been proposed by that site. As such, the future of these facilities, including the availability of funding and technical requirements, is less certain than for others. These facilities are included as potential treatment options, with their current status and stage of development defined as clearly as possible.

A list of candidate facilities for treatment options used by DOE is provided in **Appendix 1.2, "Candidate Mixed Waste Treatment System Information Sheets."** This listing, which notes whether or not a given facility was included in the April 93 IMWIR, is divided into four parts:

- Part 1: Existing DOE Facilities: facilities currently operating, or those that have DOE/HQ approval for facility start up (see Glossary, Section 2.2, "Key Decision" [KD] 4).
- Part 2: Approved Planned DOE Facilities: DOE/HQ has approved the mission need for the facility (Key Decision 0); the facility has at a minimum begun design, but hasn't yet received approval for start up (KD-4).
- Part 3 : Unapproved Planned DOE Facilities: some planning has been initiated (e.g., engineering/feasibility studies, functional design criteria), but the facility has not yet received initial approval (KD-0).
- Part 4: Existing Commercial Facilities.

1.5.2 Programmatic Environmental Impact Statement (PEIS) for Environmental Restoration and Waste Management

DOE's Office of Environmental Restoration and Waste Management (ERWM), is preparing a Programmatic Environmental Impact Statement (PEIS) to support complex-wide integration of environmental restoration, waste management, and technology development activities that are often now implemented on a site-by-site basis. The PEIS will analyze a broad range of programmatic alternatives involving issues such as: (1) land use, (2) the timing of innovative technology applications, (3) the selection of cleanup

levels for environmental restoration activities, and (4) the configuration of waste management facilities. The PEIS is intended to present to the public, states, EPA, and DOE an understanding of impacts to human health and the environment, together with the costs associated with a wide range of alternative strategies for managing the ERWM program.

Development of the ERWM PEIS is being closely coordinated with the preparation of STP's under the Act. DOE is committed to working with the states to develop waste management PEIS alternatives (i.e., possible configurations), broad enough to accommodate any reasonable configuration of waste treatment, storage, and disposal facilities that might emerge from the STP process. Based on preliminary input from the states, development of possible configurations will start from the perspective of each site managing its own wastes (i.e., a "decentralized" or "on-site" option). Draft information being generated to support the PEIS (e.g., hypothetical configurations, preliminary risk analyses, and cost studies), will be discussed and shared with states in support of STP discussions.

The Department believes that preparation of the PEIS in conjunction with the development of the STP's is the most expeditious means to meet the requirements of the National Environmental Policy Act (NEPA) and the FFCA. In this regard, the Draft PEIS is scheduled to be published in the second quarter of 1994, after submission of the CSTP's but before the August 1994 submission of Draft STP's. The alternatives in the Draft PEIS will reflect the site-specific options outlined in the CSTP's. The Draft PEIS will not identify a preferred alternative (i.e., configuration), for mixed waste facilities since this will be evolving in consultation with the states through the STP process. However, DOE believes that the PEIS analyses of potential risks and costs associated with a range of possible waste management configurations will provide valuable insight as the public, states, and DOE discuss the continued use of existing facilities and possible location of future mixed waste facilities.

DOE intends that the PEIS provide programmatic NEPA coverage for development and submission of STP's complex-wide. Therefore, the Final PEIS will be issued in the first quarter of 1995, at or near the time of DOE's submission of the final STP's to the states for approval. The preferred alternative (configuration), for mixed waste management will reflect the proposals contained in the final STP's and any agreements reached among the states and with DOE regarding equity concerns. To remain flexible and to accommodate potential changes after submittal of the final STP's to the states and EPA, the Record of Decision (ROD) for the PEIS will be issued following approval of the STP's by the states.

1.5.3 Compliance Agreements

Only one compliance agreement exists (for the Main Site, Livermore California and for Site 300, Tracy California). It is the Federal Facilities Agreement (FFA). For further discussion see Section 6.

2.0 Methodology

2.1 Assumptions for Conceptual Site Treatment Plans

GENERAL:

DOE will continue to place highest priority on protecting the health and safety of DOE employees, contractors, and the general public, and is committed to complying with all applicable environmental laws and regulations.

DOE will continue to operate in a resource-constrained environment.

The WIPP will open and will operate under a RCRA no-migration petition. Wastes destined for WIPP will be treated to meet WIPP Waste Acceptance Criteria.

DOE will work closely with regulators throughout the STP process and will involve other stakeholders during STP development.

Waste generation from site mission activities will continue throughout the development, approval, and implementation of the STP.

CSTP SPECIFIC:

Options are identified assuming there are no administrative or other non-technical barriers to treatment of off-site waste at any treatment facility, including barriers affecting related storage or transportation. Such barriers, if any, would be identified in evaluating the option.

Treatment technologies will be identified based on whether they can treat the waste to standards required by the RCRA land disposal restrictions, or equivalent State law (or could qualify for a variance under the law). In evaluating treatment technologies, factors such as waste minimization implications, the need for further treatment of waste residues to meet LDR, and characteristics of the resulting waste form will be discussed.

Waste streams, technologies, and capacities included in the CSTP are the same as those identified in the Mixed Waste Inventory Report, or an explanation of differences provided.

Mixed wastes generated by environmental restoration activities will be managed consistent with enforceable cleanup agreements. Identification, evaluation, and selection of treatment options for restoration mixed waste subject to enforceable cleanup agreements will reflect the process and schedules prescribed by such agreements.

Commitments in an existing compliance agreement, consent order, or permit pursuant to specific treatment technology or treatment facility will be identified in the CSTP as options, but identification of options other than those contained in such an agreement are not precluded.

Multiple options do not need to be identified for every waste stream, particularly where a site has an established on-site treatment approach for a waste stream, such as existing on-site facility or a facility under construction.

A facility with established waste acceptance criteria (WAC) is identified as an option only for waste streams that meet the technical requirements of the WAC.

Identified options are based on compliance with existing federal and state laws and regulations.

Waste management systems will comply with all applicable federal and state laws. Variances, exemptions, and waivers provided for in regulations are available when regulatory criteria are met.

Sites will be able to use available commercial facilities. If applicable, exemptions under DOE Order 5820.2A can be obtained if the criteria is met.

For the purposes of evaluating a treatment option at an off-site DOE facility, it is assumed that the facility treating the waste will be responsible for management of treatment residuals, in that issues associated with such management would be covered in the off-site DOE facility's CSTP.

CSTPs represent currently available information. New characterization data or information on new waste streams will be reflected in the ensuing version of the STP. STPs will be periodically updated to reflect treatment needs of newly generated and newly characterized mixed wastes.

2.2 Definitions

The definitions and discussion of terms used in this conceptual site treatment plan are in Appendix 2.1. The terms defined in Appendix 2.1 have been collected or derived from documentation for regulatory agencies, and DOE sites, as well as from environmental and other sources of regulations and documents, and some have been written by 180 day report team members. The words and phrases are listed alphabetically. Common abbreviations, if any, follow the term. Additions have been made that may be specific to this Conceptual Site Treatment Plan.

2.3 Treatability Groups

Treatability groups are used to categorize DOE waste stream information in a consistent and technically valid manner based on waste characteristics. The treatability groupings in the CSTP are based on three characteristics of the waste stream: radiological, parameters, physical/chemical matrix, and hazardous component. Each of these treatability groups can then be divided into sub-categories. Waste streams were classified using the treatability group classification system referenced in the IMWIR and the DOE Waste Treatability Groups Guidance Document, dated July 14, 1993.

The radiological parameters reflect the activity level of the waste and will influence the design of the treatment facility to control radioactive releases and operator exposure. The primary radiological categories include low-level waste, transuranic waste, and high-level waste.

The bulk physical/chemical matrix parameters describe the actual make-up of the waste. This affects both the appropriate regulatory treatment requirements and the applicability of specific treatment technologies. The primary matrix categories are liquid, solid, and specific waste forms (which includes batteries, elemental lead, and explosives). There are many sub-categories under each primary category to accommodate the large numbers of variables. For example, sub-categories under solids include sludges/particulates, organic and inorganic debris, and soil.

The hazardous component in each waste stream includes the hazardous characteristic or listing under RCRA. EPA has established LDR treatment standards for most hazardous wastes under RCRA that are based on BDAT. Waste streams may be identified as hazardous if the waste exhibits the characteristics of ignitability, corrosivity, and reactivity or toxicity or the waste is included among the listings for hazardous waste from specific sources, non-specific sources and for discarded commercial chemical products, off-specification species, and container and spill residues. For certain newly-identified wastes, such as the new TC wastes for certain organics, EPA has not promulgated a treatment standard for land disposal.

Waste that fits the criteria for a treatability group will have the same physical, chemical, and radiological parameters. Thus treatability groups from all sites can be compared for purposes of assessing treatment technology needs, treatment capacity needs, and technology development needs.

2.4 Characterization of Mixed Wastes

A general overview on waste characterization and a discussion of procedures used by LLNL to characterize waste is provided in the "Waste Preparation Guide for Generators of Hazardous [Radioactive and Mixed] Waste". A more specific discussion is provided in Section 3.0 of this Conceptual Site Treatment Plan. Either process knowledge or data from sampling and analysis can be used to characterize waste streams. The degree of characterization may be dependent upon the waste form and nature of the waste generating process.

Generally, the analytical methods are found in SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, published and periodically amended by EPA. The methods for evaluating the leachability of a waste are outlined in the "Toxicity Characteristic Leachate Procedure" in Part 262, Appendix II in Title 40 of the Code of Federal Regulations and the "California Assessment Manual Wet Extraction Test" in Title 22 of the California Code of Regulations.

Information on MLLW characterization at LLNL can be obtained from the Hazardous Waste Management Division Requisition Control Office (HWM-RCO), the biennial report required by the California Department of Toxic Substances Control (DTSC), and Operating Records maintained on-site. In addition, the LLNL RCRA Part B permit application includes the Waste Analysis Plan (WAP), and the LLNL Environmental Protection Department's Handbook provides information on the procedures for characterizing waste streams.

Analytical methods, sampling procedures, criteria for characterizing wastes can be found in 40 CFR, 22 CCR, the WAP, and the Waste Preparation Guide for Generators of Hazardous Waste. MLLW characterization data obtained by sampling and analysis is associated with a high level of confidence because the wastes are typically homogeneous

and amenable to sampling. Analytical results are often verified by duplicates and blanks. Generally, waste streams which are characterized only by knowledge of the waste generating process are assigned a low level of confidence. The confidence level may be impacted by certain technical constraints related to obtaining representative samples, such as heterogeneous process solids and debris wastes.

Process knowledge, sampling and analysis, or a combination of the two may be used to determine the appropriate RCRA hazardous waste codes (e.g., characteristic or listed RCRA hazardous wastes). A waste is routinely sampled and analyzed if information (process knowledge) about the waste is not adequate for treatment purposes and a representative sample can be obtained.

The generator is responsible for providing all information, including any necessary or required chemical analysis, to adequately characterize MLLW and to ensure proper handling and disposal. The hazardous components of all MLLW must be identified by the generator before the waste is accepted by the HWM Division. The identification of hazardous and radioactive constituents in a MLLW, including laboratory analyses, is certified by the generator of the waste. Analytical methods and protocols may include, but are not necessarily limited to, those approved by the EPA or certified by the State of California. A copy of all laboratory reports accompanies a requisition for waste acceptance.

MLLW for which generator knowledge is not available are identified as "unknown." The first step in identifying "unknown" MLLW is a radiological screening. The generator must submit a representative 100-gram sample for a gross alpha, beta, and tritium count analysis. When the presence of radioactive material is indicated, an additional 100-gram sample is required for isotopic analysis.

The U.S. EPA, State of California, and permitted waste disposal contractors may also routinely require specific laboratory analyses to verify that the composition of specific types of wastes comply with regulatory threshold limits. The use of EPA-approved analytical methods and laboratories certified by the State of California performing the analyses are required for these analyses. It is the responsibility of the waste generator to perform verification analyses on containers of waste prior to acceptance by the HWM Division. If generator knowledge of the waste is adequate to ensure proper handling and disposal, only limited verification by analysis is performed.

Quality Assurance and Quality Control (QA/QC) are delineated in the Waste Characterization section of LLNL's RCRA Part B permit application. This Waste Characterization section contains the Waste Analysis Plan which describes information on the QA/QC requirements for analytical laboratories used by LLNL and the amount of verification analyses that must be performed. The QA/QC procedures are part of LLNL's standard protocols for waste analyses. The Hazardous Waste Management Division of the Environmental Protection Department at LLNL performs a waste verification of 15% of its wastes. The verification procedures and required analytical methods are discussed in the Waste Characterization section of LLNL's Part B Permit Application.

There may be uncertainties with radioassay data on debris waste associated with sampling and analytical methods. Estimates of radionuclide content are determined based on a summation of radioactively contaminated constituents placed into the debris container. Other estimates are based on surface contamination readings by monitoring a portion of a surface and multiplying the reading per unit surface area by the total estimated waste surface. Other methods employ the use of "whole drum counting". An entire drum can be counted with radioassay equipment provided isotopic composition is known and the

levels of activity are sufficiently high enough to provide a significant count efficiency. Uniform samples are radioassayed by scintillation, gamma-spectroscopy, gross alpha and gross beta counting. Other radioassay equipment use Jelly detectors, doped crystal (NaI doped with Thallium for scintillation), scintillation cocktail counter, and ion chamber counters.

Uncertainties with radioassay vary with waste form, level of contamination, knowledge of the types of isotopes present, and analytical instrumentation used. The best numerical efficiency in the radioassay methods are based on procedures for counting representative samples of homogenous wastes. The limits of sensitivity presented in Table 2.1 are based on twice the standard deviation of the count for gross alpha, gross beta, and tritium.

Table 2.1 Limit of Sensitivity*

Matrix	Alpha	Beta	Tritium
Soils/Sludges ($\mu\text{Ci}/\text{gram}$)	1.00E-06	3.00E-06	2.00E-05
Aqueous ($\mu\text{Ci}/\text{ml}$)	2.00E-08	6.00E-08	3.00E-06
Oils/Solvents ($\mu\text{Ci}/\text{ml}$)	5.00E-07	2.00E-06	2.00E-05

* Based on procedures used at the time of writing this CSTP. Procedural changes may increase or decrease this limit of sensitivity.

2.5 Treatment Options Analysis and Technology Selection Process

2.5.1 Introduction

This section describes the steps by which treatment options and technologies for LLNL's waste streams are analyzed as they relate to this CSTP. The treatment options analysis and technology selection process employed in this CSTP consists of three sequential phases: (1) determination of the waste stream treatment requirements; (2) analysis of the treatment options; and (3) the initiation of planning for a new treatment system or facility. The process provides a framework for assessing treatment options and identifying the issues or concerns associated with each option. The process of examining these options will provide the information necessary to point to the specific needs for new treatment facilities or systems. This examination may also indicate that an option such as a treatability variance or some other strategy is more appropriate. The need for new treatment systems or facilities will lead to the need to identify specific technology options and a means to make selections from the available options. This process will provide a smooth transition from the CSTP into the next phase of the preparation of the STP's.

Figure 2.5.1, "A Decision Process for Evaluating Treatment and Technology Options," depicts the logic that is followed in determining treatment options for a MLLW stream and the logic for initial technology selections for the development of new treatment systems or facilities. The three phases of the process are described as follows.

2.5.2 Phase I: Determination of the Waste Stream Treatment Requirements

An analysis of the treatment requirements for a waste is necessary before the treatment options for a given waste stream can be evaluated and compared. While treatment must destroy or immobilize the hazardous and radionuclide constituents, the treatment requirements for any waste are often governed by the matrix (the majority constituent). RCRA has specified technology based treatment standards (based on "Best Demonstrated Available Technology," or BDAT), and Concentration Based Treatment Standards (CBTS's) for the hazardous materials under its authority. The CBTS's are based on performance standards for the BDAT's. The BDAT's were established for the pure hazardous materials and may not necessarily be applicable to all of the matrix and hazardous material combinations to be found in DOE mixed wastes. If a BDAT is not specified for a constituent, the matrix material will require the use of a treatment technology more suitable than a BDAT to meet the CBTS requirements. If a BDAT is specified for a constituent and the waste matrix or radioactive contaminant precludes its use, a treatment variance will be obtained. This includes the application of recovery BDAT's such as RMERC (recover mercury, see Glossary, Section 2.2), which would recover a material with radionuclide contamination.

Determination of the treatment requirements for a mixed waste must include consideration of the treatment needs for both the RCRA and radiological constituents. The strategy of defining treatability groups as groupings of wastes with similar treatment requirements, provides a platform from which a systematic analysis of waste treatment options can be carried out. Treatability groups have been discussed in Section 2.3. Overlaid on LDR treatment requirements are processing considerations concerning radioactive constituents of mixed wastes which also influence treatability groupings. Section 2.3 describes the radiological groupings into which these wastes have been categorized, e.g. "Contact Handled" (CH)-alpha, CH-non-alpha, and "Remote Handled" (RH).

The mixed waste falling into the radiological categories of High-level Radioactive Waste (HLW) and Transuranic Waste (TRU) do not follow the same options analysis logic owing to differing regulatory or policy concerns (see **Figure 2.5.1**). The Nuclear Waste Policy Act of 1982 governs disposition of HLW and spent fuel. HLW must be made into a durable solid and disposed in a deep geologic repository. The disposal of TRU waste is governed by the Department of Energy National Security and Application of Nuclear Energy Act of 1980. TRU waste which is not to be directed to WIPP is subjected to the options analysis.

FIGURE 2.5.1 - A DECISION PROCESS FOR EVALUATING TREATMENT AND TECHNOLOGY OPTIONS.

The States and EPA have noted in their comments concerning the IMWIR that there is insufficient characterization information to determine the treatment requirements for many DOE wastes. These wastes and their characterization plans are discussed in Section 3.4. For those waste streams which have been adequately characterized, appropriate treatability groupings can be determined and treatment requirements can be identified. **Table 2.5.1** provides a spreadsheet of all the matrix/contaminant combinations to be found in DOE waste streams, as well as primary treatment requirements. Within each of the cells generic treatment processes, one or more are specified which are known to bring the waste into an LDR compliance state. The acronyms used in this table are similar but not equal to LDR BDAT acronyms.

Table 2.5.2 provides the key to the treatment acronyms that appear in the matrix/contaminant spreadsheet cells. Each waste stream was assigned to a spreadsheet cell based on its matrix and contaminants, and thereby coupled with appropriate treatment requirements, such as organic destruction and/or stabilization.

Once the top level treatment requirement was determined, e.g. organic destruction, a further examination of the type of organic destruction appropriate to the waste matrix was carried out. As an example, if an organic liquid matrix is considered, the organic destruction strategy for treating halogenated organics will be different from non-halogenated organics. Once the radiological groupings, with their processing and handling requirements, were combined with the treatment requirements necessary to achieve RCRA compliance, the waste was sufficiently characterized to begin an analysis of the treatment options.

Those waste streams for which the characterization data lacks sufficient detail to determine treatment requirements have been listed in Section 3.4. The reasons for the lack of characterization data, including, for example, lack of appropriate technology, are also presented in this section.

2.5.3 Phase II: Analysis of Treatment Options

Phase II, as presented in **Figure 2.5.1**, describes the bulk of the treatment options analysis process. There are two additional options, not shown here (**Figure 2.5.1**), which do not necessarily involve treatment but will also be discussed. The options analysis is a straightforward process in which the treatment requirements of the waste are matched against the treatment capabilities and waste acceptance criteria of existing facilities. An on-site option has been evaluated for each waste stream. No treatment option has been considered which would require legislative or regulatory change.

Figure 2.5.1 indicates three treatment options that are examined: on-site DOE facilities, off-site DOE facilities, and off-site commercial facilities. Facility status fell into four categories: existing facilities, planned and approved facilities, planned unapproved facilities, and no currently existing or planned facility. The definitions of planned approved and planned unapproved facilities are provided in Section 1.5. A catalogue of the existing and planned facilities (**Appendix 1.2**, "Candidate Mixed Waste Treatment System Information Sheets"), was used in analyzing these options. A planned (approved or unapproved) facility, may not have a detailed WAC available. In such a

Treatability Group		A	B	C	D	E	F	G	H	
	Waste Matrix	Toxic Organics	Toxic Organics & Metals w/HG	Toxic Organics & Metals w/o Hg	Toxic Metals w/o Hg	Toxic Metals w/Hg	Ignitable	Corrosive	Reactive	Stabilization Factors
1	Organic Liquids	ORDST	HGSEP, ORDST, STABL	ORDST, STABL	ORDST, STABL	HGSEP, ORDST, STABL	ORDST	NEUTR, ORDST	DEACT, ORDST	10%
2	Aqueous Liquids	WWTOR	HGSEP, WWTOR, METRM, STABL	WWTOR, METRM, STABL	METRM, STABL	HGSEP, METRM, STABL	WWTOR	NEUTR	DEACT	15%
3	Organic Sludges/Particulate	ORDST	HGSEP, ORDST, STABL	ORDST, STABL	ORDST, STABL	HGSEP, ORDST, STABL	ORDST	NEUTR, ORDST		25%
4	Inorganic Sludges/Particulate	ORDST	HGSEP, ORDST, STABL	ORDST, STABL	STABL	HGSEP, STABL	ORDST		DEACT	100%
5	Cemented Solids	ORDST	HGSEP, ORDST, STABL	ORDST, STABL	STABL	HGSEP, STABL				100%
6	Organic Debris	DECON, ORDST, STABL	HGSEP, ORDST, STABL, DECON	ORDST, STABL, DECON	ORDST, STABL, DECON	HGSEP, ORDST, STABL, DECON	DEACT, DECON, ORDST, STABL			25%
7	Inorganic Debris	DECON, ORDST, STABL	HGSEP, ORDST, STABL, DECON	ORDST, STABL, DECON	DECON, STABL	HGSEP, STABL, DECON	DEACT, DECON, ORDST, STABL			100%
8	Heterogeneous Debris	DECON, ORDST, STABL	HGSEP, ORDST, STABL, DECON	ORDST, STABL, DECON	DECON, STABL	HGSEP, STABL, DECON	DEACT, DECON, ORDST, STABL			50%
9	Soils with <50% Debris	ORDST	HGSEP, ORDST, STABL		STABL		DEACT, DECON, ORDST			100%
10	Soils	ORDST	HGSEP, ORDST, STABL	ORDST, STABL	STABL	HGSEP, STABL				100%
11	Lab Pack with Metals	ORDST	HGSEP, ORDST, STABL	ORDST, STABL	STABL	HGSEP, STABL	ORDST, STABL		DEACT, STABL	50%
12	Lab Pack without Metals	ORDST		ORDST, STABL			ORDST		DEACT	50%
13	Reactive Metals					HGSEP, DEACT, STABL	DEACT		DEACT	150%
14	Explosives					HGSEP, DEACT, STABL				15%
15	Compressed Gases	ORDST			ORDST, STABL		DEACT, ORDST			5%
16	Liquid Mercury					HGSEP, METRC, STABL				20%
17	Elemental Lead			ORDST, METRC, STABL	METRC, STABL	HGSEP, METRC, STABL				100%
18	Beryllium Lead				STABL					100%
19	Batteries (lead acid and cadmium)				NEUTR, METRC, STABL	NEUTR, METRC, STABL				100%
20	Other/Multiple	ND	ND	ND	ND	ND	ND	ND	ND	

CLS-93-946

TABLE 2.5.1 - Mixed Waste Matrix-Contaminant Treatment Matrix
Contact Handled MLLW: Non- α /Non-PCB

<u>Treatment Category</u>	<u>Abbrev.</u>	<u>Description</u>
Organic Destruction	ORDST	Destruction of organic liquids and solids by a broad spectrum of thermal and non-thermal organic destruction technologies including incineration; other thermal technologies such as vitrification, plasma hearth, molten metal, etc. and non-thermal technologies such as chemical oxidation, electron beam, silent discharge plasma. Some of these technologies are also applicable for the STABL and METRC groups.
Aqueous Liquids (Waste Water Treatment for Organics)	WWTOR	Treatment technologies for oxidation of organics contained in a predominantly aqueous medium. Examples include wet oxidation, catalyzed wet oxidation, supercritical water oxidation and related technology variations.
Metal Removal	METRM	Metal ion and particulate removal from liquids. Examples include settling, filtration, precipitation, ion exchange, carbon adsorption, etc.
Stabilization	STABL	All immobilization and microencapsulation technologies, e.g. cementation, vitrification, polymer encapsulation, etc.
Metal Recovery	METRC	Methods for separation/collection of metals from waste streams for reuse or recycle. Examples include sorting, melting, and decontamination.
Mercury Separation	HGSEP	All mercury separation, collection, and immobilization methods. Examples include gravitational, thermal, and chemical techniques to separate mercury for recycle or for immobilization by amalgamation.
Decontamination	DECON	Extractive, mechanical, hydraulic, thermal, and electrochemical techniques used to remove contamination from substrate materials.
Neutralization	NEUTR	Acid or base additions to neutralize waste streams.
Deactivation	DEACT	Appropriate technologies to deactivate reactives such as sodium or uranium metal or cyanides prior to disposal.

TABLE 2.5.2 -   **GENERIC WASTE TREATMENT CATEGORIES AND DESCRIPTIONS**

case, a planned facility is only considered as a valid option, if the waste stream(s) under consideration match the treatability group(s) of the waste stream(s) for which the facility is being designed. Two other options (not shown in **Figure 2.5.1**), treatability variances and further characterization to demonstrate LDR compliance, are also considered for each waste. In the case of wastes for which there are no existing or planned treatment facilities on-site, an option requiring the development of on-site treatment capabilities is discussed.

Information concerning the treatment requirements of the waste and the treatment capabilities of the facility are provided in each case that an option is considered viable. Technical and non-technical issues associated with the choice of the option are identified. Primary issues such as characterization data that are not complete enough to determine treatment requirements for a waste or lack of sufficient information concerning WAC's for a facility are emphasized. Budgetary impacts of selecting an option are also included.

2.5.4 Phase III: Beginning the Development of New Treatment Capabilities

For many wastes the evaluation of an on-site treatment option has required analysis of the need for new treatment capabilities. Selecting the development of a new facility as an on-site treatment option requires additional steps such as: analysis of treatment technology options, baseline system development, systems analysis, cost analysis and a number of other factors. Phase III of **Figure 2.5.1** presents activities and resources, e.g. potential treatment technologies included in the process of defining a new treatment facility. Waste stream treatment requirements are the core criteria which influence the treatment system design. All of the activities in the treatment and technology options identification process beyond this point need the waste to be characterized well enough that treatment requirements can be specified. At a minimum, the matrix and the probable range of contaminants must be known.

The baseline treatment technology choices are dictated by waste stream treatment requirements (technical) as well as non-technical issues. Issues associated with options such as the existence of permit restrictions or the need to revise NEPA documentation are discussed.

In many cases a waste stream by virtue of its matrix and contaminant combination requires the specification of a system or treatment train which is comprised of more than one technology. Matching the appropriate treatment technologies to the treatment requirements for the waste can be a time consuming process which is further complicated by the number of wastes for which new treatment systems must be developed.

At this point in the process, baseline technology development needs become apparent for those wastes for which baseline technology options have been identified. These needs take several forms which include the total lack of an appropriate technology to satisfy a particular treatment requirement as well as needed adaptations to an existing technology in order to satisfy unique treatment requirements of a specific waste. These waste streams and their technology needs are discussed in detail in Section 3.3. Further technology development needs will become apparent as baseline systems choices are completed.

As the CSTP evolves into the Draft Site Treatment Plan (DSTP), baseline system designs for individual waste streams and treatability groups will be analyzed by standard systems engineering techniques to evaluate performance parameters. These performance evaluations will suggest further technology development needs. In anticipation of this, technology development needs presented in this CSTP should only be considered as an interim list which will become more complete by the time the proposed Final Site Treatment Plans are prepared.

3.0 Mixed Low-Level Waste Streams

MLLW contain both a hazardous waste as defined in Title 40 of the Code of Federal Regulations (otherwise known as "RCRA") and source, special nuclear or by-product material subject to the Atomic Energy Act of 1954 (42 USC 2011 et seq.). MLLW meets the hazardous waste criteria as defined in 40 CFR 261 and the low-level waste definition in DOE Order 5820.A.

Mixed low-level waste streams (MLLW) generated at Lawrence Livermore National Laboratory (LLNL) are treated to meet the concentration-based and technology-based RCRA Land Disposal Restriction (LDR) standards found in 40 CFR, Part 268. For specific aqueous waste streams, treated effluent may be discharged to the sanitary sewer if the effluent concentrations do not exceed the discharge limits established by the local POTW. Other waste streams such as filter cake generated from the treatment of aqueous wastes is stabilized and placed in storage at on-site regulated waste management storage areas.

3.1 MLLW with Existing Treatment Capacity

Mixed waste streams and treatment technologies currently in use at LLNL's on-site Hazardous Waste Facilities are discussed in Section 8.5 of DOE's *Interim Mixed Waste Inventory Report: Waste Streams, Treatment Capacities and Technologies*, April 1993 (IMWIR).

MLLW that can be treated to LDR standards using existing technologies are discussed in Section 3.1.1. LLNL does not currently ship any MLLW to an off-site facility for treatment. Treated mixed wastes are currently stored at RCRA interim status storage facilities at LLNL. Mixed waste streams which require further characterization, technology assessment or require technologies that need adaptation are discussed in Sections 3.3 and 3.4 of the CSTP.

Mixed waste streams which are currently being treated on-site are identified in the IMWIR as waste stream numbers: 2401, 2403, 2404, 2410, 2454. Waste profile sheets in the IMWIR provide information about the individual waste streams. The IMWIR data was obtained from LLNL operating records as of December 31, 1992. As information about existing waste streams is revised or new information becomes available, DOE and LLNL will provide the information in future updates of the IMWIR. Table 3.1 is a summary of the IMWIR information. The table identifies waste stream ID#s, RCRA hazardous waste codes, radionuclide content, waste form (as reported in the IMWIR in the "matrix" field), current inventories (as of December 31, 1992), and treatability group.

The treatability group descriptions in Table 3.1 include both the IMWIR classifications and the treatability groupings provided by DOE in the July 14, 1993 DOE Waste Treatability Group Guidance Document. Each waste stream identification number actually represents many small volume waste streams which can be treated using different technologies and treatment trains to meet the RCRA LDR treatment standards.

Table 3.1 Wastes for Which LLNL has Treatment Capacity

IMWIR Number	RCRA code	Radio-nuclide α	Waste Form	Volume (M ³)	Treatability Group (IMWIR)/ New Guidance
2401*	D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D038, D039, D040, F001, F002, F005, F007, F009	Alpha emitter, < 10 nCi/g, Beta and Gamma emitters are also present	Inorganic Sludges / particulate-es	38.0	(MLLW CH, Inorganic Sludges/Particulates, Toxic Organics and Metals w/o Mercury)/ Homogenous Solids
2403*	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D038, D039, D040, F001, F002, F005, F007, F009	Alpha emitter, < 10 nCi/g, Beta and Gamma emitters are also present	Aqueous Liquid	25.0	(MLLW CH, Aqueous Liquid, Toxic Organics and Metals w/ Mercury)/Acidic, Neutral, and Basic Aqueous Liquids
2404	D005, D006, D007, D008, D009, F002	Alpha emitter, < 10 nCi/g, Beta and Gamma emitters are also present	Inorganic Sludges/ particulate-es	4.0	(MLLW CH, Inorganic Sludges/Particulates, Toxic Organics and Metals w / Mercury)/Homogenous Solids
2410	D005, D006, D007, D008, D009, F002, F005	Alpha emitter, < 10 nCi/g, Beta and Gamma emitters are also present	Soils	4.0	(MLLW CH, Soils, Toxic Organics and Metals w / Mercury)/Homogenous Solids
2454§	D001, D007, D008, D009, D011, F001, F002, F005	Alpha emitter, < 10 nCi/g, Beta and Gamma emitters are also present	Organic Sludge/ particulate-es	0.3	(MLLW CH, Organic Sludges/Particulates, Toxic Organics and Metals w / Mercury)/Homogenous Solids

* RCRA Codes are more correct than the ones displayed in the IMWIR. Revisions were made following further characterization of the waste streams.

α Added descriptions to the radionuclide information.

§ This waste stream was also placed under CSTP section 3.4.

The adequacy of the characterization (or classification) for treatment of MLLW IMWIR Nos. 2401 and 2403 is high. LLNL has obtained characterization data using standard analytical methods and sampling procedures. The analytical data directly pertain to the

requirements for treatment to meet LDR standards. The physical matrix of these waste streams is well defined and uniform. For MLLW IMWIR Nos. 2404, 2410, 2454 the characterization is acceptable for the purpose of defining LDR treatments that may be used. The physical matrix of these waste streams is also well defined.

3.1.1 Description of Existing Capacity

Table 3.2 identifies the BDAT technologies that are currently in use at existing on-site treatment facilities at LLNL. The five letter BDAT codes given in the table are those found in 55 FR 3884, January 31, 1991. Support technologies are non-BDAT technologies which are not used to treat waste to LDR levels.

Descriptions of the treatment technologies used to treat MLLW in existing treatment units and their associated treatment technologies are presented in Table 3.2. General descriptions of BDAT and support technologies are found in Section 2.2.

Table 3.2 Treatment Technologies Used in the Existing Treatment Units

Treatment Unit (Existing)	Best Demonstrated Available Technology	Support Technology
Area 514 Waste Water Treatment Tank Farm Unit	CARBN, CHOXD, CHRED, NEUTR, DEACT, PRECP	Sizing/Blending, Physical Separation and Ion Exchange
Building 513 Solidification Unit	NEUTR, STABL	
Area 514 Waste Water Filtration Unit	N/A	Filtration
Building 513 Shredding Unit	N/A	Size Reduction
Building 612 Size Reduction Unit	N/A	Size Reduction and Radiological Separation

The Area 514 Waste Water Treatment Tank Farm Unit is used to treat aqueous waste stream No. 2403. The Building 513 Solidification Unit is used to treat all other waste streams (IMWIR Nos. 2401, 2404, 2410, 2454) to RCRA LDR standards and to meet the State of California's CAM-WET criteria. The support technology utilized at the Area 514 Waste Water Filtration Unit results in treated effluent which meets sanitary sewer discharge limits established by the city of Livermore Publicly Operated Treatment Works (POTW). The support technology utilized at the Building 513 Shredding Unit and Building 612 Size Reduction Unit are used for non-LDR treatment or producing final wasteforms.

The Hazardous Waste Management Division (HWM) of the Environmental Protection Department (EPD) at LLNL is authorized under RCRA interim status and its EIS/EIR, to accept wastes from other associated sites (Site 300, 2020 Research Drive, and the Livermore Airport) as well as from generation sites at the LLNL's main site. HWM has accepted MLLW from generators at the LLNL's main site and the associated sites, who are required to meet the waste acceptance criteria.

Appendix 3.1 provides information on existing treatment units including associated BDATs, design and RCRA Part A permit application capacities, normal operating capacities, usage, excess capacity, EPA Waste and Form Codes, and IMWIR waste stream ID numbers. Also presented in the Appendix is a table (Appendix 3.1C) presenting appropriate BDATs for associated IMWIR waste streams. This table is in matrix form since there is more than one BDAT option for each waste stream.

Any revisions to LLNL's Part A including addition of new waste streams and changes in treatment capacity are likely to require administrative approval by the State of California. LLNL has submitted a RCRA Part B permit application to the State of California for existing treatment and storage facilities. Issuance of a RCRA permit is still pending. The final RCRA permit will specify the conditions under which LLNL will operate the mixed waste storage and treatment facilities including types of waste streams and treatment capacities.

The technologies discussed below are used to support unit operations and does not result in treatment to an LDR standard, the City of Livermore Water Reclamation Plant discharge requirements, or the BAAQMD permit limitations or exemption. The support technologies do not treat a waste to RCRA LDR treatment standards and do not represent a BDAT. These technologies include separation, consolidation and size reduction, and waste form (or matrix) transformation. Many support unit operations can be used in parallel, or in series with other support operations, or with LDR treatment unit operations.

The flow charts for existing treatment units at LLNL are presented in **Appendix 3.2**. These flow charts describe the general flow process and, in some cases, indicate optional paths to take during batch treatment of MLLW. Each flow chart begins with a characterization step which is based on generator knowledge and/or sampling and analysis. When aqueous waste stream 2403 is treated, the liquids are first blended together until a batch 1,000-1,500 gallon batch is obtained for treatment. The liquids are placed into a Continuous Stirred Tank Reactor (CSTR). Organic bonds may then partially be cleaved with the addition of hydrogen peroxide. This process prevents clogging of the filtration unit during operation. The hydrogen peroxide also drives the metals to their highest oxidation state. This process facilitates flocculation and precipitation of the metals (D005, D006, D008, D009, D011 metals)⁶. Organic constituents (certain D waste codes and F001, F002, F004, F005) are adsorbed onto powdered activated carbon. The carbon (with adsorbed organics) and the precipitated metals are now trapped on a filter aid and discharged into a drum. The effluent is tested and is discharged to the sanitary sewer if the constituent concentrations are below the levels established in the permit. The contaminated filter aid is a newly generated MLLW (IMWIR No. 2401) which is stabilized. The stabilization process is performed on a batch basis and meets the RCRA LDR treatment standards or state of California CAM-WET criteria for land disposal. The stabilized waste form has a clay, gypsum cement, or Portland cement matrix that will pass the TCLP and meet LDR treatment standards.

LLNL is currently treating MLLW IMWIR Nos. 2401, and 2403. Mixed waste treatment systems at LLNL must meet RCRA LDR treatment standards for land disposal, effluent discharge limits pursuant to a discharge permit issued by the POTW, and local air quality standards established by the Bay Area Air Quality Management District. Waste streams treated at the existing facilities must also meet LLNL waste acceptance criteria. No off-site wastes from other DOE sites are currently accepted at the existing treatment facilities. NEPA documentation (EIS/EIR) was approved in 1993 and addresses treatment of only LLNL generated mixed wastes.

LLNL has the potential to expand operations if modifications to regulatory documentation such as RCRA permits are approved by the state of California. NEPA documentation must also be approved. Treatment system design, operating and excess capacities are presented in **Appendix 3.1**. LLNL may have treatment capability for small amounts of aqueous wastes and small volumes of homogenous inorganic solids amenable to stabilization if modifications to documentation allowing acceptance of wastes from other DOE sites are made.

The Building 612 Size Reduction Unit described in Section 3.1 is not operating. The unit is not planned to begin operation until after FY94 or later.

3.2 Waste Streams for which Technology Exists but Without Capacity On-Site

LLNL has mixed waste treatment units which are planned for operation in April 1994. The treatment units would utilize BDAT at the Area 514 facilities. Because of the number and variability of smaller waste streams which comprise the larger treatability groupings in the IMWIR, the planned treatment units may only partially treat the waste streams, either primary or secondary, to RCRA LDR treatment standards. Additional units which are not currently planned would be required to treat all waste streams to RCRA LDR standards. The five mixed waste streams discussed in this section (waste streams 2400, 2408, 2433, 2409, and 2427) are low level wastes which are contaminated with metals, TC organic constituents and F-listed solvents.

3.2.1 Description of MLLW and Treatability Groupings

Mixed waste streams for which LLNL has planned treatment units are identified in the IMWIR as waste streams 2400, 2408, 2409, 2427, 2433. Table 3.3 summarizes mixed waste stream information from the IMWIR. The table identifies the waste streams, RCRA waste codes, radionuclide content, waste form (reported in the IMWIR in the "matrix" field), volumes (as of December 31, 1992), and treatability group.

The level of confidence in the characterization of organic liquid wastes (2408 and 2409) is high as a result of analytical data on the wash waters (2403). Vacuum pump oils (2427) and organic liquids (2433) are uniform in consistency and generally are characterized by analytical data. Limited analytical data is available on waste stream 2400.

The confidence level of the characterization (or classification) for treatment of waste streams 2408 and 2409 is high. Waste stream 2400 can only partially be treated to LDR standards (see footnote below Table 3.3). These wastes will require additional characterization to determine which treatment options are the most viable.

Table 3.3 Wastes for Which LLNL has Planned Treatment Capacity

IMWIR Number	RCRA code	Radio-nuclide □	Waste Form	Volume (M ³)	Treatability Group (MWIR) / New Guidance
2400§	F001, F002, F003, F005	Alpha emitter, < 10 nCi/g Beta/Gamma emitters are also Present	Lab Packs without Metals	3.0	(MLLW CH, Lab Packs without Metals, Toxic Organics) / Organic Liquids (TOC≥90%) and Debris (50-90%)
2408*	D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D038, D039, D040, F001, F002, F005	Alpha emitter, < 10 nCi/g Beta/Gamma emitters are also Present	Organic Liquids	10.0	(MLLW CH, Organic Liquids, Toxic Organics and Metals w/o Mercury) / Organic Liquids (10%≤TOC<90%)
2409*	D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D038, D039, D040, F001, F002, F005	Alpha emitter, < 10 nCi/g Beta/Gamma emitters are also Present	Organic Liquids	50.0	(MLLW CH, Organic Liquids, Toxic Organics) / Organic Liquids (10%≤TOC<90%)
2427	D006, D007, D008, F001, F002	Alpha emitter, < 10 nCi/g Beta/Gamma emitters are also Present	Organic Liquids	6.0	(MLLW CH, Organic Liquids, Toxic Organics and Metals w/o Mercury) / Organic Liquids (TOC≥90%)
2433	D001, D002, D005, D007, D008, D009, D010, D019, D039, D040, F001, F002, F003, F005	Alpha emitter, < 10 nCi/g Beta/Gamma emitters are also Present	Organic Liquids	1.8	(MLLW CH, Organic Liquids, Toxic Organics and Metals w/ Mercury) / Organic Liquids (TOC≥90%)

§ This waste stream was also placed under CSTP section 3.4 because the stream may first be manually split into wastes planned for treatment and wastes needing further characterization.

* RCRA Codes are more accurate than the ones displayed in the IMWIR. Additions and deletions were made following further characterization of the waste streams.

□ Added descriptions to the radionuclide information (more than IMWIR) were included here.

3.2.2 Description of Needed Technology and Capacity

EPA considers many technologies "Best Demonstrated Available Technologies." Table 3.4 below identifies the BDAT technologies that are planned for use in fiscal year 94. Also described are technologies that are considered "support technologies"⁴ because they are not used to meet an LDR treatment standard. These support technologies include separation, consolidation and size reduction, and waste form (or matrix) transformation to prepare wastes for the planned treatment units.

Additional treatment capability will be brought on line to treat wastes already being treated at existing facilities. The treatment facilities, which are planned for fiscal year 94, would treat both hazardous and MLLW and provide additional treatment capability to treat waste streams 2401, 2403, 2404, 2410, 2454 discussed in section 3.1. Table 3.4

(revised 11/5/93)

provides a summary of the planned treatment units, BDAT, and support technologies that will be used to treat MLLW. The design and normal operating capacities for the planned unit are presented in **Appendix 3.1**.

Table 3.4 Treatment Technologies to be Used in the Planned (Proposed) Treatment Units

Treatment Unit (Proposed)	Best Demonstrated Available Technology	Support Technology
Area 514-1 Carbon Adsorption Unit	CARBN	Scrubbing
Area 514-1 Portable Blending Unit	CARBN, CHOXD, CHRED, NEUTR, DEACT, PRECP	Sizing/Blending, Physical Separation and Ion Exchange
Area 514-1 Tank Blending Unit	CHOXD, NEUTR, DEACT	Sizing/Blending
Area 514-1 Centrifugation Unit		Centrifugation
Area 514-1 Cold Vapor Evaporation Unit		Vacuum Evaporation
Treatability Study - Microfiltration		Radiological Separation

3.2.3 Treatment Options by Waste Stream/Treatability Group

LLNL has three potential approaches to the treatment of these mixed waste streams to meet RCRA LDR standards. Each treatment scenario discussed includes the use of appropriate BDAT to meet the treatment standards. The additional units other than those identified as planned units in Table 3.4 are not included in any current DOE budget profile.

Treatment Option 1: Separation. Treatment for Organics in Liquids, Debris treatment, Stabilization of Metals

This option includes physical separation of primary waste streams into solid phases and liquid phases (organic and aqueous).

Organic destruction technologies such as thermal destruction or chemical oxidation can be used to treat liquids contaminated with organic constituents. Organic destruction and other debris treatment technologies may result in treatment residuals (off-gasses) which could require treatment to meet LDR standards. Aqueous waste streams containing metals and low level of organics may be treated to levels acceptable for discharge to the sanitary sewer. Solid waste forms contaminated only with metals can be treated to meet RCRA LDR standards using stabilization technologies. Solid wastes which can be classified as debris under the recently promulgated Debris Rule may be treated to remove organics using the extraction, destruction or stabilization technologies identified by EPA. When extraction or destruction technologies are used, the treated waste is no longer regulated as hazardous under Subtitle C of RCRA.

Treatment Option 2: Treatment of Organics in Liquids, Debris Treatment, Stabilization of Metals

This option does not include initial physical separation of the primary waste stream prior to subsequent treatment to meet RCRA LDR standards.

Organic destruction technologies would be used to treat waste streams to meet treatment standards for organics. Metals in aqueous media could be treated by precipitation resulting in sludges which would subsequently be stabilized to meet LDR treatment standards. Effluent from aqueous waste treatment may be acceptable for discharge to the sanitary sewer. Residuals resulting from other organic destruction technologies may also contain metals which could require subsequent stabilization. As in Scenario 1, debris could either be treated using technologies and standards identified for the individual RCRA waste codes or the treatment technologies identified by EPA in the Debris Rule. Organic destruction technologies may result in generation of treatment residuals which could require further treatment to meet RCRA LDR treatment standards.

Treatment Option 3: Thermal Destruction Followed by Stabilization

This option only includes thermal destruction technologies for organics followed by stabilization of metals to meet RCRA LDR treatment standards.

Incineration (INCIN) and fuel substitution (FSUB) have been evaluated as potential technologies for treatment of the five waste streams. Each technology would be followed by stabilization (STABL) if metals are present as residuals. Fuel substitution may be appropriate if the heating value of the waste is reasonably high (i.e., low water content, high BTU oil). The ability of the treatment units to meet the performance objectives must be further evaluated for specific waste composition such as gas chromatography analysis⁹, particle size distribution analysis, calorimetry, adsorption isotherm analysis, filter pore symmetry and pycnometry analysis, measurements of fluid viscosity and density, and zeta potential analysis.

Under the federal RCRA LDR requirements, EPA has either set concentration-based or technology-based treatment standards. One exception to this is the newly-identified wastes such as the TC organic wastes, for which EPA has not promulgated LDR treatment standards. LLNL will need to evaluate treatment options after EPA has promulgated treatment standards for these wastes.

If alternative technologies to meet specific LDR treatment standards are proposed as part of any treatment option, LLNL may need to adequately demonstrate to the regulatory agency that the technology can meet the LDR treatment standard. Provisions in the LDR regulations allow facilities to petition for variances from LDR treatment standards or treatment methods.

LLNL has submitted a RCRA Part B permit application to the State of California for existing treatment units and the planned units identified in Table 3.4. No RCRA permit has been issued. The existing treatment units and proposed on-site mixed waste treatment units are expected to obtain approval by the State of California in June 1994. The types of wastes which can be treated and treatment capacities are subject to approval by the state of California. LLNL does not currently have the regulatory documentation in place to accept wastes from other DOE sites. LLNL's RCRA Part A application or future RCRA permit would have to be modified to allow acceptance of off-site waste. NEPA/CEQA documentation would also have to be modified.

The costs for treating organic waste streams varies. Annual operating costs and capital costs are estimated for an incinerator and other treatment operations such as microfiltration and catalytic oxidation; and, a range of these costs are presented in **Appendix 3.4** for individual IMWIR organic waste stream numbers. A list of treatment units evaluated are included in the appendix.

Other DOE sites which have or plan to have treatment capability for waste streams identified by LLNL are listed in **Appendix 3.5**. No suitable commercial treatment options have been identified to date. Disadvantages associated with treatment of mixed waste at off-site facilities include the additional costs for transporting waste to another state. The specifics regarding whether or not a DOE site can accept a waste stream will be based on both technical constraints and administrative barriers. The waste acceptance criteria may specify some of the technical constraints and the RCRA permits identify administrative barriers such as waste types and treatment capacities. For certain facilities identified by DOE as "planned", RCRA permits may not yet have been issued. There are also difficulties related to the packaging and shipping of certain types of wastestreams. Treatment of wastes on-site will require modifications of existing permit conditions and changes to other regulatory documentation including NEPA and CEQA.

3.3 MLLW for which Technology Exists but Needs Adaptation or for which No Technology Exists

Mixed waste streams in this category cannot be treated to LDR standards using existing BDAT technologies without significant adaptations. Treatment capacity has not been developed primarily due to the technology adaptation required for the radioactive constituents in the waste.

3.3.1 Description of Waste Streams and Treatability Groupings

The mixed waste streams that require adaptation to technology are 2412 and 2452. Information about the descriptions of waste is found in Chapter 8 of the IMWIR. Table 3.5 summarizes information that is presented in the IMWIR. The table includes mixed waste stream numbers, RCRA waste codes, radionuclide content, waste form (reported in the IMWIR in the "matrix" field), volumes (as of December 31, 1992), and treatability group. LLNL requires an annual capacity of about a cubic meter for waste stream 2412 and less than 1/20 of a cubic meter for waste stream 2452.

Table 3.5 Wastes for Which Adaptation to the Technology is Needed

IMWIR Number	RCRA code	Radionuclide	Waste Form	Volume (M³)	Treatability Group (IMWIR)/New Guidance
2412	D001, D003	Tritium at as high as 1 MCi per gram α	Reactive Metals	0.5	(MLLW CH, Reactive Metals)/Reactive Metals
2452	D009	Tritium at less than 100 mCi per gram	Liquid Mercury	.01	(MLLW CH, Liquid Mercury, Toxic Metals w/Mercury)/Liquid Mercury

α Based the specific activity of lithium tritide

Additional data on curie content is needed on treatability group 2412. There may be a large disparity between the reported activity and the actual activity. The mercury waste stream, waste stream 2452, is well characterized. This mercury was obtained from sprengle and diffusion pumps from the tritium facility. All mercury in the flasks has sampled and counted through liquid scintillation.

The confidence level of the characterization data on waste streams 2412 and 2452 is high. Although there is additional need to characterize waste stream 2412 in terms of the radionuclide content, waste treatment options can be developed. The waste stream quantities are small, do not vary from batch to batch, and have a uniform well-defined matrix.

3.3.2 Description of Needed Technology and Capacity

The BDATs required for treatment of waste stream No. 2412 are adsorption of gases (ADGAS) and reaction with water (WTRRX). Support technologies may include flammable gas burning and hydrogen desorption. The BDAT technology required for waste stream 2452 is amalgamation (AMLGM). A support technology includes mercury distillation.

Unit operations requiring adaptation are presented in Table 3.6. These units require adaptation due to the radioactive components within the waste. The type of adaptation required is the monitoring and control of radioactive component separation. Programmable logic control of systems will be used based on status of radiological monitoring indicators. Table 3.6 identifies the treatment technology needs.

Table 3.6 Treatment Technologies Proposed for Future Implementation

Treatment Unit (future)	Best Demonstrated Available Technology	Support Technology
Water Reaction Unit	WTRRX	
Hydrogen Desorption Unit		Radiological Separation
Burn Unit		Burn Hydrogen
Amalgamation Unit	ALGLM	
Distillation Unit		Radiological Separation

The general criteria applied and basis for selection of treatment technologies is described in Section 2.5 of the CSTP. Controlled Water Reaction can only be feasible if the hydrogen can be retained on a sponge (like titanium) during the process. Burning can only be performed if the resultant water can meet sanitary sewer discharge limits or the water can be stabilized. Additional requirements may include the evaluation of water reaction kinetics or mercury vapor pressures from various amalgams and alloy metal loading.

Characterization is based on generator knowledge and/or sampling and analysis. Waste stream 2452 may be amalgamated directly or distilled. The mercury can then be recovered or the amalgam can be stabilized. Hydrides waste streams 2412 can be directly reacted with water or hydrogen desorbed. The gases from desorption or water reaction

can then be burned or adsorbed on a sponge (like titanium). Water contaminated with reacted metal (now caustic) can be neutralized and treated using standard industrial aqueous waste treatment processes. If waste stream 2412 is a reactive gas it can be vented or adsorbed onto a reacting media.

The final waste forms are determined by the treatment option. Certain solid waste forms may be stabilized and either meet the LDR criteria for land disposal or treated using technologies discussed in the debris rule. The stabilized waste form is a clay, gypsum cement, or Portland cement which will pass the TCLP. Any aqueous waste from the water reactor can be neutralized and may be potentially discharged to sewer.

There are uncertainties in the performance of the treatment unit operations. The degree to which these operations meet the performance objectives must be evaluated on a full scale basis with these specific waste streams. Limitations also exist for tritium in aqueous wastes since the tritium cannot be removed.

Other options include additional studies related to reaction kinetics for controlled water reactions. These studies are important to discern how to properly control the reaction and gas generation. Optimization of amalgam formation is also important to reduce mercury vapor pressure, leaching and tritium migration. Further studies on distillation are also needed.

3.3.3 Technical Approach and Options

LLNL is currently developing a Mixed Waste Management Facility (MWMF) project. This project's mission is to design, construct, and start-up a facility by integrating the systems necessary to provide, through development and demonstration, the technical basis for the treatment of LLNL, DOE complex, and commercial low-level mixed organic wastes without the use of incineration. The facility will be used to obtain data to determine whether MWMF treatment technologies are equivalent to incineration. Equivalency to incineration will be based on the MWMF's ability to meet or surpass the treatment standards for the RCRA land disposal restricted (LDR) wastes that have incineration as their technology based standard.

Technical Scope of MWMF Project

The Mixed Waste Management Facility (MWMF) will develop the capability to provide organic mixed waste treatment engineering information utilizing alternatives to incineration. The scope of the three year project is to conduct equipment engineering development; design, fabricate, install, and initiate operation of an integrated mixed waste treatment system in an existing facility B-494, at LLNL. Conventional upgrades to B-494 will be required and will be accomplished through an existing line item (DWTF). The long term plan is to operate a test bed for new and future mixed waste technologies that could replace incineration.

The MWMF will initially house the following systems:

- feed preparation and transport systems;
- initial primary treatment systems;
- secondary treatment systems;
- experimental and back-up offgas systems; and
- final forms waste preparation.

The goal is to operate a national facility and involve other DOE sites and industrial partners during the design, development and demonstration. As a follow-on to this project, an optimized, pilot-scale treatment system will be demonstrated to provide engineering and design information for deployment of full scale treatment capability for industry and at other DOE locations.

3.4 Wastes Streams Requiring Further Characterization or For Which Technology Assessment Has Not Been Done

These mixed waste streams either require further characterization, completion of technology assessment, or both. As characterization and technology assessments are completed, viable treatment options will be developed. Waste streams which can be classified as debris may require additional characterization to determine the applicability of the debris rule. The LDR debris rule requires characterization of particle size (i.e., 60 mm in one dimension of over 50% by volume of the waste) and material matrix (i.e., glass, metal, wood, plastic, paper, etc.) for treatment purposes. The waste piece sizes, volume percentage above (or below) 60 mm, and material matrix is not known.

Waste streams requiring additional characterization are waste streams 2402, 2430, 2435, 2449, 2450, 2451, 2453, 2400, 2405, 2407, 2419, and 2424. Waste streams requiring technology assessments are waste streams 2454, 2402, 2430, 2435, 2451, 2400, 2405, 2407, 2419, and 2424. Table 3.7 summarizes information in the IMWIR.

3.4.1 Plan for Characterizing Wastes and Undertaking Technology Assessment

A preliminary plan for characterizing the wastes and performing the technology assessment is identified below in Figure 3.4. LLNL plans to use existing protocols and procedures to characterize these waste streams.

Figure 3.4 Projected Implementation Schedule (Preliminary Plan)

Table 3.7 Description of Waste Streams

IMWIR Number	RCRA code	Radio-Nuclide	Waste Form	Volume (M ³)	Treatability Group (IMWIR)/ New Guidance
2400§	F001, F002, F003, F005	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Lab Packs without Metals	3.0	(MLLW CH, Lab Packs without Metals, Toxic Organics)/Organic Liquids (TOC≥90%) and Debris (50-90%)
2402	D001, D003, D004, D005, D006, D007, D008, D009, D010, D011, F001, F002	Volatile radionuclide	Inorganic Debris	0.4	(MLLW CH, Inorganic Debris, Toxic Organics and Metals w/ Mercury)/Debris (50-90%)
2405*	D003, D004, D006, D008, D009, D011, F002	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters	Inorganic Debris	6.0	(MLLW CH, Inorganic Debris, Toxic Organics and Metals w/ Mercury)/Debris (50-90%)
2407*	D008	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters	Elemental Lead	0.5	(MLLW CH, Elemental Lead, Toxic Metals w/o Mercury)/Debris (50-90%)
2419*	D010, F002, F005	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Organic Debris	0.01	(MLLW CH, Organic Debris, Toxic Organics and Metals w/o Mercury)/Debris (50-90%)
2424*	D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, D015, D018, D028, D035, D038, D039, D040, F001, F002, F005, F008, F009	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Inorganic Debris	1.0	(MLLW CH, Inorganic Debris, Toxic Organics and Metals w/ Mercury)/Debris (50-90%)
2430*	D004, D005, D006, D007, D008, D011, F001, F002, D015, D018, D028, D039, D040, F001, F002, F005	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Inorganic Debris	3.0	(MLLW CH, Inorganic Debris, Toxic Organics and Metals w/o Mercury)/Debris (50-90%)
2435*	D004, D005, D006, D007, D008, D009, D010, D011, D020, D022, D031, F001, F002, F005, F020, F027	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Heterogeneous Debris	25.0	(MLLW CH, Heterogeneous Debris, Toxic Organics and Metals w/ Mercury)/Debris (50-90%)
2449*	D001, D009	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Lab Packs with Metals	0.3	(MLLW CH, Lab Packs with Metals, Toxic Metals w/ Mercury)/Debris (50-90%)
2450	D038, F001	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Organic Sludges/Particulates	3.0	(MLLW CH, Organic Sludges/Particulates, Toxic Organics)/Debris (50-90%)
2451	D006, D008, D009, F001	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Soil with <50% Debris	0.2	(MLLW CH, Soil with <50% Debris, Toxic Organics and Metals w/ Mercury)/Debris (50-90%)
2453	D007, D009, D039, F001, F002, F005	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Cemented Solids	30.0	(MLLW CH, Cemented Solids, Toxic Organics and Metals w/Mercury)/Homogeneous Solids (≤90%)
2454§	D001, D007, D008, D009, D011, F001, F002, F005	Alpha emitter, < 10 nCi/g Beta/ Gamma emitters are also Present	Organic Sludges/particulates	0.3	(MLLW CH, Organic Sludges/Particulates, Toxic Organics and Metals w/ Mercury)/Homogenous Solids

§ This waste stream was also placed under CSTP section 3.1 or 3.2 because the stream may first be manually split into wastes planned for treatment and wastes needing further characterization.

* RCRA Codes are more correct than the ones displayed in the IMWIR. Additions and deletions were made following further characterization of the waste streams.

⌘ Added descriptions to the radionuclide information (more than IMWIR) were included here.

4.0 Mixed Transuranic Waste Streams

LLNL's Transuranic (TRU) waste streams may produce mixed transuranic (MTRU) waste streams with the exception of salt block waste.

4.1 Strategy for Managing Mixed Transuranic Waste

Most MTRU waste generated at LLNL is expected to meet the acceptance criteria for disposal at WIPP without requiring any processing or treatment. One possible exception is HEPA filters, which need to be sampled and analyzed for fine particles. Fine particles may need to be immobilized.

The WIPP Waste Acceptance Criteria (WIPP WAC) are based on environment, safety, and health concerns involving disposal of waste at the WIPP. It is also based, through its incorporation of the TRUPACT-II Authorized Methods of Payload Control (TRAMPAC) requirements, on transportation concerns.

The WIPP WAC, document WIPP/DOE-069, Revision 4, is not in its final version, although it is not expected to change significantly. At present, approximately one half of our MTRU waste does meet the thermal power requirements for transport.

4.1.1 Overview of Past and Current MTRU Waste Management Practices and Operations.

4.1.1.1 Past and Current MTRU Waste Management Practices and Operations.

MTRU waste is currently generated at LLNL in the Plutonium Facility and in the Heavy Element Facility. Solidified liquid MTRU waste was also generated by Hazardous Waste Management in Building 419. MTRU waste is currently segregated into special mixed waste drums or boxes. In the past, generated MTRU waste parcels were placed in the waste drum or box located in each workplace. Segregation has therefore, greatly reduced the quantity of mixed waste containers being generated.

New waste containers are inspected by Hazardous Waste Management and sent to waste generators who again inspect them. Waste parcels are added to containers as the parcels are generated. After the waste in a container has reached a specified limit (e.g., weight limit, estimated activity limit, or volume limit), the container is closed, sealed, assayed, and moved to a waste accumulation area. The container is then moved to a Hazardous Waste Management storage facility.

4.1.1.2 MTRU Waste Acceptance Criteria

Waste acceptance criteria for WIPP and the Hazardous Waste Management storage facility are followed. Hazardous Waste Management places additional restrictions on the amount of radioactivity permitted in a container. Materials Management places additional restrictions on the amount of radioactivity due to assay requirements.

4.1.1.3 MTRU Waste Characterization

Characterization of the waste as to radionuclide composition, hazardous components, and physical form is documented on the Waste Parcel Log Card for each parcel and on the Waste Package Control Record for each package. Characterization requirements are described in the LLNL TRU Waste Program Certification and Quality Assurance Plan, M-078-121, in the training, EP0021, for this plan, and in the safety procedures of the facilities generating TRU waste.

4.1.1.4 MTRU Waste Storage

MTRU waste is stored by Hazardous Waste Management in the Bldg. 612 storage facility and in the Bldg. 233 waste accumulation area. A small amount of waste, some of which is classified, is stored by Materials Management in its Bldg. 233 vault.

4.1.1.5 MTRU Waste Retrieval

LLNL has no buried MTRU wastes.

4.1.1.6 MTRU Waste Processing

LLNL does not process or treat MTRU waste (with the possible exception of the HEPA filters which may require stabilization) .

4.1.1.7 MTRU Waste Transportation

Transportation of MTRU waste to the Nevada Test Site or to WIPP is expected to take place in TRUPACT-II. The LLNL Waste Certification Program is preparing a procurement for a contractor to write a site-specific TRAMPAC and procedures so that LLNL can use TRUPACT-II and its Mobile Loading Unit.

4.1.2 Current Inventory and Projected Generation

copy of the "Lawrence Livermore National Laboratory TRU WASTE INVENTORY 5/11/93" is included in **Appendix 4.1**. Appendix 4.1 lists the TRU waste in storage at the Hazardous Waste Management Division Building 612 storage facility as of that date.

4.1.3 MTRU Waste currently meeting WIPP-WAC

No waste currently meets the draft WIPP Waste Characterization Program Plan (WCPP), which requires real time radiography, sampling and analysis of solidified liquids, and container headspace gas sampling. LLNL does not currently have that capability.

4.1.4 MTRU Waste to be processed to meet WIPP-WAC

LLNL does not plan to process any MTRU waste. We may need to immobilize fine particles in HEPA filters if the particle analysis does not meet the WIPP WAC and TRAMPAC limits.

4.1.5 MTRU Waste to be reclassified to MLLW

It is possible that some mixed waste currently being managed as MTRU Waste will be reclassified as MLLW after LLNL obtains equipment capable of assaying them. Some drums newly-generated as MTRU Waste may also be reclassified as MLLW after assay. Reclassification of the waste is unlikely in this case due to the uncertainties of assaying small amounts of TRU material.

4.1.6 MTRU Waste which will not meet WIPP-WAC

Approximately one half of LLNL's MTRU waste is not expected to meet the current WIPP WAC requirements because it exceeds the thermal power limits for shipping in TRUPACT-II. Other waste in the form of HEPA filters may violate the fine particles limits of the WIPP WAC and TRAMPAC. LLNL will need to sample and analyze the waste to determine if the fine particles limits are being exceeded, and, if necessary, immobilize the fine particles.

4.2 MTRU Waste Streams Expected to Meet WIPP Waste Acceptance Criteria

All waste streams except HEPA filters (which require sampling and analysis or immobilization of fine particles) produce some waste packages expected to meet WIPP Waste Acceptance Criteria. Most waste streams also produce packages that fail to meet the TRUPACT-II thermal power requirements for hydrogen gas generation.

4.2.1 MTRU Waste Streams Requiring No Processing/Treatment to Meet WIPP Waste Acceptance Criteria

4.2.1.1 Description of Waste Streams

Waste Form 1:	Inorganic Debris - Glove Box (Combustible) Waste
RCRA Waste Code:	D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, F005
Radionuclide Content:	Various grades of plutonium, comprising ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , and ^{241}Am ; occasionally ^{244}Cm and isotopes of Np and Cf.

Volumes: LLNL has a total of 297 drums of TRU waste which translates to a total volume of 2200 cubic feet. The proportion of this total TRU waste volume that is comprised of waste form 1 is not known at this time. Waste form information has not been recorded in LLNL's computer database in the past. LLNL has inferred this from its place of origin. LLNL is in the process of examining records to determine the waste form of each package.

How characterized: Glove box waste is characterized by the waste generator and his or her knowledge of what radionuclides and any hazardous materials. Radionuclide amounts are characterized in the Plutonium Facility by radioassay of ^{239}Pu and by generator knowledge of relative or actual amounts of other radionuclides. Radionuclide amounts are characterized in the Heavy Element Facility by radioassay of all radionuclides.

Level of confidence: High for radioassay due to confidence in LLNL's analytical equipment and testing procedures. High for hazardous waste characterization since 1990 due to increased training of generators; low before then. The Waste Certification Program is re-evaluating and augmenting waste characterization of the entire stored inventory.

Adequacy: WIPP requires real time radiography (RTR) and headspace gas sampling of all waste. LLNL is currently investigating the use of RTR to characterize waste. LLNL is preparing to begin headspace gas sampling on a few drums.

Waste Form 2: Solidified Liquid Waste (contains 2446)

RCRA Waste Code: D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, F005

Radionuclide Content: Various grades of plutonium, comprising ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , and ^{241}Am ; occasionally ^{244}Cm and isotopes of Np and Cf.

Volumes: LLNL has a total of 297 drums of TRU waste which translates to a total volume of 2200 cubic feet. The proportion of this total TRU waste volume that is comprised of waste form 2 is not known at this time. Waste form information has not been recorded in LLNL's computer database in the past. LLNL has inferred this from its place of origin. LLNL is in the process of examining records to determine the waste form of each package.

How characterized: Solidified liquid waste is characterized by the waste generator and his or her knowledge of what radionuclides and any hazardous materials. Radionuclide amounts are characterized in the Plutonium Facility by radioassay of ^{239}Pu and by generator knowledge of relative or actual amounts of other radionuclides. Radionuclide amounts are characterized in the Heavy Element Facility by radioassay of all radionuclides.

Level of confidence: High for radioassay due to confidence in LLNL's analytical equipment and testing procedures. High for hazardous waste characterization since 1990 due to increased training of generators; low before then. The Waste Certification Program is re-evaluating and augmenting waste characterization of the TRU stored inventory.

Adequacy: WIPP requires real time radiography (RTR) and headspace gas sampling of all waste, and statistical sampling and analysis of homogeneous waste streams such as this one. LLNL is currently investigating the use of RTR to characterize waste. LLNL is preparing to begin headspace gas sampling on a few drums. There are no plans for sampling and analysis of homogeneous waste.

Waste Form 3: Metal Scrap Waste and Incidental Combustibles: Decommissioned Equipment (2444, 2448)

RCRA Waste Code: D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, F005

Radionuclide Content: Various grades of plutonium, comprising ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , and ^{241}Am ; occasionally ^{244}Cm and isotopes of Np and Cf.

Volumes: The volume of this waste form has been estimated to be approximately 5,195 cubic feet.

How characterized: Metal scrap waste is characterized by the waste generator and his or her knowledge of what radionuclides and any hazardous materials. Radionuclide amounts are characterized in the Plutonium Facility and the Heavy Element Facility by hand-held survey instruments, mass balance, and by generator knowledge of relative or actual amounts of other radionuclides.

Level of confidence: Low for radioassay since LLNL has no assay equipment for boxes, which this waste form almost always goes into. LLNL plans to acquire a passive-active neutron (PAN) assay instrument for boxes. High for hazardous waste characterization since 1990 due to increased generator training; low before then. The Waste Certification Program is re-evaluating and augmenting waste characterization of the TRU stored inventory.

Adequacy: Inadequate for radioassay because of the lack of box assay equipment. WIPP requires real time radiography (RTR) and headspace gas sampling of all waste. LLNL is currently investigating the use of RTR to characterize waste. LLNL is preparing to begin headspace gas sampling on a few drums.

Waste Form 4: Pyrochemical Salt Block Waste

RCRA Waste Code: (This waste stream has never produced mixed waste.)

Radionuclide Content: Various grades of plutonium, comprising ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , and ^{241}Am .

Volumes: LLNL has a total of 297 drums of TRU waste which translates to a total volume of 2200 cubic feet. The proportion of this total TRU waste volume that is comprised of waste form 1 is not known at this time. Waste form information has not been recorded in LLNL's computer database in the past. LLNL has inferred this from its place of origin. LLNL is in the process of examining records to determine the waste form of each package.

How characterized: Pyrochemical salt block waste is characterized by the waste generator and his or her knowledge of what radionuclides and hazardous materials that are contained in the block. Radionuclide amounts are characterized in the Plutonium Facility by radioassay of ^{239}Pu and by generator knowledge of relative or actual amounts of other radionuclides. Individual parcels of this waste form are also assayed, though these parcel assay results are not certified for accountability purposes at present.

Level of confidence: High for radioassay due to confidence in LLNL's analytical equipment and testing procedures. High for hazardous waste characterization since 1990 due to increased training of generators; low before then. This waste form has never been determined to be mixed waste.

Adequacy: WIPP requires real time radiography (RTR) and headspace gas sampling of all waste. LLNL is currently investigating the use of RTR to characterize waste. LLNL is preparing to begin headspace gas sampling on a few drums.

4.2.2 MTRU Waste Streams with Existing Non-LDR Processing/Treatment Capacity to Meet WIPP Waste Acceptance Criteria

Not applicable.

4.2.3 MTRU Waste Streams for Which Technology Exists but Without On-Site, Non-LDR Processing/Treatment Capacity to Meet WIPP Waste Acceptance Criteria

Not applicable.

4.3 Non-Defense-related MTRU Waste Streams and MTRU Waste Streams Not Expected to Meet WIPP Waste Acceptance Criteria

4.3.1 Waste Streams with Existing Treatment Capacity

Not applicable.

4.3.2 MTRU Waste Streams for Which Technology Exists but Without Capacity On-Site

Not applicable.

4.3.3 Waste Streams Requiring Further Characterization or For Which Technology Assessment Has Not Been Done

4.3.3.1 Description of Waste Streams (Similar to section 3.4.1)

Waste Form 5: HEPA Filters

RCRA Waste Code: D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, F005

Radionuclide Content: Various grades of plutonium, comprising ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , and ^{241}Am ; occasionally ^{244}Cm and isotopes of Np and Cf.

Volumes: Not known at this time. Waste form information has not been recorded in LLNL's computer database in the past. LLNL has inferred this from its place of origin. LLNL is in the process of examining records to determine the waste form of each package.

How characterized: HEPA filter waste is characterized by the waste generator and his or her knowledge of radionuclides and hazardous materials that are contained in the filter waste. Radionuclide amounts are characterized in the Plutonium Facility by radioassay of ^{239}Pu and by generator knowledge of relative or actual amounts of other radionuclides. Radionuclide amounts are characterized in the Heavy Element Facility by radioassay of all radionuclides.

Level of confidence: High for radioassay due to confidence in LLNL's analytical equipment and testing procedures. High for hazardous waste characterization since 1990 due to increased training of generators; low before then. Asbestos is suspected to be present in old HEPA filters. The Waste Certification Program is re-evaluating and augmenting waste characterization of the TRU stored inventory.

Adequacy: Inadequate characterization of fine particles. No WIPP-accepted method of immobilizing them has been developed if they are present in excess of allowable quantities. WIPP requires real time radiography (RTR) and headspace gas sampling of all waste. LLNL is developing a RTR facility, which has yet to obtain DOE funding. LLNL is preparing to begin headspace gas sampling on a few drums.

4.3.3.2 Plan for Characterizing Wastes and Undertaking Technology Assessment (Similar to section 3.4.2)

There are no definite plans for this waste stream at present, although this problem has been looked at several times over the years, perhaps decades. We need to be able to sample HEPA filters and analyze them for the presence of fine particles. WIPP WAC require that waste contain < 1% by weight of particles < 10 mm in diameter and < 10% by weight of particles < 200 mm in diameter. Because of the variety of processes going on in glove boxes, each waste HEPA filter needs to be sampled and analyzed. If fine particles in excess of that allowed by the WIPP WAC are found, they need to be immobilized. An immobilization technique would need to be developed and approved by WIPP. An example might be to grind up the filter medium and add cement and water to make concrete (solidification). Alternately, all HEPA filters could be treated to immobilize any fine particles without doing any sampling and analysis.

5.0 High-Level Mixed Waste Streams

5.1 Description of waste streams

LLNL does not generate, treat, or store any High-Level Mixed Waste (HLMW) and none is expected to be generated within the next five years.

5.2 Strategy for Managing High-Level Mixed Waste

LLNL does not generate or store HLMW and none is expected to be generated within the next five years.

6.0 Future Generation of Mixed Wastes Streams

LLNL will continue to generate MLLW and MTRU wastes through 1997 from the following activities:

Site environmental restoration

Decontamination and decommissioning of facilities

Research and development

Laboratory analytical testing

Facility maintenance and other support functions

Site environmental restoration wastes consist primarily of (1) soils excavated from on-site drilling/trenching activities and (2) groundwater from developing, testing, and purging wells. Refer to Section 6.1 for additional information.

Wastes resulting from decontamination and decommissioning activities will consist primarily of construction debris, equipment debris, miscellaneous debris and wash waters generated as a result of facility closures. Refer to Section 6.2 for additional information.

Other mixed waste streams will be generated during laboratory operations and are described in Section 6.3.

6.1 Environmental Restoration Waste

Environmental Restoration (ER) wastes consist of soil excavated from on-site trenching and clean-up activities. This soil is potentially contaminated with low level radioactivity, solvents, cadmium, lead, chromium, copper, nickel, zinc, beryllium, and mercury. LLNL projects 5 year generation of 8 cubic meters of LLM soil waste (IMWIR waste code 2410). Additional (ER) wastes consist of contaminated groundwater.

6.1.1 Sources and Quantities

Solids which contain low level rad (primarily tritium and some depleted uranium at Site 300) mixed with low concentrations of VOCs and possibly some metals in the soil matrix would be primarily the result of drilling operations and some minor excavations. These wastes could be generated at a rate of 20 to 50 drums per year or about 17 to 42 cubic meters through 1998.

Liquids (ground water) from developing, testing and purging wells could generate mixed waste with tritium and VOCs the primary contaminants. The total volume of potential liquid mixed waste is estimated to be less than 5000 gal per year. This would correspond to up to 76 cubic meters through 1998.

The potential exists for the generation of mixed waste through our treatment facilities, however, the probability is extremely low and would be confined to granulated activated carbon canisters or resin beds. Since no generation is expected, no estimate of volume can be made.

Drilling activities are likely to occur through 1998, so the potential exists for the generation of solid and mixed waste. Only one area currently has the potential of generating mixed waste and drilling activities in this area will be carefully planned to minimize the generation of mixed waste. Budgetary constraints by DOE, and orders from regulatory agencies may accelerate (but more likely delay) drilling activities which may generate mixed waste.

Fewer wells are anticipated for Site 300, and are proposed to be drilled in areas not yet completed for the Site Wide Remedial Investigation (SWRI). The generation of mixed waste during this time period is felt to be minimal.

These assumptions delineate the uncertainties in the generation of mixed wastes. As in most remediation work, it is difficult to provide more than qualitative estimation of waste generation.

6.1.2 CERCLA FFA (Inter Agency Agreement)

The EPA, the DOE, the DTSC, and the California Water Resources Control Board (CWRCB) entered into a Federal Facility Agreement (FFA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120 on November 2, 1988. Section VII of this Agreement, *Statutory Compliance/RCRA-CERCLA Integration*, states that the parties intend to integrate U.S. DOE's CERCLA response obligations and Resource Conservation and Recovery Act (RCRA) corrective action obligations, which relate to releases of hazardous substances, hazardous wastes, pollutants, or contaminants. Remedial actions selected, implemented, and completed under this Agreement will be protective of human health and the environment. Remediation of releases covered by this Agreement would obviate the need for further corrective action under RCRA. Under the agreement, RCRA is considered an applicable or relevant and appropriate requirement pursuant to CERCLA. Corrective action pertaining to RCRA shall be reviewed under the provisions of CERCLA.

6.1.3 Milestones Relevant to Remedial Action and Waste Generation

Remediation at the LLNL Main Site and Site 300 are covered under a FFA with EPA and the State of California. The Main Site is further along in the CERCLA process and is subject to the following milestones under the FFA; Feasibility Study (FS), Record of Decision (ROD), Proposed Remedial Action Plan (PRAP), and Remedial Action Implementation Plan (RAIP). The schedules of milestones for the Main Site and Site 300 are presented in **Appendix 6.1**.

Waste treatment options include aqueous waste water treatment (chemical precipitation, chemical reduction, etc.), washing, and solidification. Applicable treatment technologies are discussed in Section 3.1 of this Conceptual Site Treatment Plan. LLNL has existing treatment capacity for these waste streams.

6.2 D&D Wastes

6.2.1 Sources, Quantities, and Type of Wastes Expected to be Generated in the Future

Decontamination and Decommissioning wastes will be primarily generated as a result of facility closure. The only facilities scheduled for decontamination and decommissioning before 1998 are the Building 419 size reduction unit and solidification unit.

Four waste streams will be generated as a result of these D&D activities; (1) Construction debris consisting of ducting, stacks, floor tile, wall board, etc. (2) lab equipment including hoods, sink, electric furnaces, vapor degreaser, ultrasonic cleaners, parts washer, etc. (3) spent decontamination liquids and (4) miscellaneous debris consisting of bottles, rags, paper, wipes, personnel protection equipment, etc. An estimated 26,515 lbs. of construction debris, 15,100 lbs of lab equipment, 725 gallons (6046 lbs) of decontamination liquids, and 90 cubic feet (approximately 1800 lbs) of miscellaneous debris will be generated during closure operations. Building 419 closure activities are expected to begin in 1995.

6.2.2 Options for Waste Treatment, Storage, Disposal

The construction debris, lab equipment, and miscellaneous debris will be containerized for off-site disposal. The spent decontamination liquids will be containerized for on-site treatment (see section 3.1.2.1.1 for description of Bldg. 514 waste water treatment tank farm unit), off-site treatment and/or disposal.

6.3 Other Wastes

6.3.1 Sources, Quantities, and Type of Wastes Expected to be Generated in the Future

Approximately 430 cubic meters of MLLW and an additional 4 cubic meters of MTRU waste is projected to be generated from site operations through the end of 1998.

The MLLW wastes matrices include aqueous liquid, elemental lead, heterogeneous debris, organic and inorganic debris, organic and inorganic sludges/ particulates, lab packs with and without metals, organic liquids, reactive metals, soils, soils with < 50% debris, liquid mercury, and cemented solids. The aqueous liquid and heterogeneous debris waste streams are projected to each generate 12 percent of the MLLW. Organic liquids will account for almost 31 percent of the future volume and the inorganic sludges/particulates are projected to generate around 20 percent of the MLLW. Cemented solids are expected to account for 16 percent of the MLLW with the other waste streams mentioned previously (lab packs, soils, etc.) accounting for the remaining 9 percent.

9 percent.

MTRU wastes include inorganic debris, solidified aqueous liquid, and solidified organic liquids. Inorganic debris (scrap metal, lead bricks, metal shavings from research and maintenance, etc.) accounts for 52 percent of the volume, solidified aqueous liquid (residue from metal etching activities using sulfuric acid), and solidified organic liquids (spent solvents used to clean tanks and equipment during program changes) account for the remaining 48 percent.

LLNL is currently generating these MTRU and MLLW as a result of laboratory operations. LLNL expects to continue to generate these wastes through 1998 and beyond.

7.0 Mixed Waste Streams for which Radionuclide Separation May Be Appropriate

In some cases, radionuclide separation may facilitate waste management, waste treatment, and materials recovery. Radionuclide separation may be a viable option for mixed low level wash waters, metal chips and coolant, mixed low level organic fluids and Glass, LLM Inorganic Trash, LLM Mixed Soil and Sand, LLM Scrap Metal, LLM Lead Bricks, LLM Halogenated Solvent, LLM Oils, LLM Soil, LLM Empty Containers, LLM Empty Metal or Glass Containers, LLM Oils, LLM Organic Liquids, LLM Inorganic Trash, Lab Packs with Metals, Contaminated Soils, and Organic Sludges and Particulates.

7.1 Description of waste streams that may be candidates for radionuclide separation.

Descriptions of waste streams that may be candidates for radionuclide separation are included in Table 7.1.

7.2 Analysis and Implications

The volumes of mixed waste that may be separated are given in Table 7.1. Costs for disposal using separation technology is dependent upon which waste stream is to be treated by separation. Cost estimates are not available at this time due to the additional characterization required for waste streams amenable to separation which are discussed in Section 3.4.

There are implications that separation of radionuclides can be achieved to an acceptable level. This uncertainty is discussed in Section 3.2.2.6. This alone is the underlying assumption in separation technologies. Technical issues include evaluation of partition coefficients, particle size, liquid-solid equilibria, and pathways analysis.

Table 7.1 Candidate Waste Streams for Radionuclide Separation

ID #	Matrix	Waste Type/ Radionuclide content	Waste Description	Proj. Gen. 1994 thru 1998 (M ³)
2400	LabPack without Metal	MLLW Alpha emitter <10nCi/g Beta/Gamma emitters are also present	Low level radioactive organic wastes with PCB's from on-site laboratory research activities. Waste includes glass vials, pipettes and organic fluids. Generated from changing research and development activities which produce liquid organic fluids in glass vials.	6.0
2402	Inorganic Debris	MLLW Alpha emitter <10nCi/g	Inorganic trash received from on-site laboratory research and maintenance operations. This waste consists of sludge, paper coveralls, kimwipes, gloves, booties, wood, low level radioactivity, and chromium. Generated from changing on-site research and development activities where trash is derived from clean up and used safety equipment such as coveralls, paper, gloves, and booties.	0.4
2403	Aqueous Liquid	MLLW Alpha emitter <10nCi/g Beta/Gamma emitters are also present	Low level radioactive wash waters with low concentrations of organic compounds, metals and/or other toxic materials generated on site from machining operations. Waste waters may contain beryllium, chrome, mercury, cadmium, lead, and/or solvents. Derived from on-site machine shops which generate wash waters used to clean parts and equipment.	50.0
2405	Inorganic Debris	MLLW Beta/Gamma emitter	Low level radioactive scrap metal from on-site research and maintenance, including laboratory clean up. Includes lead bricks, metal buttons, pumps and stainless steel vessels. Used and decommissioned contaminated equipment and metal parts from changing research and development activities.	12.0
2407	Elemental Lead	MLLW unknown	Lead bricks and pieces contaminated with low level radiological contaminants, beryllium generated by off-site explosion experiments. These wastes are containerized and packed in vermiculite. Used and discarded lead bricks which may have been used for shielding purposes.	1.0
2408	Organic Liquids	MLLW Beta/Gamma emitter	Halogenated solvent waste, skimmed by phase separation from on-site waste water treatment processes. Waste streams may contain low level radiological contaminants, non-halogenated and halogenated solvents, and metals (lead, chromium cadmium). Waste consists of decanted solvents. Waste generated from solvent skimming treatment of halogenated contaminated waste water at the Building 514 Tank Farm.	20.0

ID #	Matrix	Waste Type	Waste Description	Proj. Gen. 1994 thru 1998 (M ³)
2409	Organic Liquids	MLLW Alpha emitter <10nCi/g Beta/Gamma emitters are also present	Low level radioactive organic wastes with PCB's from on-site laboratory research activities. Waste includes glass vials, pipettes and organic fluids. Generated from changing research and development activities which produce liquid organic fluids in glass vials.	100.0
2410	Soils	MLLW Alpha emitter <10nCi/g Beta/Gamma emitters are also present	Low level radioactive filter cake generated from on-site rotary-drum vacuum filtration of aqueous waste waters. Waste streams into the waste water facility may contain non-halogenated and halogenated solvents, and metals (arsenic, cadmium, barium, lead, chromium, mercury, and silver). Filter cake consists of moist diatomaceous earth and chemical precipitates. Generated from on-site research and development activities. Waste stream is produced from the treatment of liquid waste waters at the Building 514 Tank Farm.	8.0
2419	Organic Debris	MLLW Alpha emitter <10nCi/g Beta/Gamma emitters are also present	Low level radioactive wash waters with low concentrations of organic compounds, metals and/or other toxic materials generated on site from machining operations. Wash waters may contain beryllium, chrome, mercury, cadmium, lead, and/or solvents. Derived from on-site machine shops which generate wash waters used to clean parts and equipment.	0.020
2424	Inorganic Debris	MLLW Beta/Gamma emitter	Low level radioactive soil and sand blasting grit from on-site retention tank cleaning and surface spill clean-up. These wastes may contain crank case oil, hydraulic fluid, gasoline, diesel and paint chips. Derived from contaminated soil and sand blasting grit used for clean-up and decontamination activities.	2.0
2427	Organic Liquids	MLLW Alpha emitter <10nCi/g Beta/Gamma emitters are also present	Low level radioactive scrap metal from on-site research and maintenance, including laboratory clean-up. Includes lead bricks, metal buttons, pumps and stainless steel vessels. Used and decommissioned contaminated equipment and metal parts from changing research and development activities.	12.0
2433	Organic Liquids	MLLW Alpha emitter <10nCi/g Beta/Gamma emitters are also present	Halogenated solvent waste, skimmed by phase separation from on-site waste water treatment processes. Waste streams may contain low level radiological contaminants, non-halogenated and halogenated solvents, and metals (lead, chromium cadmium). Waste consists of decanted solvents. Waste generated from solvent skimming treatment of halogenated contaminated waste water at the Building 514 Tank Farm.	2.7

ID #	Matrix	Waste Type	Waste Description	Proj. Gen. 1994 thru 1998 (M ³)
2435	Heterogeneous Debris	MLLW Alpha emitter <10nCi/g Beta/Gamma emitters are also present	Low level radioactive inorganic trash generated by on-site research and laboratory clean-up activities. This waste includes a mixture of the following: pipettes, funnels, beakers, gloves, paper, filters, plastics, sponges, floor dry, and other laboratory trash. These may be contaminated with: beryllium, lead, and/or low level radioactive materials. Waste stream generated from changing research and development activities on-site at LLNL. Wastes consist of dry solid trash.	50.0
2449	Lab Packs with Metals	MLLW	Waste is lab packed waste contaminated with TC metals. Waste is one or more small containers of free liquids or solids surrounded by solid materials (virgin or waste materials) within a larger container, includes scintillation vials.	0.6
2450	Organic Sludges/ Particulates	MLLW	This waste contains metal chips and machine coolant. Mixture contains approximately 10% oil and depleted uranium turnings and chips from machining operations.	2.5
2451	Soil with <50% Debris	MLLW	This waste contains soils contaminated with hazardous constituents and radioactivity. Includes soils contaminated with organics, inorganics, or both. Contained in flasks and small containers resulting from equipment maintenance.	0.1
2454	Organic Sludges/ Particulates	MLLW	This waste is solid residues with inorganic matrix. It includes plastic and other organic debris with oil, kerosene, or other organic liquids. Sump waste, lab sink waste, filters, dip tanks, etc. are the sources of this waste.	0.2

8.0 Conceptual Site Treatment Plan Summary Tables

Chapter 8 summarizes the information presented in Chapters 1 through 7 in two summary tables. Table 8.1, "Summary of Potential Mixed Waste Treatment Needs and Options at LLNL", summarizes the treatment needs and options for each waste stream discussed in the CSTP. Table 8.2, "Summary of On-site Treatment Systems at LLNL", summarizes the on-site mixed waste treatment capabilities (existing and planned), capacities, and limitations. Table 8.2 also summarizes cost information for the on-site treatment systems. Tables 8.1 and 8.2 follow.

TABLE 8.1

Table 8.1 (Part 1 of 3)
Summary of Potential Mixed Waste Treatment Needs and Options at LLNL

Treatability Groups	Waste Stream(s)		Inventory as of December 1992		Current Inventory		Current Inv. Date	Projected Generation (1997)	
	ID #	SUP (Crab)	m ³	kg	m ³	kg		m ³	kg
TRU	2444		1.600	1,609.000	1.600	1,609.000	12/31/92	3.000	3,000.000
	2446		0.300	262.000	0.300	262.000	12/31/92	0.600	500.000
	2448		0.600	591.000	0.600	591.000	12/31/92	1.200	1,200.000
Debris (50-90%)	2402	3.4	0.400	396.000	0.400	396.000	12/31/92	0.800	800.000
	2405	3.4	6.000	6,029.000	6.000	6,029.000	12/31/92	12.000	12,000.000
	2407	3.4	0.500	4,400.000	0.500	4,400.000	12/31/92	1,000.000	8,800.000
	2419	3.4	0.010	2.000	0.010	2.000	12/31/92	0.020	4.000
	2430	3.4	3.000	314.000	3.000	314.000	12/31/92	6.000	600.000
	2435	3.4	25.000	12,251.000	25.000	12,251.000	12/31/92	50.000	25,000.000
	2449	3.4	0.300	212.000	0.300	212.000	12/31/92	0.600	424.000
	2450	3.4	3.000	3,444.000	3.000	3,444.000	12/31/92	2.500	3,050.000
	2451	3.4	0.200	180.000	0.200	180.000	12/31/92	0.100	100.000
	2424	3.4	1.000	221.000	1.000	221.000	12/31/92	2.000	442.000
	2404	3.1.1	4.000	4,733.000	4.000	4,733.000	12/31/92	9.000	9,500.000
Homogenous Solids	2410	3.1.1	4.000	4,500.000	4.000	4,500.000	12/31/92	8.000	9,000.000
	2454	3.1.1	0.300	346.000	0.300	346.000	12/31/92	0.200	200.000
Homogenous Solids (<90%)	2453	3.4	30.000	38,702.000	30.000	38,702.000	12/31/92	70.000	77,000.000
Liquid Mercury	2452	3.3.1	0.010	9.000	0.010	9.000	12/31/92	0.001	1.000
MLLW Ch, Aqueous Liquid, Toxic Organics & Metals w/(Mercury)/Acidic Neutral, & Basic Aqueous Liquids	2403	3.1.1	25.000	24,800.000	25.000	24,800.000	12/31/92	50.000	49,600.000
MIW CH; Inorganic sludges/Particulates, Toxic Organics & Metals w/o Mercury/Homogenous Solids	2401	3.1.1	38.000	38,615.000	38.000	38,615.000	12/31/92	77.000	77,000.000
Organic Liquids (10%, TOC<90%)	2408	3.2.1	10.000	9,848.000	10.000	9,848.000	12/31/92	20.000	20,000.000
Organic Liquids (10%<TOC<90%)	2409	3.2.1	50.000	46,268.000	50.000	46,268.000	12/31/92	100.000	93,000.000

Table 8.1 (Part 1 of 3)
Summary of Potential Mixed Waste Treatment Needs and Options at LLNL

Treatability Groups	Waste Stream(s)		Inventory as of December 1992		Current Inventory		Current Inv Date	Projected Generation (1983-1997)	
	ID #	CSTP Chap	m3	kg	m3	kg		m3	kg
Organic Liquids (TOC 90%)	2427	3.2.1	6.000	5,877.000	6.000	5,877.000	12/31/92	12.000	12,000.000
Organic Liquids (TOC>90%)	2433	3.2.1	1.800	1,083.000	1.800	1,083.000	12/31/92	2.700	2,200.000
Organic Liquids (TOC>90%) & Debris (50-90%)	2400	3.2.1	3.000	1,409.000	3.000	1,409.000	12/31/92	6.000	3,000.000
Reactive Metals	2412	3.3.1	0.500	550.000	0.500	550.000	12/31/92	1,000.000	1,100.000

Table 8.1 (Part 2 of 3)
Summary of Potential Mixed Waste Treatment Needs and Options at LLNL

Waste Stream ID	Option Number	Treatment Type	Site	Treatment Option Facility Name	System Name	System	System Status
2444							
2446							
2448							
2402	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2405	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2407	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2419	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2424	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2430	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2435	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2449	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2450	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	NA	In use for mixed waste

Table 8.1 (Part 2 of 3)
Summary of Potential Mixed Waste Treatment Needs and Options at LLNL

Waste Stream ID	Option Number	Treatment Type	Site	Treatment Option Facility Name	System Name	System Status
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		Planned but unapproved
2451	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		Planned but unapproved
2404	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		Planned but unapproved
2410	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		Planned but unapproved
2454	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		Planned but unapproved
2453	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	In use for mixed waste
	2	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		Planned but unapproved
2452	1	Mercury separation	LLNL	LLNL waste treatment facilities		Planned but unapproved
2403	1	Wastewater treatment for organics (aqueous liquids)	LLNL	LLNL waste treatment facilities	Area 514 wastewater treatment facility	In use for mixed waste
	2	Wastewater treatment for metals removal (aqueous liquids)	LLNL	LLNL waste treatment facilities	Area 514 wastewater treatment facility	In use for mixed waste
	3	Neutralization	LLNL	LLNL waste treatment facilities	Area 514 wastewater treatment facility	In use for mixed waste
2401	1	Stabilization	LLNL	LLNL waste treatment facilities	Building 513 Solidification Facility	In use for mixed waste
2408	1	Organic destruction	LLNL	LLNL waste treatment facilities		Planned but unapproved

Table 8.1 (Part 2 of 3)
Summary of Potential Mixed Waste Treatment Needs and Options at LLNL

Waste Stream ID#	Option Number	Treatment Type	Site	Treatment Option Facility Name	System Name	System	System Status
	2	Decontamination	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2409	1	Organic destruction	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
	2	Decontamination	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2427	1	Organic destruction	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
	2	Decontamination	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2433	1	Organic destruction	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
	2	Decontamination	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2400	1	Organic destruction	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
	2	Decontamination	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved
2412	1	Non-LDR treatment-alternative technologies	LLNL	LLNL waste treatment facilities		NA	Planned but unapproved

Table 8.1 (Part 3 of 3)
Summary of Potential Mixed Waste Treatment Needs and Options at LLNL

Waste Stream	Quantity (kg/yr)	Regulatory Status	Regulatory Compliance
2444			
2446			
2448			
2402	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2405	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2407	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2419	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2430	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2435	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2449	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2450	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2451	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2424	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2404	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2410	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2454	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2453	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2452	1	No treatability studies have been performed	Regulatory compliance
2403	1	none	Regulatory compliance
	2	none	Regulatory compliance
	3	none	Regulatory compliance

Table 8.1 (Part 3 of 3)
Summary of Potential Mixed Waste Treatment Needs and Options at LLNL

Waste Stream	Quantity	Treatment Need	Options
2401	1	Incomplete stabilization studies	Regulatory compliance
2408	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2409	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2427	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2433	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2400	1	No treatability studies have been performed	Regulatory compliance
	2	No treatability studies have been performed	Regulatory compliance
2412	1	No treatability studies have been performed	Regulatory compliance

TABLE 8.2

Table 8.2 (Part 1 of 6)
Summary of On-site Treatment Systems at LLNL

Facility Name	Location	Operating Status	System Type	Operating Since	Waste Type	Treatment Process	Waste Stream	Debris Treatment	Capacity	Volume	Risk
LLNL Waste Treatment Facilities	Building 513 Shredding/Compaction Unit	NA	Available, but not presently in use	NA	Debris	Non-LDR Treatment	Smaller Debris	Debris Treatment	NA	60	Low
LLNL Waste Treatment Facilities	Building 513 Solidification Facility	NA	In Operation	NA	Debris, Homogeneous Solids and Sludges	Stabilization	LDR Solids	None	NA	600	Low
LLNL Waste Treatment Facilities	Area 514 Waste Water Treatment Tank Farm	NA	In Operation	NA	Aqueous Liquid with Organics and Metals	Wastewater Treatment for Organics and Metals	Sewerable Liquids and Stabilized Solids	None	NA	600	Low
LLNL Waste Treatment Facilities	Area 514 Waste Water Filtration Facility	NA	In Operation	NA	Aqueous Liquid with Organics and Metals	Wastewater Treatment for Organics and Metals	Sewerable Liquids and Stabilized Solids	None	NA	600	Low
LLNL Waste Treatment Facilities	Area 514-1 Carbon Adsorption Unit	NA	Planned and Approved	1994	Off-Gas Treatment	Gas from Sparging Operations	Contaminated Carbon Units	Activated Carbon Regeneration	190K	0.6	Medium
LLNL Waste Treatment Facilities	Area 514-1 Portable Blending Unit	NA	Planned and Approved	1994	Aqueous Liquid with Organics and Metals	Wastewater Treatment for Organics and Metals	Sewerable Liquids and Stabilized Solids	None	215K	60	Medium
LLNL Waste Treatment Facilities	Area 514-1 Tank Blending Unit	NA	Planned and Approved	1994	Aqueous Liquid with Organics and Metals	Wastewater Treatment for Organics and Metals	Sewerable Liquids and Stabilized Solids	None	206K	60	Medium
LLNL Waste Treatment Facilities	Area 514-1 Centrifugation Unit	NA	Planned and Approved	1994	Aqueous Liquid with Organics and Metals	Wastewater Treatment for Organics and Metals	Sewerable Liquids and Stabilized Solids	None	240K	20	Medium
LLNL Waste Treatment Facilities	Area 514-1 Cold Vapor Evaporation Unit	NA	Planned and Approved	1994	Aqueous Liquid with Organics and Metals	Wastewater Treatment for Organics and Metals	Sewerable Liquids and Stabilized Solids	None	486K	20	Medium

Table 8.2 (Part 1 of 6)
Summary of On-site Treatment Systems at LLNL

Facility Name	System Name	Status	When Available	When Planned	Waste Type	Treatment Type	Waste Volume (Gallons)	Treatment Method	Capacity (Gallons)	Volume (Gallons)	Priority
LLNL Waste Treatment Facilities	Building 612 Size Reduction Unit	NA	Being moved, available 1994	NA	Large Equipment	Non-LDR Treatment	Debris	Debris Treatment	NA	20	Low
LLNL Waste Treatment Facilities	Microfiltration Unit	NA	Planned and Approved	1994	Organic Liquids	Decontamination	Decontaminated Liquids and Stabilized Solids	None	184K	600	Medium
LLNL Waste Treatment Facilities	Water Reaction Unit	NA	Planned	1995	Reactive Metals	Deactivation	Contaminated Liquids and Hydrogen Gas	Stabilization and Organic Destruction	134K	600	High
LLNL Waste Treatment Facilities	Hydrogen Desorption Unit	NA	Planned	1995	Reactive Metal Hydrides	Deactivation	Reactive Metals and Hydrogen Gas	Shipment of Valuable Reactive Metals and Combustion of Hydrogen Gas	145K	600	High
LLNL Waste Treatment Facilities	Hydrogen Burn Unit	NA	Planned	1995	Reactive Metal Hydrides	Organic Destruction	Water	Stabilization	145K	0.6	High
LLNL Waste Treatment Facilities	Mercury Separation/Amalgamation Unit	NA	Planned	1995	Liquid Mercury	Mercury Separation	Decontaminated Mercury and Contaminated Residue	Stabilization	240K	600	High
LLNL Waste Treatment Facilities	Distillation Unit	NA	Planned	1995	Organic and Aqueous Liquids	Decontamination	Decontaminated Liquids and Solid Residue	Liquid Disposal and Stabilization of Solids	275K	600	High
LLNL Waste Treatment Facilities	Liquid Organic Destruction Unit (Catalytic Oxidation)	NA	Planned	1995	Liquid Organics	Organic Destruction	Carbon Dioxide and Water	None	530K	600	High
LLNL Waste Treatment Facilities	D-38 Bleaching Unit	NA	Planned	1995	D-38 Chips	Deactivation	Uranium Oxide	Storage	130K	600	High
LLNL Waste Treatment Facilities	Debris Screening Unit	NA	Planned	1995	Debris	Non-LDR Treatment	Debris	Debris Treatment	180K	60	High

Table 8.2 (Part 1 of 6)
Summary of On-site Treatment Systems at LLNL

Facility Name	System Name	Status	Planned Start	Planned End	Waste Type	Treatment Type	Waste Volume (Yr)	Treatment Volume (Yr)	Cost (\$/Yr)	Capacity (Yr)	Block Signature
LLNL Waste Treatment Facilities	Debris Shredder	NA	Planned	1995	Debris	Non-LDR Treatment	Debris	Debris Treatment	270K	60	High
LLNL Waste Treatment Facilities	Debris Washer	NA	Planned	1995	Debris	Decontamination	Debris and Contaminated Water	Debris and Aqueous Treatment	195K	60	High
LLNL Waste Treatment Facilities	Debris Thermal Desorber	NA	Planned	1995	Debris	Decontamination	Debris and Contaminated Activated Carbon Absorber	Debris and Carbon Adsorber Treatment	270K	60	High
LLNL Waste Treatment Facilities	Activated Carbon Regenerator	NA	Planned	1995	Activated Carbon from Off-Gas Treatment	Non-LDR Treatment	Activated Carbon and Combustable Off-Gas	None	220K	60	High
LLNL Waste Treatment Facilities	Filtration	NA	Planned	1995	Aqueous and Organic Liquids	Decontamination	Decontaminated Liquids and Stabilized Solids	Organic destruction	246K	60	High
LLNL Waste Treatment Facilities	Size Reduction Unit	NA	Planned	1995	Debris	Non-LDR Treatment	Debris	Debris Treatment	140K	600	High

Table 8.2 (Part 2 of 6)
Summary of On-site Treatment Systems at LLNL

System Name	Max Flow (gpm)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)
System Name	Max Flow (gpm)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)	Max Flow (MGD)
Building 513 Shredding/Compaction Unit	633	6.33E+05	633	6.33E+05	50	50000	11	11000	50	50000	11	11000	11000
Building 513 Solidification Facility	1300	1.30E+06	1300	1.30E+06	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93
Area 514 Waste Water Treatment Tank Farm	6870	6.90E+06	6870	6.90E+06	170	170000	170	170000	170	170000	170	170000	170000
Area 514 Waste Water Filtration Facility	3420	3.40E+06	3420	3.40E+06	170	170000	170	170000	170	170000	170	170000	170000
Area 514-1 Carbon Adsorption Unit	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined	Not Defined
Area 514-1 Portable Blending Unit	150000	1.50E+08	150000	1.50E+08	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed
Area 514-1 Tank Blending Unit	15000	1.50E+07	15000	1.50E+07	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed
Area 514-1 Centrifugation Unit	10000	1.00E+07	10000	1.00E+07	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed
Area 514-1 Cold Vapor Evaporation Unit	4000	4.00E+06	4000	4.00E+06	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed	NA, To be Installed
Building 612 Size Reduction Unit	115	1.20E+06	115	1.20E+06	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93	NA, Initiated 10/93

Table 8.2 (Part 2 of 6)
Summary of On-site Treatment Systems at LLNL

System Name	Max. Tech. Capacity All Wastes		Max. Tech. Capacity Mixed Wastes		Norm. Op. Capacity All Wastes		Norm. Op. Capacity Mixed Wastes		Utilized Capacity All Wastes		Utilized Capacity Mixed Wastes	
	m ³ /yr	kg/yr	m ³ /yr	kg/yr	m ³ /yr	kg/yr	m ³ /yr	kg/yr	m ³ /yr	kg/yr	m ³ /yr	kg/yr
Microfiltration Unit	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Water Reaction Unit	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Hydrogen Desorption Unit	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Hydrogen Burn Unit	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Mercury Separation/Amalgamation Unit	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Distillation Unit	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Liquid Organic Destruction Unit (Catalytic Oxidation)	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
D-38 Bleaching Unit	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Debris Screening Unit	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Debris Shredder	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Debris Washer	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Debris Thermal Desorber	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined
Activated Carbon Regenerator	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined	Not defined

Table 8.2 (Part 3 of 6)
Summary of On-site Treatment Systems at LLNL

System Name	Location	Possible Effects of Existing and Planned Capacity/Availability	Global Impact	Notes
Area 514 Waste Water Treatment Tank Farm	None Planned	NA	NA	NA
Area 514 Waste Water Filtration Facility	None Planned	NA	NA	NA
Area 514-1 Carbon Adsorption Unit	None Planned	NA	NA	NA
Area 514-1 Portable Blending Unit	None Planned	NA	NA	NA
Area 514-1 Tank Blending Unit	None Planned	NA	NA	NA
Area 514-1 Centrifugation Unit	None Planned	NA	NA	NA
Area 514-1 Cold Vapor Evaporation Unit	None Planned	NA	NA	NA
Building 612 Size Reduction Unit	None Planned	NA	NA	NA

Table 8.2 (Part 4 of 6)
Summary of On-site Treatment Systems at LLNL
Technical Limitations

System Name	Radiation		Matrix/Physical		Contaminant Limits		Other Technical
	TRU Alpha	Beta gamma	Property	Limit	Name	Max Conc.	
Building 513 Shredding/Compaction Unit	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Building 513 Solidification Facility	Not Determined	Not Determined	Debris & Sludge	Not Determined	Not Determined	Not Determined	Not Determined
Area 514 Waste Water Treatment Tank Farm	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Area 514 Waste Water Filtration Facility	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Area 514-1 Carbon Adsorption Unit	Not Determined	Not Determined	Exhaust Gases	Not Determined	Not Determined	Not Determined	Not Determined
Area 514-1 Portable Blending Unit	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Area 514-1 Tank Blending Unit	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Area 514-1 Centrifugation Unit	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined

Table 8.2 (Part 4 of 6)
Summary of On-site Treatment Systems at LLNL
Technical Limitations

System Name	Radiation		Matrix/Physical		Contaminant Limits		Other Technical
	TRU Alpha	Beta-gamma	Property	Limit	Name	Max. Conc.	
Area 514-1 Cold Vapor Evaporation Unit	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Building 612 Size Reduction Unit	Not Determined	Not Determined	Equipment	Not Determined	Not Determined	Not Determined	Not Determined
Microfiltration Unit	Not Determined	Not Determined	Liquid Organics and Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Water Reaction Unit	Not Determined	Not Determined	Metal Hydrides	Not Determined	Not Determined	Not Determined	Not Determined
Hydrogen Desorption Unit	Not Determined	Not Determined	Metal Hydrides	Not Determined	Not Determined	Not Determined	Not Determined
Hydrogen Burn Unit	Not Determined	Not Determined	Hydrogen	Not Determined	Not Determined	Not Determined	Not Determined
Mercury Separation/A malgamation Unit	Not Determined	Not Determined	Mercury	Not Determined	Not Determined	Not Determined	Not Determined
Distillation Unit	Not Determined	Not Determined	Liquid Organics and Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined

Table 8.2 (Part 4 of 6)
Summary of On-site Treatment Systems at LLNL
Technical Limitations

System Name	Radiation		Matrix/Physical		Contaminant Limits		Other Technical
	TRU/Alpha	Beta-gamma	Property	Limit	Name	Max. Conc.	
Liquid Organic Destruction Unit (Catalytic Oxidation)	Not Determined	Not Determined	Liquid Organics	Not Determined	Not Determined	Not Determined	Not Determined
D-38 Bleaching Unit	Not Determined	Not Determined	Uranium Chips	Not Determined	Not Determined	Not Determined	Not Determined
Debris Screening Unit	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Debris Shredder	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Debris Washer	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Debris Thermal Desorber	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Activated Carbon Regenerator	Not Determined	Not Determined	Activated Carbon	Not Determined	Not Determined	Not Determined	Not Determined
Filtration	Not Determined	Not Determined	Liquid Organics and Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined

Table 8.2 (Part 5 of 6)
Summary of On-site Treatment Systems at LLNL
Non-technical Limitations

System Name	Radiation		Matrix/Physical		Contaminant Limits		Other Non-technical
	TFRU/Alpha	Beta/gamma	Property	Limit	Name	Max. Conc.	
Building 513 Shredding/Compaction Unit	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Building 513 Solidification Facility	Not Determined	Not Determined	Debris & Sludge	Not Determined	Not Determined	Not Determined	Not Determined
Area 514 Waste Water Treatment Tank Farm	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Area 514 Waste Water Filtration Facility	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Area 514-1 Carbon Adsorption Unit	Not Determined	Not Determined	Exhaust Gases	Not Determined	Not Determined	Not Determined	Not Determined
Area 514-1 Portable Blending Unit	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Area 514-1 Tank Blending Unit	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Area 514-1 Centrifugation Unit	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined

Table 8.2 (part 5 of 6)
Summary of On-site Treatment Systems at LLNL
Non-technical Limitations

System Name	Radiation		Matrix/Physical		Contaminant Limits		Other Non-technical
	TRU Alpha	Beta-gamma	Property	Limit	Name	Max. Conc.	
Area 514-1 Cold Vapor Evaporation Unit	Not Determined	Not Determined	Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Building 612 Size Reduction Unit	Not Determined	Not Determined	Equipment	Not Determined	Not Determined	Not Determined	Not Determined
Microfiltration Unit	Not Determined	Not Determined	Liquid Organics and Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined
Water Reaction Unit	Not Determined	Not Determined	Metal Hydrides	Not Determined	Not Determined	Not Determined	Not Determined
Hydrogen Desorption Unit	Not Determined	Not Determined	Metal Hydrides	Not Determined	Not Determined	Not Determined	Not Determined
Hydrogen Burn Unit	Not Determined	Not Determined	Hydrogen	Not Determined	Not Determined	Not Determined	Not Determined
Mercury Separation/Amalgamation Unit	Not Determined	Not Determined	Mercury	Not Determined	Not Determined	Not Determined	Not Determined
Distillation Unit	Not Determined	Not Determined	Liquid Organics and Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined

Table 8.2 (Part 5 of 6)
Summary of On-site Treatment Systems at LLNL
Non-technical Limitations

System Name	Radiation		Material/Physical		Contaminant Limits		
	TRU Alpha	Beta gamma	Property	Limit	Name	Max Conc.	Other Non-technical
Liquid Organic Destruction Unit (Catalytic Oxidation)	Not Determined	Not Determined	Liquid Organics	Not Determined	Not Determined	Not Determined	Not Determined
D-38 Bleaching Unit	Not Determined	Not Determined	Uranium Chips	Not Determined	Not Determined	Not Determined	Not Determined
Debris Screening Unit	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Debris Shredder	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Debris Washer	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Debris Thermal Desorber	Not Determined	Not Determined	Debris	Not Determined	Not Determined	Not Determined	Not Determined
Activated Carbon Regenerator	Not Determined	Not Determined	Activated Carbon	Not Determined	Not Determined	Not Determined	Not Determined
Filtration	Not Determined	Not Determined	Liquid Organics and Aqueous with Organics and Metals	Not Determined	Not Determined	Not Determined	Not Determined

Table 8.2 (Part 6 of 6)
Summary of On-site Treatment Systems at LLNL

Building 513 Shredding/Compaction Unit	Waste stream changes require process modifications.
Building 513 Solidification Facility	Waste stream changes require process modifications.
Area 514 Waste Water Treatment Tank Farm	Waste stream changes require process modifications.
Area 514 Waste Water Filtration Facility	Waste stream changes require process modifications.
Area 514-1 Carbon Adsorption Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Area 514-1 Portable Blending Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Area 514-1 Tank Blending Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Area 514-1 Centrifugation Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Area 514-1 Cold Vapor Evaporation Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Building 612 Size Reduction Unit	Waste stream changes require process modifications.
Microfiltration Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Water Reaction Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Hydrogen Desorption Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Hydrogen Burn Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Mercury Separation/Amalgamation Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Distillation Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Liquid Organic Destruction Unit (Catalytic Oxidation)	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
D-38 Bleaching Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Debris Screening Unit	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.

Table 8.2 (Part 6 of 6)
Summary of On-site Treatment Systems at LLNL

System Name	
Debris Shredder	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Debris Washer	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Debris Thermal Desorber	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Activated Carbon Regenerator	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.
Filtration	Treatability studies are needed and regulatory compliance requirements must be identified and achieved.

References

Footnotes:

- 1 Jim Fannon (301) 601 - 1402
- 2 Memorandum from Marilyn Stone to the DOE field office representatives, "Annotated Outline and Cover Note for Conceptual Site Treatment Plan", dated June 3, 1993, requires sorting or categorization by treatability group. The treatability group referenced in the Mixed Waste Inventory Report is different for every waste stream LLNL can treat with existing capacity.
- 3 "Interim Mixed Waste Inventory Report: Waste Streams, Treatment Capacities and Technologies" compiled by LANL, April, 93. The data used for LLNL waste streams was compiled from operating records from December 31, 1992.
- 4 The reference to these new Treatability Groups comes from an informal note from DOE (Lydia Chang) on July 14, 1993. The subject was "DOE Waste Treatability Group Guidance".
- 5 California Assessment Manual - Waste Extraction Tests, a California hazardous waste criteria similar in principle to the federal TCLP.
- 6 Other metals are handled slightly differently. For example, chrome may need to be reduced prior to precipitation, other metals may filter out directly. Reactives such as cyanide may be oxidized as well prior to treatment of metals. All these activities occur in the CSTR.
- 7 This equipment was specified and or designed by the Environmental Process Engineering Group of Hazardous Waste Management Division of LLNL. Performance based engineering specification and design reviews were evaluated and used to provide a basis for selection.
- 8 Through design reviews, informal discussions with treatment operators, regulators, and LLNL compliance personnel.
- 9 Many back end detectors may be needed depending on constituents such as electron capture, thermogravimetric, mass spectrometry, and photo and flame ionization.
- 10 Debris Rule see Federal Register '93.
- 11 "Waste Management Facilities Cost Information Report" developed by Fred Feizollahi and David Shrophire of EG&G for DOE under contract DE-AC07-761D01570, October 1992.
- 12 Environmental Report for 1991, Lawrence Livermore Laboratory, Publication Number UCRL-50027-91
- 13 Diversified Scientific Services Incorporated (DSSI) is the only NRC Licensed, RCRA Permitted (both through state authority) Fuel Substitution and Incineration facility in the country. Reference "Industrial and Hazardous Waste Management Firms" published by Environmental Information LTD, and Commerce Business Daily Notice placed for market survey purposes received only one response (from DSSI).
- 14 Memorandum Correspondence with Larry Himbree of DSSI, July 26, 1993.
- 15 Generating IWMIR numbers 2400, 2408, 2409, 2427, 2433 at projected rates operating 1000 hours per year at a scaled incinerator facility (no front or back end handling).
- 16 "Interim Mixed Waste Inventory Report: Waste Streams, Treatment Capacities and Technologies" compiled by LANL, April, 93. The data used for LLNL waste streams was compiled from operating records from December 31, 1992.

References (continue)

Other Documents and Texts:

- The Environmental Protection Department/Hazardous Waste Management "Facility Safety Procedure Building 612" - LLNL internal documentation 1989
- James M. Montgomery, "Water Treatment Principles and Design", 1985 - Wiley & sons
- The Environmental Protection Department/Hazardous Waste Management "Hazardous Wastes Requisitions" - LLNL internal documentation 1989
- C.H. Grandfield, "Guidelines for Discharge to the Sanitary-Sewer System" - LLNL internal documentation 1989
- The Hazards Control Department "Health & Safety Manual", LLNL internal documentation 1991
- Don Green, editor, "CHEMICAL ENGINEERS' HANDBOOK" sixth edition, 1984 - McGraw-Hill, Inc.
- Josephine W. Boyd et. al., "OPERATION OF WASTEWATER TREATMENT PLANTS, Volume IV" first edition 1986 - Foundation of California State University
- Alan Foust, et. al., "PRINCIPLES OF UNIT OPERATIONS" second edition, 1979 - Wiley & sons
- G. Weiss, editor, "HAZARDOUS CHEMICALS DATA BOOK" second edition, 1986 - Noyes
- D. J. Derenzo, editor, "Solvents Safety Handbook" 1986 - Noyes
- Ray E. Boltz, George L. Tuve, editors, "Handbook of Tables for APPLIED ENGINEERING SCIENCE" second edition, 1976 - CRC
- Robert C. Weast, "CRC Handbook of Chemistry and Physics" sixty second edition, 1982 - CRC
- Lyman et. al., editor, "Handbook of CHEMICAL PROPERTY ESTIMATION METHODS" 1981 - McGraw Hill
- Robert C. Reid et. al., "THE PROPERTIES OF GASES & LIQUIDS" fourth edition, 1986 - Mc Graw Hill
- U.S. Environmental Protection Agency, 40 CODE OF FEDERAL REGULATIONS PART 122, PART 268, AND PART 403 - Associated sections of the "Federal Register" 1991
- U.S. Environmental Protection Agency, "Guidance Manual for the Use of Production-Based Standards and the Combined Waste Formula" - Permits Division and Industrial Technology Division, Washington, D. C. 1985
- DOE ORDER 5480.1B "ENVIRONMENT, SAFETY, AND HEALTH PROGRAM FOR THE DEPARTMENT OF ENERGY OPERATIONS" 1986
- DOE ORDER 5440.1C, "IMPLEMENTATION OF THE NATIONAL ENVIRONMENTAL POLICY ACT" 1985
- C. M. Kielusiak (SAIC), C. E. , "Guidelines for Complying with the National Environmental Policy Act at Lawrence National Laboratory" 1990 - LLNL internal documentation
- U.S. Environmental Protection Agency, 40 CODE OF FEDERAL REGULATIONS PARTS 1500 through 1508, 1986
- DOE ORDER 5480.2 "HAZARDOUS AND RADIOACTIVE MIXED WASTE MANAGEMENT" 1984
- DOE ORDER 5480.4 "ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION STANDARDS" 1989
- DOE ORDER 5400.3 "HAZARDOUS AND RADIOACTIVE MIXED WASTE PROGRAM" 1984
- DOE ORDER 5400.5 "RADIATION PROTECTION OF THE PUBLIC AND THE ENVIRONMENT" 1990
- DOE ORDER 5820.2A "RADIOACTIVE WASTE MANAGEMENT" 1988
- DOE ORDER 5480.14 "COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY PROGRAM" 1984

APPENDIX 1.1

SEE AS APPENDIX A

APPENDIX A

**SITES AT WHICH DOE GENERATES OR STORES MIXED WASTE
(OR MAY GENERATE WITHIN THE NEXT 5 YEARS),
PREPARING CONCEPTUAL SITE TREATMENT PLANS**

APPENDIX A

Sites at Which DOE Generates or Stores Mixed Waste (or May Generate within the Next 5 Years) Preparing Conceptual Site Treatment Plans		
Facility	State	Agency to Receive Plan (EPA/State)
Energy Technology Engineering Center	California	State
General Atomics		
** General Electric Vallecitos		
Lawrence Livermore National Laboratory		
Lawrence Berkeley Laboratory		
Laboratory For Energy-Related Health Research		
Mare Island Naval Shipyard		
Sandia National Laboratory - California		
Grand Junction Project Office	Colorado	State
Rocky Flats Plant		
** Knolls Atomic Power Laboratory, Windsor	Connecticut	State
Pinellas Plant	Florida	State
Pearl Harbor Naval Shipyard	Hawaii	EPA
Argonne National Laboratory - West	Idaho	State
Idaho National Engineering Laboratory		
Ames Laboratory	Iowa	EPA
Argonne National Laboratory - East	Illinois	State
** Site A/Plot M, Palos Forest Preserve		
Paducah Gaseous Diffusion Plant	Kentucky	State
Portsmouth Naval Shipyard	Maine	EPA
Kansas City Plant	Missouri	State
Weldon Spring Site Remedial Action Project		
University of Missouri		
Nevada Test Site	Nevada	State
Middlesex Sampling Plant	New Jersey	EPA
** Princeton Plasma Physics Laboratory		

Sites at Which DOE Generates or Stores Mixed Waste (or May Generate within the Next 5 Years) Preparing Conceptual Site Treatment Plans		
Facility	State	Agency to Receive Plan (EPA/State)
Inhalation Toxicology Research Institute	New Mexico	State
Los Alamos National Laboratory		
Sandia National Laboratory - New Mexico		
Brookhaven National Laboratory	New York	State
Colonie Interim Storage Site		
Knolls Atomic Power Laboratory, Kesselring		
Knolls Atomic Power Laboratory, Schenectady		
West Valley Demonstration Project		
** Battelle Columbus Laboratories Decommissioning Project	Ohio	State
Fernald Environmental Management Project		
Mound Plant		
Portsmouth Gaseous Diffusion Plant		
RMI Titanium Inc.		
Bettis Atomic Power Laboratory	Pennsylvania	EPA
Charleston Naval Shipyard	South Carolina	State
Savannah River Site		
K-25 Site, Oak Ridge Reservation	Tennessee	State
Oak Ridge National Laboratory, Oak Ridge Reservation		
Y-12 Plant, Oak Ridge Reservation		
Pantex Plant	Texas	State
** Norfolk Naval Shipyard	Virginia	EPA
Puget Sound Naval Shipyard	Washington	State

Notes:

** Denotes a site that is not currently generating or storing mixed waste but may generate or store mixed waste within the next five years.

The Hanford Site in the State of Washington, which currently stores and generates mixed waste, has an agreement that includes the State covering treatment of mixed waste and therefore is not required to prepare a Site Treatment Plan.

The Waste Isolation Pilot Plant (WIPP) in New Mexico, identified in the Interim Inventory Report as a future generator of mixed waste, is not preparing a Conceptual Site Treatment Plan because mixed waste to be managed at WIPP will not be subject to LDR treatment requirements since WIPP is subject to a RCRA No Migration variance.

Charleston Naval Shipyard in South Carolina, identified as a future generator in the Interim Inventory Report, has subsequently generated mixed waste.

APPENDIX 1.2

SEE AS APPENDIX B

APPENDIX B

Candidate Mixed Waste Treatment System Information Sheets

Introduction

One of DOE's key objectives in the preparation of the Conceptual Site Treatment Plans (CSTPs), was to identify potential treatment options for a site's mixed waste. Options for both on-site and off-site treatment were to be identified. During development of the CSTPs it became clear that DOE's Field Offices had limited information about potential treatment options at other DOE sites. As a result, information sheets for candidate mixed waste treatment systems, (originally referred to as "Table A"), were developed as an information source that provides linkages between the standard waste treatability groups in the Interim Mixed Waste Inventory Report and treatment systems at potential treatment facilities. The primary purpose of these treatment system information sheets are to provide DOE Field Offices with a tool to assist in the preliminary identification of off-site treatment facilities for its mixed waste. Using the information sheets, waste streams could be matched to potential treatment facilities based solely on the technical capabilities of the treatment facilities. In response to comments received at the September meeting in Albuquerque between the States and DOE, the information sheets were updated to include information on administrative and regulatory limitations relevant to treatment facilities.

Treatment Facility Status

The information sheets identify the status of the facilities. The two broad facility status categories are "existing" and "planned." Existing facilities are further divided into "existing operating" and "existing, could be used to treat mixed waste." The latter category are those facilities that have the technical capability to treat mixed waste, but either the facility is not currently operating or is not currently treating mixed waste. Facilities in this category would include those undergoing plant modification, permit or other regulatory reviews, in the process of restarting, etc.

The planned facility category encompasses a broad range of potential treatment facilities. One of the main purposes of the information sheets is to provide a tool to identify numerous preliminary treatment options for a DOE site's mixed waste. As such, the approach taken was to include as many potential treatment facilities as possible in the planned category. Any potential treatment facility for which any strategic planning or feasibility analysis has taken place could be included as a planned facility.

Planned facilities are further categorized as "approved" or "unapproved" An approved facility is one that has formally entered the DOE line item construction project process as described in DOE Order 4700.1. A schematic diagram depicting DOE's line item construction process is given in Figure B-1.

Management and approval of construction projects are carried out by "Key Decisions" (KD) The first decision is KD-0 (Approval of Mission Need).

It should be emphasized that, as used in the information sheets, the term "approved" only signifies that the facility has formally entered the DOE line item process (i.e., has received KD-0 approval); it does not connote any State or regulatory authority approval of the facility, completion of NEPA documentation, permit issuance, etc.

Unapproved facilities are those that have not formally entered DOE's construction project process (have not received KD-0 approval). Generally, some strategic planning, research and development, engineering studies, etc. have been conducted to assess the need and feasibility of these potential facilities.

A summary of the definitions of the four facility status categories is given below:

Existing Operating - System is currently (as of 10/19/93) operating and treating mixed waste.

Existing, could be used for mixed waste - Existing system not currently treating mixed waste. System may be treating other waste, or may not be operational at this time.

Planned Approved - System has reached, at a minimum, Key Decision Zero (KD-0, Approval of Mission Need). Typically, the funds for the system's conceptual or detailed design have been authorized, or the system is under construction.

Planned Unapproved - System has not reached the KD-0 approval stage, or funds for the system's conceptual design have not been authorized.

Basis of the Treatment System Information Sheets

- A separate questionnaire was completed for each candidate treatment system. Information regarding the waste matrices, radiological categories, and contaminants that could potentially be treated in each of the site's treatment systems was requested. The information sheets were subsequently modified to include information on administrative and regulatory limitations on the facility. All information collected on the questionnaires appears on the information sheets. No summarization or collating of information has occurred.
- The primary objective of the information sheets is to identify candidate facilities that might technically be able to treat wastes in a given treatability group. For facilities in the early planning stage, professional and engineering judgement were used to complete the questionnaires. The information is subject to change and refinement as more detailed data is developed regarding the technical capabilities of facilities and their ability to treat specific waste streams.

- The sections addressing administrative and technical limitations were not intended to be a detailed or comprehensive description of the system's waste acceptance criteria. These sections were intended to identify major permit restrictions and technical limitations.
- The information sheets are meant to be used only as a tool to enable preliminary matching of waste streams to potential treatment options. Some treatment facilities may not be able to treat all wastes within a treatability group identified as potentially applicable. In addition, some proposed facilities may never be constructed. More specific treatment options for a given waste stream will be selected as part of the process of developing the Draft Site Treatment Plans.

A table of definitions of terms used in the candidate treatment system information sheets can be found at the end of this appendix.

Key Decision Process Overview

Figure B - 1

**CANDIDATE MIXED WASTE
TREATMENT SYSTEM
INFORMATION SHEETS**

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Argonne National Laboratory - East
 FACILITY: Alkali Metal Reaction Booth
 SYSTEM: 00114, Alkali Metal Reaction Booth
 CONTACT: Ken Chiu 708-252-7966

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 40 pounds/hr

STATUS: Existing Could be used for mixed waste

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y N N N N Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part A App	IL EPA	04/30/82	/ /
CAA	Air Permit	IL EPA	06/19/89	05/31/94
RCRA	Part B App	IEPA/USEPA	12/20/90	/ /

OTHER INFORMATION

Design capacity = 40 pounds per hour.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

RCRA permit limits operation to 40 pds per hour. Facility has not operated for several years. The laboratory (ANL) is planning to bring this system on line in January, 1994. Facility cannot accept PCB mixed waste. The facility will initially treat back logged waste of approximately 0.60 cubic meters of alkali metals.

OTHER PERMIT LIMITATIONS & COMMENTS

The RCRA Part B permit application indicates that offsite waste will not be stored or treated at ANL-E. Therefore, the Part B permit, when issued, will prohibit acceptance of offsite waste.

TECHNOLOGY

Chemical Oxidation

MATRIX

Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Argonne National Laboratory - West	DESIGN	PERMIT
FACILITY:	Radioactive Sodium Waste Process Facility		
SYSTEM:	00545, Radioactive Sodium Waste Process Facility	MS/YR	0 0
CONTACT:	Ray Lang 708-252-2230		

— System Capacity —

ADS NUMBER: CH-1604

STATUS: Planned Unapproved

-TRU-										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	N	N	N	Y		

OTHER INFORMATION

Capacity to be determined. Would convert elemental sodium to nonhazardous sodium carbonate.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

A conceptual design report for the facility was done in 1982 and is currently being revised.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

ANL-W is required to provide treatment technology for sodium-contaminated components stored on site.

TECHNOLOGY

Chemical Oxidation

MATRIX

Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: BNFL (England) DESIGN PERMIT
 FACILITY: BNFL (England)
 SYSTEM: 00505, BNFL Deactivation M3/YR 0 0
 CONTACT: _____

_____ System Capacity _____

ADS NUMBER:

STATUS: Existing Operating Commercial

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y B N N N Y N Y

PERMIT STATUS INFORMATION
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA Export EPA / / / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Transport to England for treatment would require export permit for hazardous waste export.

TECHNOLOGY

Water Reaction

MATRIX

Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	DSSI, Oak Ridge, TN	DESIGN	PERMIT
FACILITY:	Diversified Scientific Services		
SYSTEM:	00546, Diversified Scientific Services	M3/YR	0
CONTACT:	Jack Koontz	615-376-0084	0

— System Capacity —

ADS NUMBER:

STATUS: Existing Operating Commercial

—TRU— RCRA CHARACTERISTICS —
HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
Y

OTHER INFORMATIONSYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATIONTECHNOLOGYMATRIX

AIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

Centimeter

Inches

MANUFACTURED TO AIM STANDARDS
BY APPLIED IMAGE, INC.

2 of 4

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Energy Technology Engineering Center	DESIGN	PERMIT
FACILITY:	Radioactive Materials Disposal Facility		
SYSTEM:	00117, Amalgamation Process	M3/YR	0 0
CONTACT:	B. Bassat 818-586-5556		

— System Capacity —

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 1 liter/day

STATUS: Existing Operating

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	Y	N	N	N	N		

— PERMIT STATUS INFORMATION —

			DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part A App	EPA	07/08/92	/ /

OTHER INFORMATION

Design capacity = 1 liter/day.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Has been used to amalgamate mercury. All mercury onsite has been processed.

OTHER PERMIT LIMITATIONS & COMMENTS

Permitted to treat waste generated on site only.

Permit status is uncertain with the State of California. This system is not included in the March 1989 Part A application Interim Status authority to operate. It is included in the July 1992 amendment which has not been approved and therefore is considered as a non-approved activity according to DTSC interpretation.

TECHNOLOGY

Amalgamation

MATRIX

Liquid Mercury

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Energy Technology Engineering Center	DESIGN	PERMIT
FACILITY:	Radioactive Materials Disposal Facility		
SYSTEM:	00508, Evaporation/Ion Exchange	M3/YR	345 345
CONTACT:	B. Bassat 818-586-5556		

— System Capacity —

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 250 gal/day

STATUS: Existing Could be used for mixed waste

—TRU—				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	N	N	Y	N	N	N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	EPA	04/01/89	/ /

OTHER INFORMATION

Design capacity = 250 gal/day.

Approximate annual throughput achievable = 9000 gal.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Evaporator; an approved disposal site for the mixed waste sludge resulting from the process (evaporation).
Ion exchange; needs to be reassembled.

OTHER PERMIT LIMITATIONS & COMMENTS

Permitted to treat waste generated on site only.

Permit status is uncertain with the State of California. This system was included in the March 1989 Part A application Interim Status authority to operate. It is not included in the July 1992 amendment.

TECHNOLOGY

Evaporation

MATRIX

Aqueous Liquids

Ion Exchange

Organic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Energy Technology Engineering Center	DESIGN	PERMIT
FACILITY:	Radioactive Materials Disposal Facility		
SYSTEM:	00124, Neutralization Process	M3/YR	332 332
CONTACT:	B. Bassat 818-586-5556		

— System Capacity —

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 10 gal/hour

STATUS: Existing Could be used for mixed waste

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	N	N	Y	Y		

PERMIT STATUS INFORMATION

			DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part A App	EPA	07/08/92	/ /

OTHER INFORMATION

Design capacity = 10 gal/hr.

Approximate annual throughput achievable = 1800 gal.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Approval of the treatability study.

OTHER PERMIT LIMITATIONS & COMMENTS

Permitted to treat waste generated on site only.

Permit status is uncertain with the State of California. This system is not included in the March 1989 Part A application Interim Status authority to operate. It is included in the July 1992 amendment which has not been approved and therefore is considered as a non-approved activity according to DTSC interpretation.

TECHNOLOGY

Neutralization

MATRIX

Aqueous Liquids
Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Energy Technology Engineering Center	DESIGN	PERMIT
FACILITY:	Radioactive Materials Disposal Facility		
SYSTEM:	00509, Thermal Treatment	M3/YR	1200
CONTACT:	B. Bassat		1200

818-586-5556

System Capacity

ADS NUMBER:

STATUS: Planned Unapproved

-TRU-										RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	Y	Y	N	N	N		

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part A App	EPA	07/08/92	/ /

OTHER INFORMATION

Design capacity = 800 gal/day.

Plan date of operation = FY94.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Commercially available, turn key operation. Pending approval of State of California (DTSC) for construction, operating and air permits. Expect that facility will be operational by May, 1994.

OTHER PERMIT LIMITATIONS & COMMENTS

Permitted to treat waste generated on site only.

Permit status is uncertain with the State of California. This facility is not included in the March 1989 Part A application Interim Status authority to operate. It is included in the July 1992 amendment which has not been approved and therefore is considered as a non-approved activity.

TECHNOLOGY

MATRIX

Phase Separation	Soil with <50% Debris
Soil Washing	Soils
Stabilization	Soil with <50% Debris Soils
Thermal Destruction	Soil with <50% Debris Soils
Unspecified	Liquid Mercury

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Envirocare of Utah, Clive, UT
 FACILITY: Envirocare Treatment & Disposal Facility
 SYSTEM: 00516, Treatment & Disposal Facility
 CONTACT: Sue Rice 801-532-1330

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER:

STATUS: Existing Operating Commercial

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y Y Y Y

PERMIT STATUS INFORMATION

DATE PERMIT ISSUED OR
 REGULATION PERMIT TYPE REG AGENCY APPLICATION SUBMITTED RENEWAL DATE
 RCRA Final / / / /

OTHER INFORMATION

Approximate annual throughput achievable = 45,000 tons/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Envirocare's license amendment for this treatment is pending. License issuance is scheduled for October 1993.

Envirocare also has the capability of disposing of mixed waste based on its RCRA Part B for disposal.

Treatment limitations: Envirocare will treat solid phase waste. No liquid treatment.

TECHNOLOGY

Stabilization

MATRIX

Organic Sludges/Particulates
 Inorganic Sludges/Particulates
 Cemented Solids
 Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Soil with <50% Debris
 Soils
 Reactive Metals
 Elemental Lead
 Beryllium Dust
 Calcine Solids
 Inorganic Solids
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Fernald Environmental Management Project	DESIGN	PERMIT
FACILITY:	Minimum Additive Waste Stabilization Facility		
SYSTEM:	00350, Minimum Additive Waste Stabilization Facility	M3/YR	40000
CONTACT:	Barry Ko 513-738-6786		0

—— System Capacity ——

ADS NUMBER: 49-B2

STATUS: Planned Unapproved

-TRU-										RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH			N					

OTHER INFORMATION

Information needed for this section is still being investigated and will become available as treatability studies progress towards completion.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

In July 1990, the EPA and the DOE entered into a Consent Agreement establishing milestone schedules for the completion of necessary studies to support the CERCLA clean-up process. The agreement also established schedules for implementing near-term clean-up actions while final clean-up solutions were being evaluated and selected. In September 1991, the DOE and EPA jointly signed the Amended Consent Agreement establishing revised milestones for the completion of the required studies and identifying a series of new, near-term actions for implementation by DOE. As part of the CERCLA RI/FS process, the prescribed RCRA LDR technologies will be evaluated along with other potential technologies and general response actions (institutional controls, containment, disposal). The preferred technologies will be selected for the final remedial action.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Conducting treatability study (pilot scale study).

OTHER PERMIT LIMITATIONS & COMMENTS

Facility/system being developed pursuant to CERCLA agreement - no permit required.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

1988 Consent Decree states that offsite waste cannot be treated at the FEMP without prior approval of the State of Ohio. Thus, the FEMP is planning to only treat FEMP waste streams at this time.

TECHNOLOGY

Vitrification

MATRIX

Organic Sludges/Particulates
Inorganic Sludges/Particulates
Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Calcine Solids
Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Fernald Environmental Management Project	DESIGN	PERMIT
FACILITY:	Plant 8 VOC Treatment System		
SYSTEM:	00550, Plant 8 VOC Treatment System	M3/YR	23862
CONTACT:	Barry Ko 513-738-6786		0
		— System Capacity —	

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

-TRU-	RCRA CHARACTERISTICS
HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS	IGNITABLE CORROSIVE REACTIVE
N Y N N CH	Y

OTHER INFORMATIONSYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATIONREQUIREMENTS FOR USE OF EXISTING SYSTEMS

The remedial action workplan would have to be revised and approved by USEPA; RCRA treatment permit would have to be approved by OEPA; NPDES permit may have to be changed.

OTHER PERMIT LIMITATIONS & COMMENTS

System is being operated pursuant to CERCLA agreement - no permit required.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Unit is operated as a CERCLA removal action for perched water pursuant to the Amended Consent Agreement.

The FEMP is not planning to obtain a RCRA treatment permit. The 1988 Consent Decree states that offsite waste cannot be treated at the FEMP without prior approval of the State of Ohio. Thus, the FEMP is planning to only treat FEMP waste streams at this time.

TECHNOLOGY

Carbon Adsorption

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Fernald Environmental Management Project	DESIGN	PERMIT
FACILITY:	Rotary Kiln		
SYSTEM:	00513, Rotary Kiln	M3/YR	0
CONTACT:	Barry Ko		0

513-738-6786

— System Capacity —

ADS NUMBER: 16-C3

STATUS: Existing Could be used for mixed waste

-TRU-

— RCRA CHARACTERISTICS —

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
CAA	PTO	OEPA	03/02/90	/ /

OTHER INFORMATION

Design capacity = 3,800,000 kg/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Performance testing can be done, but full operation will require approval of air pollution control permit. Will be used to dry only non-RCRA radiological residues. The rotary kiln is to be used for drying/oxidizing so material can be shipped. It is not an incinerator.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

There are no plans to treat mixed waste in this facility. RCRA permit would be required to treat mixed wastes.

OTHER PERMIT LIMITATIONS & COMMENTS

Facility does not have a permit to treat hazardous waste or mixed waste.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

1988 Consent Decree states that offsite waste cannot be treated at the FEMP without prior approval of the State of Ohio. Thus, the FEMP is planning to only treat FEMP waste streams at this time.

TECHNOLOGY

Evaporation

MATRIX

Unspecified

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Fernald Environmental Management Project	DESIGN	PERMIT
FACILITY:	Soil Washing Process Facility		
SYSTEM:	00358, Soil Washing Process Facility	M3/YR	90000
CONTACT:	Barry Ko 513-738-6786		0

—— System Capacity ——

ADS NUMBER:

STATUS: Planned Unapproved

~~-TRU-~~		~~RCRA CHARACTERISTICS~~	
HLW	LLW	TRU	ALPHA HANDLING METALS MERCURY ORGANICS
N	Y	N	N
			CH

OTHER INFORMATION

Pilot plant design capacity = 1.58×10^8 kg/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

In July 1990, the EPA and the DOE entered into a Consent Agreement establishing milestone schedules for the completion of necessary studies to support the CERCLA clean-up process. The agreement also established schedules for implementing near-term clean-up actions while final clean-up solutions were being evaluated and selected. In September 1991, the DOE and EPA jointly signed the Amended Consent Agreement establishing revised milestones for the completion of the required studies and identifying a series of new, near-term actions for implementation by DOE. As part of the CERCLA RI/FS process, the prescribed RCRA LDR technologies will be evaluated along with other potential technologies and general response actions (institutional controls, containment, disposal). The preferred technologies will be selected for the final remedial action.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Conducting treatability study (pilot scale study).

OTHER PERMIT LIMITATIONS & COMMENTS

Facility/system being developed pursuant to CERCLA agreement - no permit required.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

1988 Consent Decree states that offsite waste cannot be treated at the FEMP without prior approval of the State of Ohio. Thus, the FEMP is planning to only treat FEMP waste streams at the time.

TECHNOLOGY

Soil Washing

MATRIX

Soil with <50% Debris

Soils

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Fernald Environmental Management Project	DESIGN	PERMIT
FACILITY:	UNH Treatment Facility		
SYSTEM:	00347, UNH Treatment Facility	M3/YR	765
CONTACT:	Barry Ko		0

—— System Capacity ——

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	N	N	N	N	Y	N

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Operation of this unit has been suspended since April 1993, pending further investigation.

OTHER PERMIT LIMITATIONS & COMMENTS

Facility/system being operated pursuant to CERCLA agreement - no permit required. RCRA or NPDES permit modification may be required to treat mixed waste streams other than those specified in CERCLA workplan.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

1988 Consent Decree states that offsite waste cannot be treated at the FEMP without prior approval of the State of Ohio. Thus, the FEMP is planning to only treat specific FEMP waste streams at this time.

TECHNOLOGY

Filtration

Neutralization

Precipitation

MATRIX

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Hanford Site
 FACILITY: 242-A Evaporator
 SYSTEM: 00123, 242-A Evaporator
 CONTACT: Dale Black 509-376-8458

DESIGN PERMIT
 M3/YR 0 0

System Capacity

ADS NUMBER: 1260

PERMIT [Other UNIT of MEASURE]: 11.4 m3/hour

STATUS: Existing Could be used for mixed waste

-TRU- RCRA CHARACTERISTICS
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 Y Y Y Y RH N N N N Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	WA DOE	06/26/91	/ /
WAC246/247	Registratn	DOH	07/28/93	/ /

OTHER INFORMATION

Design capacity = 11.4 m3/hr. Restart - FY94. Tank waste only.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Expected to begin operation in FY 94 (will treat Hanford's radioactive tank wastes).

OTHER PERMIT LIMITATIONS & COMMENTS

WAC 246/247 is Radioactive Air Emission Permit, issued by Department of Health.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Required under Tri-Party Agreement Milestone M-17.

TECHNOLOGY

Evaporation

MATRIX

Organic Liquids

Aqueous Liquids

Ion Exchange

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Hanford Site
 FACILITY: 242-A/Purex Effluent Treatment Facility
 SYSTEM: 00129, Effluent Treatment Facility
 CONTACT:

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 2300

PERMIT [Other UNIT of MEASURE]: 17 m3/hour

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: 08/01/92

CONSTRUCTION COMPLETION DATE: 06/94

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N Y CH Y N Y Y Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	WA DOE	06/26/91	/ /

OTHER INFORMATION

Design capacity = 17 m3/hr. Plan date operation = FY94.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

None identified.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Under construction. Hot startup required by 10/94.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Required by TPA milestone M-17-14.

TECHNOLOGY

Drying

MATRIX

Aqueous Liquids

Evaporation

Aqueous Liquids

Filtration

Aqueous Liquids

Ion Exchange

Aqueous Liquids

Reverse Osmosis

Aqueous Liquids

UV Oxidation

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Hanford Site	DESIGN	PERMIT
FACILITY:	300 Area Waste Acid Treatment System		
SYSTEM:	00533, Chromium Reduction	M3/YR	0 1000
CONTACT:			

—— System Capacity ——

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: .03 m3/hour

STATUS: Existing Could be used for mixed waste

<u>-TRU-</u>								<u>RCRA CHARACTERISTICS</u>			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
N	Y	N	N	CH	Y	N	N	N	Y	N	

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Closure	WA DOE	06/29/90	/ /

OTHER INFORMATION

Approximate annual throughput achievable = 1,000 to 1,000,000 kg/yr. Design capacity = 0.03 m3/hr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Non-operational. Permit status is closure.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Revise RCRA closure permit application to treatment and obtain State approval.

Revise Tri-Party agreement.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Closure plan was required by TPA milestone M-20.

TECHNOLOGY

Chromium Reduction

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Hanford Site
 FACILITY: 300 Area Waste Acid Treatment System
 SYSTEM: 00534, pH Adjustment, Centrifugation and Filtration
 CONTACT:

DESIGN PERMIT

M3/YR 0 1000

System Capacity

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	N	N	Y	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Closure	WA DOE	06/29/90	/ /

OTHER INFORMATION

Approximate annual throughput achievable = 1,000,000 kg/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Non-operational. Permit status is closure. Residual waste may still remain in the centrifuge unit processes.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Revise RCRA closure permit application to treatment and obtain State approval.

Revise TPA.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Closure plan was required by TPA milestone M-20.

TECHNOLOGY

Centrifugation

MATRIX

Aqueous Liquids

Filtration

Aqueous Liquids

Neutralization

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Hanford Site	DESIGN	PERMIT
FACILITY:	303-M Oxide Facility		
SYSTEM:	00535, Calcination	M3/YR	0
CONTACT:			0

—— System Capacity ——

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 91 kg/hour

STATUS: Existing Could be used for mixed waste

-TRU-										—— RCRA CHARACTERISTICS ——		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	Y	N	N	N	N	N		

—— PERMIT STATUS INFORMATION ——

			DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	WA DOE	05/19/88	/ /

OTHER INFORMATION

Design capacity = 91 kg/hr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Non-operational. Facility was used to treat uranium and zirconium fines which resulted from the fuel fabrication process.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Obtain RCRA operating permit, currently non-operational.

TECHNOLOGY

Calcination

MATRIX

Beryllium Dust

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Hanford Site
 FACILITY: Concretion Facility
 SYSTEM: 00536, Solidification
 CONTACT:

DESIGN PERMIT

M3/YR

0

0

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: .09 m3/hour

STATUS: Existing Could be used for mixed waste

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	N	Y	Y	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Closure	WA DOE	06/21/90	/ /

OTHER INFORMATION

Design capacity = 0.09 m3/hr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Non-operational. Permit status is closure.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Revise RCRA closure permit application to treatment and obtain State approval.

Revise TPA.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Closure plan required by TPA M-20.

TECHNOLOGY

Solidification

MATRIX

Inorganic Sludges/Particulates
 Inorganic Debris
 Beryllium Dust
 Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Hanford Site
 FACILITY: Grout Treatment Facility
 SYSTEM: 00121, Grout Treatment Facility
 CONTACT: Dale Black 509-376-8458

DESIGN PERMIT

M3/YR 15000 0

System Capacity

ADS NUMBER: 1230

PERMIT [Other UNIT of MEASURE]: 4 million gal/yr

STATUS: Existing Could be used for mixed waste

— TRU — RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N RH Y N Y Y Y Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	WA DOE	07/22/92	/ /
WAC246/247	Registratn	DOH	07/28/93	/ /

OTHER INFORMATION

Design capacity = 4 million gal/yr. Restart - FY94. Likely to be terminated as a result of renegotiated TPA. Rebaseline will be performed mid FY94. Tank waste only.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

State/EPA approval; renegotiate expected changes to TPA.

OTHER PERMIT LIMITATIONS & COMMENTS

WAC 246/247 is the Radioactive Air Emission Permit.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Currently required by TPA milestone M-01. Renegotiations on TPA, currently underway, are expected to cancel operation of this facility and replace it with a second vitrification plant for low-level waste.

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Hanford Site
 FACILITY: Hanford Waste Vitrification Plant
 SYSTEM: 00126, Hanford Waste Vitrification Plant
 CONTACT: Dale Black 509-376-8458

DESIGN PERMIT

M3/YR 1200 1200

— System Capacity —

ADS NUMBER: 1240

STATUS: Planned Approved

KEY DECISION STATUS: KD-4

DATE STATUS ACHIEVED: 03/01/93

CONSTRUCTION COMPLETION DATE: 12/98

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 Y Y Y Y RH Y N Y Y Y Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	WA DOE	10/01/91	/ /
CAA	Rad.	WA DOH	03/19/93	/ /
CAA	Non. Rad.	WA DOE	/ /	/ /

OTHER INFORMATION

Plan date operation - FY99. Tank waste only.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

On hold pending renegotiation of TPA. Likely to be delayed until 2009 due to renegotiated TPA.

Rebaseline will be performed mid FY94.

OTHER PERMIT LIMITATIONS & COMMENTS

CAA permit types are Notice of Construction - Rad and Non-Rad. The Non-Rad permit has been submitted, but not approved.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Required by TPA milestone M-03, currently being renegotiated. TPA stipulates construction completion in 1998.

TECHNOLOGY

Vitrification

MATRIX

Aqueous Liquids

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Hanford Site	DESIGN	PERMIT
FACILITY:	Maintenance & Storage Facility		
SYSTEM:	00119, Maintenance & Storage Facility	M3/YR	0 J
CONTACT:	Dale Black 509-376-8458		

— System Capacity —

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 0.08 m3/hour

STATUS: Existing Could be used for mixed waste

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	Y	Y	CH	N	N	N	N	N	Y		

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	WA DOE	11/16/87	/ /
WAC246/247	Registratn	DOH	07/28/93	/ /

OTHER INFORMATION

Construction complete.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Approval of permit application. Note that facility capacity is very small.

OTHER PERMIT LIMITATIONS & COMMENTS

WAC 246/247 is the Radioactive Air Emission permit.

TECHNOLOGY

Water Reaction

MATRIX

Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Hanford Site	DESIGN	PERMIT
FACILITY:	Mixed Waste Treatment Facility		
SYSTEM:	00537, Separation, Distillation	M3/YR	20
CONTACT:			20

—— System Capacity ——

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

<u>-TRU-</u>										<u>RCRA CHARACTERISTICS</u>		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	Y	B	Y	N	Y	Y	Y	N		

OTHER INFORMATION

Construction complete.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATIONREQUIREMENTS FOR USE OF EXISTING SYSTEMS

Prepare and obtain RCRA permit approval.

OTHER PERMIT LIMITATIONS & COMMENTS

This is a pilot plant-type operation (operated by PNL).

TECHNOLOGY

Distillation

MATRIX

Aqueous Liquids

Inorganic Sludges/Particulates

Separation

Aqueous Liquids

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Hanford Site	DESIGN	PERMIT
FACILITY:	Pu Finishing Plant Water Disposal		
SYSTEM:	00538, Filtration, Ion Exchange, and Activated Charcoal	M3/YR	30000
CONTACT:	Don McBride	509-373-5698	30000

—— System Capacity ——

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

-TRU-				RCRA CHARACTERISTICS -						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
Y	N	Y	CH	Y	N	Y	N	N	N	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
WAC246/247	Registratn	DOH	07/28/93	/ /

OTHER INFORMATION

Start up - FY94.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Not permitted to treat mixed wastes.

Design is limited to pretreatment of plant effluent prior to discharge to the 216-2-20 crib.

In June, 1995, the effluent will be discharged to the 200 Area Treated Effluent Disposal Facility.

The facility can only accept trace organics and trace metals.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Permit for mixed waste treatment.

OTHER PERMIT LIMITATIONS & COMMENTS

Design is limited to pretreatment of plant effluent prior to discharge to 216-2-20 crib.

TECHNOLOGY

Carbon Adsorption

Filtration

Ion Exchange

MATRIX

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Manford Site	DESIGN	PERMIT
FACILITY:	Thermal Treatment Facility		
SYSTEM:	00532, Incineration	M3/YR	550
CONTACT:	B.G. Place		0
	509-372-1372		

—— System Capacity ——

ADS NUMBER: 2250

STATUS: Planned Unapproved

-TRU-										RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	Y	N	B	N	N	Y	Y	Y	N		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Free liquids are presently not accepted for storage at Manford.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Needed for treatment of some wastes.

Previous project accomplishments: (1) Engineering Study (Technology Assessment) completed: FY 92; (2) Hazard Classification completed: FY 93; (3) Engineering Study (Site-Specific Facility) draft completed in FY 93 but not approved; and (4) FDC draft completed in FY 93 but not approved.

Current FY 94 activities: Waste characterization of RMW; Privatization of thermal treatment; and Complete Engineering Safety Study.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

No direct tie to TPA. However, a facility such as this will be needed to treat some cleanup wastes that will be generated due to compliance with the TPA.

TECHNOLOGY

Incineration

MATRIX

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Lab Packs with Metals
Lab Packs without Metals
Explosives
Batteries (Lead Acid, Cadmium)

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Hanford Site
 FACILITY: Waste Receiving And Processing Facility
 SYSTEM: 00325, WRAP I
 CONTACT: Dale Black 509-376-8458

DESIGN PERMIT

M3/YR 1400 1400

System Capacity

ADS NUMBER: 2220

STATUS: Planned Approved

KEY DECISION STATUS: KD-2

DATE STATUS ACHIEVED: 02/01/91

CONSTRUCTION COMPLETION DATE: 12/96

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH N N N N Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B	WA DOE	10/31/91	/ /
WAC173-460	NOC	WA DOE	03/30/93	/ /
WAC246/247	NOC	DCH	03/30/93	09/07/93
NESHAPS	NOC	EPA	04/02/93	05/10/93

OTHER INFORMATION

Pretreatment only. Prepares retrieved/stored TRU and LLW for disposal. Plan date operation - FY97.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Title II Design is completed. Bid package preparation has been initiated for construction. Breaking ground/starting construction in Nov. 1993 is expected.

OTHER PERMIT LIMITATIONS & COMMENTS

WAC 173-460 is the Toxic Air Pollutants permit. WAC 246/247 is the Radioactive Air Emission permit. NESHAPS regulation is 40 CFR 61.07.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Required by TPA milestone M-18.

TECHNOLOGY

Adsorption

MATRIX

Organic Liquids
 Aqueous Liquids
 Inorganic Debris
 Heterogeneous Debris

Compaction

Organic Debris
 Inorganic Debris

Packaging

Organic Debris
 Inorganic Debris
 Heterogeneous Debris

Stabilization

Organic Liquids
 Aqueous Liquids
 Organic Debris
 Heterogeneous Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Hanford Site	DESIGN	PERMIT
FACILITY:	Waste Receiving And Processing Facility		
SYSTEM:	00326, WRAP II A & B	M3/YR	1500 1500
CONTACT:	Owen Kruger 509-372-1463		

— System Capacity —

ADS NUMBER: 2230

STATUS: Planned Approved

KEY DECISION STATUS: KD-0

DATE STATUS ACHIEVED: / /

CONSTRUCTION COMPLETION DATE: /

—TRU—				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	Y	N	B	Y	Y	Y	Y	Y	Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	WA DOE	10/31/91	/ /
CAA	NOC	WA DOE	/ /	/ /

OTHER INFORMATION

Design capacity = 1500 m3/yr LLW or 1100 m3/yr TRU

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

- a. Free liquids are not presently accepted for storage at Hanford.
- b. Cannot treat ignitable/reactives (except waste containing potassium and sodium)
- c. Cannot accept low TOC ignitable liquids.
- d. Oxidizers are generally acceptable however, large quantities of ignitables/oxidizers are not acceptable (particularly perchlorates).
- e. Reactive metals excludes highly reactive wastes.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Conceptual design work is complete for WRAP IIA. KD-1 will be obtained for WRAP IIA in December 1993.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

WRAP IIB is being evaluated in site-wide integration plan.

OTHER PERMIT LIMITATIONS & COMMENTS

The WRAP II concept has been approved by the State & EPA. However, the split into Parts A & B is not yet approved. (change request submitted).

The CAA Notice of Construction (NOC) is not yet submitted.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Required by TPA milestone M-19. The facility is required by the TPA and needed for site cleanup.

TECHNOLOGY

Grouting

MATRIX

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids
Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Lab Packs with Metals
Lab Packs without Metals

Macroencapsulation

Reactive Metals
Liquid Mercury
Elemental Lead
Beryllium Dust
Batteries (Lead Acid, Cadmium)
Calcine Solids
Inorganic Solids
Organic Solids

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Cemented Solids
Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Lab Packs with Metals
Lab Packs without Metals
Reactive Metals
Liquid Mercury
Elemental Lead
Beryllium Dust
Batteries (Lead Acid, Cadmium)
Calcine Solids
Inorganic Solids
Organic Solids

Solidification

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids
Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Lab Packs with Metals
Lab Packs without Metals
Reactive Metals
Liquid Mercury
Elemental Lead
Beryllium Dust
Batteries (Lead Acid, Cadmium)
Calcine Solids
Inorganic Solids
Organic Solids

Stabilization

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids

Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Lab Packs with Metals
Lab Packs without Metals
Reactive Metals
Liquid Mercury
Elemental Lead
Beryllium Dust
Batteries (Lead Acid, Cadmium)
Calcine Solids
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: HEPA Filter Leaching System (CPP-659)
 SYSTEM: 00238, HEPA Filter Leaching System (CPP-659) M3/YR 83 83
 CONTACT: Keith Kristofferson 208-526-9363

— System Capacity —

ADS NUMBER: 1001WN

STATUS: Existing Could be used for mixed waste

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 Y Y Y Y B Y Y Y N N N

— PERMIT STATUS INFORMATION —
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA Part B State 05/01/93 / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

"B" under Handling means Both CH and RH.

The HEPA Filter Leaching System (HFLS) must obtain a regulatory determination under the Debris Rule to allow the treated filters to be disposed of as LLW. The testing of the system will start in approximately 1/94 with the State of Idaho's regulatory determination based on the sample results by 6/94. Testing of the system will begin when the State accepts the waste analysis plan for the HFLS. Therefore, it is uncertain if the LDR treatment standards will be met by this treatment for some of the contaminants listed above.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

System testing using mixed waste. Development of analytical technologies to analyze treated waste. Determination from State concerning insoluble organic constituents. Installation of new equipment to optimize throughput and incorporate system testing input.

OTHER PERMIT LIMITATIONS & COMMENTS

Currently no air permits required. However, will be included in the Permit to Operate (PTO) for INEL. The PTO will address all air emissions at INEL. Submittal of application unknown at this time. This facility does not operate 24 hours/day, 365 days/year. Assume specific gravity of 1.0.
 $1.0 \times 60 \text{ gal/day} \times (3.785 \times 10^{-3}) \times 365 \text{ days/yr} = 82.8915 \text{ m}^3/\text{year}.$

TECHNOLOGY

Chemical Extraction

MATRIX

Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Idaho National Engineering Laboratory	DESIGN	PERMIT
FACILITY:	ICPP Decontamination Facility		
SYSTEM:	00257, Unit2: CO2 Decontamination System	M3/YR	0 0
CONTACT:	Keith Kristofferson 208-526-9363		

— System Capacity —

ADS NUMBER: 10084N

STATUS: Planned Approved

KEY DECISION STATUS: KD-0

DATE STATUS ACHIEVED: 05/01/93

CONSTRUCTION COMPLETION DATE: 09/94

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
Y	Y	N	Y	B	Y	Y	Y	N	N	N		

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	02/01/93	/ /

OTHER INFORMATION

Design and permit capacities are to be determined.

Startup - FY94.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

"B" under Handling means both CH and RH. Presently the limitations of the facility are not known until testing is complete in late FY 94. Therefore, it is not known if the system can treat debris below LDR standards in all cases.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Technology demonstration operations in progress. Facility status is based on success of demonstration operations. There are no key decisions to be made. The technology demonstration is part of the conceptual design. Based on the results of the demonstration, the design will be finalized and the equipment installed.

OTHER PERMIT LIMITATIONS & COMMENTS

Request for Interim status sent 02/93.

This currently is a demonstration project. No air permits identified for this activity at this time. RCRA Part A permit modification has been submitted which identifies this treatment unit as "ICPP-659 NWCF Decontamination Area Debris Treatment and Containment Storage Area." Until this modification is approved, debris treatment will proceed on a less than 90 day basis as allowed by 40 CFR 262.34. This request for interim status indicates a total treatment capacity for the ICPP Decon Facility of 10 m3/day. There is no break-down for individual treatments which may occur in the ICPP Decon Facility. This facility does not operate 365 days/year, 24 hours/day. Presently the limitations of the facility are not known until testing is complete in late FY 94.

TECHNOLOGY

CO2 Decontamination

MATRIX

Organic Debris
Inorganic Debris
Heterogeneous Debris
Elemental Lead
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: ICPP Decontamination Facility
 SYSTEM: 00303, Water Washing System
 CONTACT: Keith Kristofferson 208-526-9396

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER:

STATUS: Existing Operating

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS
 Y Y Y Y B Y Y Y N N N

PERMIT STATUS INFORMATION

REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR APPLICATION SUBMITTED RENEWAL DATE
 RCRA Interim State 02/01/93 / /

OTHER INFORMATION

Design and permit capacities are to be determined.

Startup - FY94.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

"B" under Handling means Both RH and CH. The limitations of the facility are not known until testing is complete in late FY 94. Therefore, it is not known if the system can treat debris below LDR standards in all cases.

OTHER PERMIT LIMITATIONS & COMMENTS

Request for Interim status sent 02/93.

No air permits identified for this activity at this time. RCRA Part A modification has been submitted which identifies this treatment unit as "ICPP-659 NWCF Decontamination Area Debris Treatment and Containment Storage Area." Until the modification is approved, debris treatment will proceed on a less than 90 day basis as allowed by 40 CFR 262.34. The request for interim status indicates a total treatment capacity for the ICPP Decon Facility of 10 m3/day. There is no break-down for individual treatments which may occur in the ICPP Decon Facility. This facility does not operate 365 days/year, 24 hours/day. The limitations of the facility are not known until testing is completed in late FY 94.

TECHNOLOGY

Water Washing

MATRIX

Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Elemental Lead
 Inorganic Solids
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Idaho National Engineering Laboratory	DESIGN	PERMIT
FACILITY:	INEL Waste Generator Treatment		
SYSTEM:	00244, INEL Generator Treatment Under 40 CFR 262.34	M3/YR	0 0
CONTACT:	Jack Depperschmidt 208-526-5053		

— System Capacity —

ADS NUMBER:

STATUS: Existing Operating

—TRU—				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	Y	CH	Y	Y	Y	Y	Y	Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	262.34	State	/ /	/ /

OTHER INFORMATION

Design capacity is developed and implemented on an as needed basis.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Generator treatment is acceptable for treatment of waste by the generator under 40 CFR 262.34 limitations. Waste from other sites is not acceptable for treatment under these plans.

OTHER PERMIT LIMITATIONS & COMMENTS

Waste cannot be accepted from offsite facilities. INEL Generator Treatments under 40 CFR 262.34 is applicable only to treatment of wastes as it is generated or accumulated prior to shipment or storage. For each individual process, a 30-day notice and waste analysis plan must be supplied to the regulator.

TECHNOLOGY

Ion Exchange

Macroencapsulation

Neutralization

Stabilization

MATRIX

Aqueous Liquids

Organic Debris
Inorganic Debris
Heterogeneous Debris
Elemental Lead

Aqueous Liquids

Aqueous Liquids
Inorganic Sludges/Particulates
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Idaho National Engineering Laboratory	DESIGN	PERMIT
FACILITY:	Idaho Waste Processing Facility		
SYSTEM:	00551, Amalgamation	M3/YR	0 0
CONTACT:	Dave Eaton 208-526-7002		

— System Capacity —

ADS NUMBER: 4302

STATUS: Planned Unapproved

—TRU—										— RCRA CHARACTERISTICS —				
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE				
N	Y	Y	Y	B	N	Y	N	N	N	N				

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B	State	01/01/99	/ /

OTHER INFORMATION

Small volumes of remote handled material may be accepted on a case by case basis.

Design and permit capacities are to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Feasibility studies.

TECHNOLOGY

Amalgamation

MATRIX

Liquid Mercury

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Idaho National Engineering Laboratory	DESIGN	PERMIT
FACILITY:	Idaho Waste Processing Facility		
SYSTEM:	00304, Debris Decontamination System	M3/YR	0 0
CONTACT:	Dave Eaton 208-526-7002		

—— System Capacity ——

ADS NUMBER: 4302

STATUS: Planned Unapproved

—TRU—								—— RCRA CHARACTERISTICS ——		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	Y	Y	B	Y	Y	Y	N	N	N

—— PERMIT STATUS INFORMATION ——				DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE	
RCRA	Part B	State	01/01/99	/ /	

OTHER INFORMATION

Small volumes of remote handled material may be accepted on a case by case basis.

Design and permit capacities are to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Feasibility studies.

TECHNOLOGY

Decontamination

MATRIX

Organic Debris
Inorganic Debris
Heterogeneous Debris
Elemental Lead

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Idaho National Engineering Laboratory	DESIGN	PERMIT
FACILITY:	Idaho Waste Processing Facility		
SYSTEM:	00335, Macroencapsulation System	M3/YR	0 0
CONTACT:	Dave Eaton 208-526-7002		

—— System Capacity ——

ADS NUMBER: 4302

STATUS: Planned Unapproved

<u>-TRU-</u>										<u>RCRA CHARACTERISTICS</u>		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	Y	Y	B	Y	Y	Y	N	N	N		

<u>PERMIT STATUS INFORMATION</u>					<u>DATE PERMIT ISSUED OR</u>	
<u>REGULATION</u>	<u>PERMIT TYPE</u>	<u>REG AGENCY</u>	<u>APPLICATION SUBMITTED</u>	<u>RENEWAL DATE</u>		
RCRA	Part B	State	01/01/99	/	/	

OTHER INFORMATION

Small volumes of remote handled material may be accepted on a case by case basis.

Design and permit capacities are to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Feasibility studies.

TECHNOLOGY

Macroencapsulation

MATRIX

Organic Debris
Inorganic Debris
Heterogeneous Debris
Elemental Lead

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Idaho Waste Processing Facility
 SYSTEM: 00504, Sizing System
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 4302

STATUS: Planned Unapproved

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y B N N N N N N

PERMIT STATUS INFORMATION
 REGULATION PERMIT TYPE REG AGENCY APPLICATION SUBMITTED RENEWAL DATE
 RCRA/TSCA Part B State 01/01/99 / /

OTHER INFORMATION

Design and permit capacities to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Feasibility studies.

TECHNOLOGY

Size Reduction

MATRIX

Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Elemental Lead

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Idaho Waste Processing Facility
 SYSTEM: 00336, Stabilization System
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 4302

STATUS: Planned Unapproved

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y B Y Y Y N N N

PERMIT STATUS INFORMATION
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR APPLICATION SUBMITTED RENEWAL DATE
 RCRA/TSCA Part B State 01/01/99 / /

OTHER INFORMATION

Small volumes of remote handled material may be accepted on a case by case basis.

Design and permit capacities are to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Feasibility studies.

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids
 Inorganic Sludges/Particulates
 Cemented Solids
 Inorganic Debris
 Heterogeneous Debris
 Soil with <50% Debris
 Soils
 Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Idaho Waste Processing Facility
 SYSTEM: 00552, Thermal Desorbtion
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

MS/YR 0 0

System Capacity

ADS NUMBER: 4302

STATUS: Planned Unapproved

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH N N Y N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B	State	01/01/99	/ /

OTHER INFORMATION

Small volumes of remote handled material may be accepted on a case by case basis.

Design and permit capacities are to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Feasibility studies.

TECHNOLOGY

Thermal Desorbtion

MATRIX

Organic Sludges/Particulates
 Organic Debris
 Heterogeneous Debris
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Idaho Waste Processing Facility
 SYSTEM: 00334, Thermal Destruction System
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 4302

STATUS: Planned Unapproved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH N N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B	State	01/01/99	/ /
TSCA	PCB	EPA	01/01/99	/ /

OTHER INFORMATION

Design and permit capacities are to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Feasibility studies.

TECHNOLOGY

Incineration

MATRIX

Organic Liquids
 Aqueous Liquids
 Organic Sludges/Particulates
 Organic Debris
 Heterogeneous Debris
 Lab Packs with Metals
 Lab Packs without Metals
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Liquid Effluent Treatment And Disposal (LET&D)
 SYSTEM: 00241, Liquid Effluent Treatment And Disposal (LET&D) M3/YR 36472 36472
 CONTACT: _____

_____ System Capacity _____

ADS NUMBER:

STATUS: Existing Operating

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH N N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B	State	05/01/93	/ /
CAA	NESHAP	EPA	03/01/91	/ /
CAA	PSD	State	10/01/93	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Treatment in LET&D in many cases will not meet LDR for some of the contaminants such as the trace quantity of organics which require specified treatment technologies.

OTHER PERMIT LIMITATIONS & COMMENTS

LET&D emissions are also included in the PSD for FPR. The capacity listed is the design capacity listed in the Part A submitted with the LET&D Part B permit application in May 1993.

$1.0 \times 26,400 \text{ gal/day} \times (3.785 \times 10^{-3} \text{ m}^3/\text{gal}) \times 365 \text{ days} = 36,472 \text{ m}^3/\text{year}$.

The annual (any consecutive 12 months) cumulative throughput of hazardous waste in the LET&D acid recycle tank shall not exceed 250 tons per year. Note: This is based on operating the two fractionators simultaneously, 24 hours/day. Usually only one fractionator is used at a time and they do not operate every day; only when sufficient feed available. Since FPR will not operate the PSD may be revised. Assume specific gravity of 1.0.

TECHNOLOGY

Chemical Fractionation

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Mixed Low-Level Waste Treatment Facility (MLLWTF)
 SYSTEM: 00324, Mixed Low-Level Waste Treatment Facility (MLLWTF) M3/YR 60 60
 CONTACT: _____

— System Capacity —

ADS NUMBER: 5-E2

STATUS: Planned Unapproved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
40CFR-H	NESHAPS	EPA	09/30/98	/ /
CAA	PTC/PSD	State	09/30/00	/ /
40CFR264	RCRA App	State	09/30/00	/ /
40CFR-R	TSCA App	EPA	09/30/00	/ /

OTHER INFORMATION

Restart of WERF is scheduled for FY94. Until the liquid feed system modification are completed, all liquids must be absorbed prior to incineration.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

The Mixed and Low Level Waste Treatment Facility (MLLWTF) has been thoroughly evaluated by completing a series of pre-conceptual activities. Waste streams have been identified, waste treatment processes have been identified using the Best Demonstrated Available Treatment (BDAT) identified in the EPA regulations. Many treatment options have been evaluated with life cycle costs calculated. Environmental activities have been initiated by submittal of an Environmental Checklist. Because the BDAT for some of the hazardous components is incineration, DOE orders require that an Environmental Impact Statement (EIS) be conducted. Preliminary siting criteria have been developed and studies have been completed with three potential sites identified as being suitable. Additional site specific parameters have been obtained to determine suitability of the identified sites. A final site selection has not been made at this time.

Funding for FY94 and FY95 has been reduced to \$0. Several competing activities including the Private Sector Participation Initiative (PSP1) and the Idaho Waste Processing Facility (a DOE-owned and -operated facility) are being evaluated. The project is on hold until these activities have proven to not be suitable. The project will be terminated if these initiatives prove fruitful.

OTHER PERMIT LIMITATIONS & COMMENTS

The permit issuance/application submission dates are the dates of the last planning activity. The project has been delayed at least two years. Consequently, these dates will be slipped based upon project restart.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

This project is not listed in the INEL 180 Day report or the Conceptual Site Treatment Plan as a preferred alternative for any of the mixed wastes at INEL.

TECHNOLOGY

Amalgamation

MATRIX

Liquid Mercury

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Idaho National Engineering Laboratory	DESIGN	PERMIT
FACILITY:	Mixed Low-Level Waste Treatment Facility (MLLWTF)		
SYSTEM:	00324, Mixed Low-Level Waste Treatment Facility (MLLWTF)	M3/YR	60
CONTACT:			60

— System Capacity —

ADS NUMBER: 5-E2

STATUS: Planned Unapproved

—TRU—				— RCRA CHARACTERISTICS —			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS
N	Y	N	N	CH	Y	Y	Y
							Y
							N
							N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
40CFR-H	NESHAPS	EPA	09/30/98	/ /
CAA	PTC/PSD	State	09/30/00	/ /
40CFR264	RCRA App	State	09/30/00	/ /
40CFR-R	TSCA App	EPA	09/30/00	/ /

OTHER INFORMATION

Restart of WERF is scheduled for FY94. Until the liquid feed system modifications are completed, all liquids must be absorbed prior to incineration.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

The Mixed and Low Level Waste Treatment Facility (MLLWTF) has been thoroughly evaluated by completing a series of pre-conceptual activities. Waste streams have been identified, waste treatment processes have been identified using the Best Demonstrated Available Treatment (BDAT) identified in the EPA regulations. Many treatment options have been evaluated with life cycle costs calculated. Environmental activities have been initiated by submittal of an Environmental Checklist. Because the BDAT for some of the hazardous components is incineration, DOE orders require that an Environmental Impact Statement (EIS) be conducted. Preliminary siting criteria have been developed and studies have been completed with three potential sites identified as being suitable. Additional site specific parameters have been obtained to determine suitability of the identified sites. A final site selection has not been made at this time.

Funding for FY94 and FY95 has been reduced to \$0. Several competing activities including the Private Sector Participation Initiative (PSPI) and the Idaho Waste Processing Facility (a DOE-owned and -operated facility) are being evaluated. The project is on hold until these activities have proven to not be suitable. The project will be terminated if these initiatives prove fruitful.

OTHER PERMIT LIMITATIONS & COMMENTS

The permit issuance/application submission dates are the dates of the last planning activity. The project has been delayed at least two years. Consequently, these dates will be slipped based upon project restart.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

This project is not listed in the INEL 180 Day report or the Conceptual Site Treatment Plan as a preferred alternative for any of the mixed wastes at INEL.

TECHNOLOGY

Chemical Precipitation

MATRIX

Organic Liquids

Aqueous Liquids

Decontamination

Organic Debris

Inorganic Debris

	Heterogeneous Debris Elemental Lead
Incineration	Organic Liquids Aqueous Liquids Organic Sludges/Particulates Organic Debris Heterogeneous Debris Lab Packs with Metals Lab Packs without Metals Organic Solids
Macroencapsulation	Organic Debris Inorganic Debris Heterogeneous Debris Elemental Lead Inorganic Solids Organic Solids
Melt Recycling	Elemental Lead
Neutralization	Organic Liquids Aqueous Liquids
Sizing	Organic Debris Inorganic Debris Heterogeneous Debris Elemental Lead Inorganic Solids Organic Solids
Stabilization	Organic Liquids Aqueous Liquids Organic Sludges/Particulates Inorganic Sludges/Particulates Cemented Solids Heterogeneous Debris Soil with <50% Debris Soils Beryllium Dust Inorganic Solids Organic Solids
Thermal Desorption	Organic Sludges/Particulates Inorganic Sludges/Particulates Cemented Solids Organic Debris Inorganic Debris Heterogeneous Debris Soil with <50% Debris Soils Inorganic Solids Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: New Waste Calcining Facility
 SYSTEM: 00240, New Waste Calcining Facility
 CONTACT: Keith Kristofferson 208-526-9363

DESIGN PERMIT

M3/YR 8620 8620

System Capacity

ADS NUMBER:

STATUS: Existing Operating

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 Y Y Y Y B N N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	State	10/01/91	/ /
CAA	NESHAP	EPA	10/01/90	/ /
CAA	PSD	State	10/01/93	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

"B" under Handling means both CH and RH.

The aqueous liquid fed to the NWCF must be acidic and the amount of sodium and potassium will not exceed 5.3 mole percent of the feed solution.

Calcination is not the specified technology for LDR High Level Waste, or the specified technology for some of the trace organics in the feed. Deactivation was remanded as LDR treatment.

OTHER PERMIT LIMITATIONS & COMMENTS

The NWCF emissions are included with the NESHAPs for the ICPP Main Stack and the PSD for FPR. Since FPR will not operate the PSD may be revised. Capacity is based upon the design capacity identified in the Part B application submitted 10/91 and a specific gravity of 1.2 for the feed to the facility. The facility does not always operate 24 hours/day, 365 days/year. 5200 gal/day x (3.785 x 10E-3 m3/gal) x 365 days/year x 1.2. Air permit requirements; current NOx emissions limits are 388 pounds in an hour and 1700 tons per year.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Consent Order for MON (Docket No. 1090-1-24-6601). Dated 04/03/93, effective date 04/03/92, between DOE and the State of Idaho and approved by EPA. Required operation of NWCF by January 1993, 6 month progress reports, and continued operation every three years until waste tank farm tanks not having adequate secondary containment are empty. NEPA injunction order modifying order of June 28, 1993, issued to DOE, effective 09/21/93. The following is ordered: DOE shall accelerate activities related to the treatment and disposal of high-level radioactive wastes stored at INEL. In support of this: (a) DOE will calcine all high-level liquid radioactive waste that does not contain sodium on or before January 1, 1998; (b) DOE will calcine or otherwise process as much sodium-bearing high-level liquid radioactive waste (sodium liquid waste) as DOE and the State of Idaho mutually agree is practicable by January 1, 1998; (c) DOE will identify a limited number of potential technologies to calcine or process sodium liquid waste on or before November 15, 1993, and thereafter evaluate and conduct tests to determine the viability of the competing technologies; (d) DOE will select a technology for calcining or processing sodium liquid waste, including a pretreatment technology (if appropriate), in conjunction with the record of decision for the EIS required by the order entered June 28, 1993; (e) DOE will select a technology for converting calcined waste into an appropriate form for disposal in conjunction with the record of decision for the EIS required by the order entered June 28, 1993; (f) DOE will construct facilities necessary to implement the technologies selected for calcining or processing sodium liquid waste and for converting calcined waste into an appropriate form for disposal in accordance with a schedule to be negotiated with the State of Idaho.

TECHNOLOGY

Calcination Pretreatment

MATRIX

Aqueous Liquids

Organic Sludges/Particulates

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Portable Water Treatment System (PWTU)
 SYSTEM: 00239, Portable Water Treatment System (PWTU)
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 187 187

System Capacity

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y N Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/90	/ /
RCRA	Part B App	State	11/01/95	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

The PWTU has RCRA interim status. An EA is currently being prepared for the unit. Upon completion of the EA, the PWTU will be available for miscellaneous aqueous mixed waste.

OTHER PERMIT LIMITATIONS & COMMENTS

Awaiting completion of Environmental Assessment.

TECHNOLOGY

Carbon Adsorption

MATRIX

Aqueous Liquids

Filtration

Aqueous Liquids

Ion Exchange

Aqueous Liquids

Neutralization

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Rad. Sodium Waste Processing Facility (RSWPF)
 SYSTEM: 00366, Rad. Sodium Waste Processing Facility (RSWPF)
 CONTACT: M. T. Wallace 208-533-7902

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 1601/1605

STATUS: Planned Unapproved

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y B Y Y Y Y Y Y

OTHER INFORMATION

Design and permit capacities are to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

FY 93 review of conceptual design is in progress. Some FY 94 funding is available to start NEPA documentation preparation. There is no further funding in place at this time.

TECHNOLOGY

Deactivation

Water Reaction

MATRIX

Reactive Metals

Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Idaho National Engineering Laboratory	DESIGN	PERMIT
FACILITY:	TAN 726-A Treatment		
SYSTEM:	00254, TAN 726-A Treatment Unit	M3/YR	126 126
CONTACT:	Dave Eaton 208-526-7002		

— System Capacity —

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

—TRU—										— RCRA CHARACTERISTICS —			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE			
N	Y	N	N	CH	Y	Y	N	N	N	N			

PERMIT STATUS INFORMATION

			DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/87	/ /

OTHER INFORMATION

Restart FY94.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

System to undergo closure in FY94.

OTHER PERMIT LIMITATIONS & COMMENTS

Scheduled to be closed under interim status in FY94.

TECHNOLOGY

Ion Exchange

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: WERF Incinerator
 SYSTEM: 00251, WERF Incinerator
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 49625 49625

System Capacity

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N Y Y N Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/85	/ /
RCRA	Part B App	State	10/30/92	/ /

OTHER INFORMATION

Restart - FY94.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Awaiting approval of Operational Readiness Review.

OTHER PERMIT LIMITATIONS & COMMENTS

The WERF Environmental Assessment limits the receipt of offsite mixed wastes to 5 m3/year.

TECHNOLOGY

Incineration

MATRIX

Organic Liquids
 Aqueous Liquids
 Organic Sludges/Particulates
 Inorganic Sludges/Particulates
 Organic Debris
 Heterogeneous Debris
 Lab Packs with Metals
 Lab Packs without Metals
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: WERF Waste Stabilization Unit
 SYSTEM: 00252, WERF Waste Stabilization Unit
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 2765 2765

System Capacity

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

— TRU — RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/85	/ /
RCRA	Part B App	State	10/30/92	/ /

OTHER INFORMATION

Restart - FY94.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Awaiting approval of Operational Readiness Review.

OTHER PERMIT LIMITATIONS & COMMENTS

The WERF Environmental Assessment limits the receipt of offsite mixed waste to 5 m3/year.

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids
 Inorganic Sludges/Particulates
 Cemented Solids
 Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Soil with <50% Debris
 Soils
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Waste Characterization Facility
 SYSTEM: 00259, Waste Characterization Facility
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER:

STATUS: Planned Approved

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH Y Y Y Y Y Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/92	/ /
RCRA	Part B App	State	02/28/94	/ /

OTHER INFORMATION

Design capacity - Stabilization - 0.33 gal/hour; Amalgamation - 0.55 gal/hour; Neutralization - 40 gal/day; Absorption - 100 gal/day.

Plan date operation - FY98.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

OTHER PERMIT LIMITATIONS & COMMENTS

Treatment at the WCF is being designed to be ancillary to the waste characterization process. As a general rule, no waste will be shipped to the WCF. Only waste that is found to require treatment during characterization is expected to be treated.

TECHNOLOGY

Amalgamation

Characterization

Neutralization

Repackaging

Sorting

Stabilization

MATRIX

Liquid Mercury

To Be Determined

Organic Liquids

Aqueous Liquids

Inorganic Debris

Heterogeneous Debris

Elemental Lead

Organic Debris

Inorganic Debris

Heterogeneous Debris

Elemental Lead

Organic Liquids

Aqueous Liquids

Organic Sludges/Particulates

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Waste Engineering Development Facility (WEDF)
 SYSTEM: 00502, Amalgamation Unit
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 18-E1

PERMIT [Other UNIT of MEASURE]: .0004 tons/hour

STATUS: Planned Unapproved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N Y N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/91	/ /
RCRA	Part B App	State	11/01/95	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Complete facility upgrade, EA and begin operations.

OTHER PERMIT LIMITATIONS & COMMENTS

INEL has requested interim status for amalgamation at WEDF.

TECHNOLOGY

Amalgamation

MATRIX

Liquid Mercury

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Waste Engineering Development Facility (WEDF)
 SYSTEM: 00503, Debris Sizing Unit
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 18-E1

PERMIT [Other UNIT of MEASURE]: 5000 pounds/day

STATUS: Planned Unapproved

RCRA CHARACTERISTICS
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N N N N

PERMIT STATUS INFORMATION
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR APPLICATION SUBMITTED RENEWAL DATE
 RCRA Interim State 01/01/93 / /
 RCRA Part B App State 11/01/95 / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Complete facility upgrades, EA and begin operation.

OTHER PERMIT LIMITATIONS & COMMENTS

Interim status has been requested with the State of Idaho for treatment of debris.

TECHNOLOGY

Size Reduction

MATRIX

Cemented Solids
 Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Elemental Lead

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Waste Engineering Development Facility (WEDF)
 SYSTEM: 00323, Macroencapsulation Unit
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 864 0

System Capacity

ADS NUMBER: 18-E1

PERMIT [Other UNIT of MEASURE]: 5000 pounds/day

STATUS: Planned Unapproved

— TRU — RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/92	/ /
RCRA	Part B App	State	11/01/95	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Complete facility upgrades, EA and begin operations.

OTHER PERMIT LIMITATIONS & COMMENTS

Interim status has been requested with the State of Idaho for macroencapsulation.

TECHNOLOGY

Macroencapsulation

MATRIX

Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Elemental Lead

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Waste Engineering Development Facility (WEDF)
 SYSTEM: 00501, Neutralization Unit
 CONTACT: Dave Eaton 208-526-7002

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 18-E1

PERMIT [Other UNIT of MEASURE]: 80 gallons/day

STATUS: Planned Unapproved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N N Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/91	/ /
RCRA	Part B App	State	11/01/95	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Complete facility upgrades, EA and begin operations.

OTHER PERMIT LIMITATIONS & COMMENTS

Interim status has been requested with the State of Idaho for neutralization.

TECHNOLOGY

Neutralization

MATRIX

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Waste Engineering Development Facility (WEDF)
 SYSTEM: 00322, Stabilization Unit
 CONTACT: Dave Eaton 208-526-7002

DESIGN 2765 PERMIT 0

System Capacity

ADS NUMBER: 18-E1

PERMIT [Other UNIT of MEASURE]: 2000 gal/day

STATUS: Existing Could be used for mixed waste

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/01/87	/ /
RCRA	Part B App	State	11/01/95	/ /

OTHER INFORMATION

Permitted capacity = 2,500 tons/year.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Stabilization unit will utilize both sulfur polymer cement and Portland Cement.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

WEDF is undergoing facility upgrades and an EA is being prepared for the facility.

OTHER PERMIT LIMITATIONS & COMMENTS

WEDF is currently undergoing facility upgrades and an EA is being prepared. Once these two activities are completed, WEDF will begin operations.

TECHNOLOGY

Stabilization

MATRIX

Organic Liquids
 Aqueous Liquids
 Organic Sludges/Particulates
 Inorganic Sludges/Particulates
 Cemented Solids
 Inorganic Debris
 Heterogeneous Debris
 Soil with <50% Debris
 Soils
 Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Idaho National Engineering Laboratory
 FACILITY: Waste Immobilization Facility
 SYSTEM: 00260, Waste Immobilization Facility
 CONTACT:

DESIGN PERMIT

M3/YR 0 0

— System Capacity —

ADS NUMBER:
 STATUS: Planned Unapproved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 Y Y Y Y B Y Y Y N Y N

OTHER INFORMATION

Design and permit capacities are to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Presently, the final treatment has not been selected. Until the final treatment is selected, the limitation cannot be listed.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

System is undergoing technical evaluation to determine configuration of system and treatment methods to be selected.

OTHER PERMIT LIMITATIONS & COMMENTS

The WIF is a planned/unapproved facility at this time. Therefore, no permit applications have been submitted and capacity unknown. Presently, the final treatment has not been selected. Until the final treatment is selected, the limitations cannot be listed.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Consent Order for NON (Docket No. 1090-1-24-6601). Dated 04/03/93, effective date 04/03/92, between DOE and the State of Idaho and approved by EPA. Requires operation of New Waste Calcine Facility by January 1993, 6 month progress reports, and continued operation every three years until waste tank farm tanks not having adequate secondary containment are empty. NEPA injunction order modifying order of June 28, 1993, issued to DOE, effective 09/21/93. The following is ordered: DOE shall accelerate activities related to the treatment and disposal of high-level radioactive wastes stored at INEL. In support of this: (a) DOE will calcine all high-level liquid radioactive waste that does not contain sodium on or before January 1, 1998; (b) DOE will calcine or otherwise process as much sodium-bearing high-level liquid radioactive waste (sodium liquid waste) as DOE and the State of Idaho mutually agree is practicable by January 1, 1998; (c) DOE will identify a limited number of potential technologies to calcine or process sodium liquid waste on or before November 15, 1993, and thereafter evaluate and conduct tests to determine the viability of the competing technologies; (d) DOE will select a technology for calcining or processing sodium liquid waste, including a pretreatment technology (if appropriate), in conjunction with the record of decision for the EIS required by the order entered June 28, 1993; (e) DOE will select a technology for converting calcined waste into an appropriate form for disposal in conjunction with the record of decision for the EIS required by the order entered June 28, 1993; (f) DOE will construct facilities necessary to implement the technologies selected for calcining or processing sodium liquid waste and for converting calcined waste into an appropriate form for disposal in accordance with a schedule to be negotiated with the State of Idaho.

TECHNOLOGY

Vitrification

MATRIX

Aqueous Liquids
 Inorganic Sludges/Particulates
 Calcine Solids
 Inorganic Solids

M3/YR	69	69

PERMIT [Other UNIT of MEASURE]: 50 gallons/day

PERMIT STATUS INFORMATION

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Berkeley Laboratory
 FACILITY: Building 75
 SYSTEM: 00164, Unit 131 E
 CONTACT: Mark Lasartemay 510-486-6825

DESIGN PERMIT

M3/YR 760 760

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 550 gallons/day

STATUS: Existing Could be used for mixed waste

-TRU-										RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	N	N	N	N		

PERMIT STATUS INFORMATION				DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE	
RCRA	Final	State	05/04/93	05/03/03	

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Onsite mixed waste is currently being characterized. Upon completion of characterization, treatment will begin.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit states no offsite wastes are to be accepted at the LBL Hazardous Waste Handling Facility, which includes Unit 131 E.

The technology permitted on May 4, 1993 for the system 131 E is Solidification and Consolidation. Permitted capacity is 55 gallons at a time and 550 gallons per day.

TECHNOLOGY

Consolidation

MATRIX

Aqueous Liquids

Solidification

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Berkeley Laboratory
 FACILITY: Building 85
 SYSTEM: 00162, Unit MW-6
 CONTACT: Tim Wan 510-486-7073

DESIGN PERMIT

M3/YR 72 72

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 72 gallons/day

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: / /

CONSTRUCTION COMPLETION DATE: 03/96

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Final	State	05/04/93	05/03/03

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Part of the state-of-the-art Hazardous Waste Handling Facility (HWHF).

Plan date operation - FY96.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Title I design has been submitted to DOE for review - 100% complete.

Site work construction - 75% complete.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit states no offsite wastes are to be accepted at the LBL Hazardous Waste Handling Facility, which includes Unit MW-6.

The technology permitted on May 4, 1993 for Unit MW-6 is Neutralization only. Permitted capacity is 1 gallon at a time and 72 gallons per day.

TECHNOLOGY

Neutralization

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Berkeley Laboratory
 FACILITY: Building 85
 SYSTEM: 00163, Unit MW-7
 CONTACT: Tim Wan 510-486-7073

	DESIGN	PERMIT
M3/YR	550	550
System Capacity		

ADS NUMBER:

STATUS: Planned Approved

KEY DECISION STATUS: KD-1 DATE STATUS ACHIEVED: 02/01/88 CONSTRUCTION COMPLETION DATE: 03/96

-TRU-								RCRA CHARACTERISTICS			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
N	Y	N	Y	CH	N	N	N	N	N	N	

PERMIT STATUS INFORMATION				DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE	
RCRA	Final	State	05/04/93	05/03/03	

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Part of the state-of-the-art Hazardous Waste Handling Facility (HWHF).

Plan date operation - FY96.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Title I design has been submitted to DOE for review - 100% complete.

Site work construction - 75% complete.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit states no offsite wastes are to be accepted at the LBL Hazardous Waste Handling Facility, which includes Unit MW-7.

TECHNOLOGY

Consolidation

Solidification

MATRIX

Unspecified

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Lawrence Livermore National Laboratory	DESIGN	PERMIT
FACILITY:	Area 514 WWFU		
SYSTEM:	00230, Area 514 WWFU	M3/YR	3396
CONTACT:	J. S. Bowers		3396
	510-422-7756		

— System Capacity —

ADS NUMBER: 3941

PERMIT [Other UNIT of MEASURE]: 896,000 gal/yr

STATUS: Existing Operating

<u>-TRU-</u>					<u>RCRA CHARACTERISTICS</u>					
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	Y	Y	Y	Y

PERMIT STATUS INFORMATION

REGULATION			PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA			Interim	State	01/15/93	/ /

OTHER INFORMATION

Metals are <1%, Mercury <20 ppm, and Organics <1000 ppm.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

No administrative limitations for Section 3.1 Treatment Units. Currently operating under interim status.

The systems have no technical design limitations with regard to existing regulatory criteria used for LDR standards, POTW requirements, and/or BAAQMD standards. The technical limitations of these systems are governed by the principles of chemical equilibrium (i.e., constituents that may leach into the environment will do so based on solubility products and adsorption forces).

There are administrative limitations on design. Design changes that cause administrative actions (such as supplying regulatory documents) do not preclude meeting LDR standards. They only preclude timely implementation of improvements to design.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application and Interim Status Document prohibit acceptance of offsite wastes from other DOE facilities.

Note: Revised Part B permit application to be submitted by 12/15/93. Revised Part A permit application (12/16/91 revision) approved 1/15/93.

Other unit of measure for permitted capacity: 4,480 gal/day.

TECHNOLOGY

Filtration

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Livermore National Laboratory
 FACILITY: Area 514 WWFU
 SYSTEM: 00231, Area 514 WMTF
 CONTACT: J. S. Bowers 510-422-7756

DESIGN PERMIT

M3/YR 6822 6822

System Capacity

ADS NUMBER: 3941

PERMIT [Other UNIT of MEASURE]: 1,800,000 gal/year

STATUS: Existing Operating

-TRU-				RCRA CHARACTERISTICS							
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
N	Y	N	N	CH	Y	Y	Y	Y	Y	Y	

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	01/15/93	/ /

OTHER INFORMATION

Metals are <1%, mercury <20 ppm, and Organics <1000 ppm.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

No administrative limitations for Section 3.1 Treatment Units. Currently operating under interim status.

The systems have no technical design limitations with regard to existing regulatory criteria used for LDR standards, POTW requirements, and/or BAAQMD standards. The technical limitations of these systems are governed by the principles of chemical equilibrium (i.e. constituents that may leach into the environment will do so based on solubility products and adsorption forces).

There are administrative limitations on design. Design changes that cause administrative actions (such as supplying regulatory documents) do not preclude meeting LDR standards. They only preclude timely implementation of improvements to design.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application and Interim status document prohibit acceptance of offsite wastes from other DOE facilities.

Note: Revised Part B permit application to be submitted by 12/15/93. Revised Part A permit application (12/16/91 revision) approved 1/15/93.

Other unit of measure for permitted capacity: 9,000 gallons/day.

TECHNOLOGY

Equalization

Neutralization

MATRIX

Aqueous Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Livermore National Laboratory
 FACILITY: Area 514-1
 SYSTEM: 00236, Carbon Adsorption Unit
 CONTACT:

DESIGN PERMIT

M3/YR 147000 147000

System Capacity

ADS NUMBER: 3941

PERMIT [Other UNIT of MEASURE]: 38,000,000 gal/yr

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: 10/01/93

CONSTRUCTION COMPLETION DATE: 06/94

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N Y N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	04/30/93	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

RCRA Part B permit application revision to be submitted to State by 12/15/93.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B Permit Application prohibits acceptance of offsite wastes from other DOE facilities.

Note: Part B permit required. Part B permit application submitted 4/30/93. Revised Part B Permit Application to be submitted to State by 12/15/93; however, it will still prohibit acceptance of offsite wastes.

Other unit of measure for permitted capacity: 194,400 gal/day.

TECHNOLOGY

Carbon Adsorption

MATRIX

Organic Liquids
 Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Livermore National Laboratory
 FACILITY: Area 514-1
 SYSTEM: 00237, Centrifugation Unit
 CONTACT:

DESIGN PERMIT
 M3/YR 9611 9611

— System Capacity —
 PERMIT [Other UNIT of MEASURE]: 2,536,000 gal/year

ADS NUMBER: 3941
 STATUS: Planned Approved
 KEY DECISION STATUS: KD-3 DATE STATUS ACHIEVED: 10/01/93 CONSTRUCTION COMPLETION DATE: 06/94

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N Y Y Y

— PERMIT STATUS INFORMATION —
 DATE PERMIT ISSUED OR
 REGULATION PERMIT TYPE REG AGENCY APPLICATION SUBMITTED RENEWAL DATE
 RCRA None State 04/30/93 / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

RCRA Part B permit application revision to be submitted to State by 12/15/93.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application prohibits acceptance of offsite wastes from other DOE facilities.

Note: Part B permit required. Part B permit application submitted 4/30/93. Revised Part B permit application to be submitted to State by 12/15/93; however, it will still prohibit acceptance of offsite wastes.

Other unit of measure for permitted capacity: 12,682 gallons/day.

TECHNOLOGY

Centrifugation

MATRIX

Organic Liquids
Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Livermore National Laboratory
 FACILITY: Area 514-1
 SYSTEM: 00226, Cold Vapor Evaporation Unit
 CONTACT:

DESIGN PERMIT

MG/YR 3790 3790

System Capacity

ADS NUMBER: 3941

PERMIT [Other UNIT of MEASURE]: 1 million gal/year

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: 10/01/93

CONSTRUCTION COMPLETION DATE: 06/94

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N Y Y Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	04/30/93	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

RCRA Part B permit application revision to be submitted to State by 12/15/93.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application prohibits acceptance of offsite wastes from other DOE facilities.

Note: Part B permit required. Part B permit application submitted 4/30/93. Revised Part B permit application to be submitted to State by 12/15/93; however, it will still prohibit acceptance of offsite wastes.

Other unit of measure for permitted capacity: 5,000 gallons/day.

TECHNOLOGY

Evaporation

MATRIX

Organic Liquids
 Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Livermore National Laboratory
 FACILITY: Area 514-1
 SYSTEM: 00235, Portable Blending Unit
 CONTACT:

DESIGN PERMIT

MS/YR 147000 147000

System Capacity

ADS NUMBER: 3941

PERMIT [Other UNIT of MEASURE]: 38.8 million gal/yr

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: 10/01/93

CONSTRUCTION COMPLETION DATE: 06/94

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N Y Y Y

PERMIT STATUS INFORMATION
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA None State 04/30/93 / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

RCRA Part B permit application revision to be submitted to State by 12/15/93.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application prohibits acceptance of offsite wastes from other DoE facilities.

Note: Part B permit required. Part B permit application submitted 4/30/93. Revised Part B permit application to be submitted to State by 12/15/93; however, it will still prohibit acceptance of offsite wastes.

Other unit of measure for permitted capacity: 194,000 gallons/day.

TECHNOLOGY

Neutralization

MATRIX

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Livermore National Laboratory
 FACILITY: Area 514-1
 SYSTEM: 00234, Tank Blending Unit
 CONTACT:

DESIGN PERMIT

M3/YR 15281 15281

System Capacity

ADS NUMBER: 3941

PERMIT [Other UNIT of MEASURE]: 4,032,000 gal/yr

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: 10/01/93

CONSTRUCTION COMPLETION DATE: 06/94

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N Y Y Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	04/30/93	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

RCRA Part B permit application revision to be submitted to State by 12/15/93.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application prohibits acceptance of offsite wastes from other DOE facilities.

Note: Part B permit required. Part B permit application submitted 4/30/93. Revised Part B permit application to be submitted to State by 12/15/93; however, it will still prohibit acceptance of offsite waste.

Other unit of measure for permitted capacity: 20,160 gallons/day.

TECHNOLOGY

Blending

MATRIX

Organic Liquids
 Aqueous Liquids

DESIGN PERMIT

M3/YR	633	633

----- System Capacity -----

PERMIT [Other UNIT of MEASURE]: 27.55 tons/day

PERMIT STATUS INFORMATION

DATE PERMIT ISSUED OR

REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
17	17	17	17	17
18	18	18	18	18
19	19	19	19	19
20	20	20	20	20
21	21	21	21	21
22	22	22	22	22
23	23	23	23	23
24	24	24	24	24
25	25	25	25	25
26	26	26	26	26
27	27	27	27	27
28	28	28	28	28
29	29	29	29	29
30	30	30	30	30
31	31	31	31	31
32	32	32	32	32
33	33	33	33	33
34	34	34	34	34
35	35	35	35	35
36	36	36	36	36
37	37	37	37	37
38	38	38	38	38
39	39	39	39	39
40	40	40	40	40
41	41	41	41	41
42	42	42	42	42
43	43	43	43	43
44	44	44	44	44
45	45	45	45	45
46	46	46	46	46
47	47	47	47	47
48	48	48	48	48
49	49	49	49	49
50	50	50	50	50
51	51	51	51	51
52	52	52	52	52
53	53	53	53	53
54	54	54	54	54
55	55	55	55	55
56	56	56	56	56
57	57	57	57	57
58	58	58	58	58
59	59	59	59	59
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61	61	61	61	61
62	62	62	62	62
63	63	63	63	63
64	64	64	64	64
65	65	65	65	65
66	66	66	66	66
67	67	67	67	67
68	68	68	68	68
69	69	69	69	69
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72	72	72	72	72
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74	74	74	74	74
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77	77	77	77	77
78	78	78	78	78
79	79	79	79	79
80	80	80	80	80
81	81	81	81	81
82	82	82	82	82
83	83	83	83	83
84	84	84	84	84
85	85	85	85	85
86	86	86	86	86
87	87	87	87	

RCRA	Interim	State	01/15/93	/	/

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

The systems have no technical design limitations with regard to existing regulatory criteria used for LDR standards, POTW requirements, and/or BAAQMD standards. The technical limitations of these systems are governed by the principles of chemical equilibrium (i.e. constituents that may leach into the environment will do so based on solubility products and adsorption forces).

There are administrative limitations on design. Design changes that cause administrative actions (such as supplying regulatory documents) do not preclude meeting LDR standards. They only preclude timely implementation of improvements to design.

Part B permit application and Interim status document prohibit acceptance of offsite wastes from other DOE facilities.

Note: Revised Part B permit application to be submitted by 12/15/93. Revised Part A permit application (12/16/91 revision) approved 1/15/93.

MATRIX

Organic Debris
Inorganic Debris
Heterogeneous Debris

Organic Debris
Inorganic Debris
Heterogeneous Debris
Unspecified

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Lawrence Livermore National Laboratory	DESIGN	PERMIT
FACILITY:	Building 513		
SYSTEM:	00228, Solidification Facility	M3/YR	1332
CONTACT:			1332

— System Capacity —

ADS NUMBER: 3941

PERMIT [Other UNIT of MEASURE]: 1760 gal/day

STATUS: Planned Unapproved

—TRU—								— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	Y	Y	Y	Y

— PERMIT STATUS INFORMATION —				
REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	04/30/93	/ /

OTHER INFORMATION

Metals <1%, Mercury <20 ppm, and Organics <1000 ppm.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

No administrative limitations for Section 3.1 Treatment Units. Currently operating under interim status.

The systems have no technical design limitations with regard to existing regulatory criteria used for LDR standards, POTW requirements, and/or BAAQMD standards. The technical limitations of these systems are governed by the principles of chemical equilibrium (i.e. constituents that may leach into the environment will do so based on solubility products and adsorption forces).

There are administrative limitations on design. Design changes that cause administrative actions (such as supplying regulatory documents) do not preclude meeting LDR standards. They only preclude timely implementation of improvements to design.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application and Interim status document prohibit acceptance of offsite wastes from other DOE facilities.

Note: Revised Part B permit application to be submitted by 12/15/93. Part A application (12/16/91 revision) approved 12/18/92.

This facility is not included in the April 30, 1993 amended Part A application and therefore does not have Interim Status authority to operate.

TECHNOLOGY

Solidification

MATRIX

Organic Sludges/Particulates
Inorganic Sludges/Particulates
Soils

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Livermore National Laboratory
 FACILITY: Building 612
 SYSTEM: 00229, Size Reduction Unit
 CONTACT:

DESIGN PERMIT

M3/YR 115 115

System: city

ADS NUMBER: 3941

PERMIT [Other UNIT of MEASURE]: 5 tons/day

STATUS: Planned Approved

KEY DECISION STATUS: KD-0

DATE STATUS ACHIEVED: 02/01/92

CONSTRUCTION COMPLETION DATE: /

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N N N N CH N N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	04/30/93	/ /

OTHER INFORMATION

Non-operational.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

No administrative limitations for Section 3.1 Treatment Units. Currently operating under interim status.

The systems have no technical design limitations with regard to existing regulatory criteria used for LDR standards, POTW requirements, and/or BAAQMD standards. The technical limitations of these systems are governed by the principles of chemical equilibrium (i.e. constituents that may leach into the environment will do so based on solubility products and adsorption forces).

There are administrative limitations on design. Design changes that cause administrative actions (such as supplying regulatory documents) do not preclude meeting LDR standards. They only preclude timely implementation of improvements to design.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Part B permit application revision for new location to be submitted to State by 12/15/93.

No estimated construction completion date - system to be relocated.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application and Interim status document would prohibit acceptance of offsite wastes from other DOE facilities.

Note: Unit approved by State for construction; however, new location required. Part B permit application submitted 4/30/93. Revised Part B permit application will be submitted to State by 12/15/93.

This facility was included in the original Part A application but is not authorized under Interim Status for mixed waste.

TECHNOLOGY

Size Reduction

MATRIX

Unspecified

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Lawrence Livermore National Laboratory
 FACILITY: Mixed Waste Management Facility
 SYSTEM: 00360, Mixed Waste Management Facility
 CONTACT:

DESIGN PERMIT

MS/YR 0 0

System Capacity

ADS NUMBER: 3941

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: 10/01/93

CONSTRUCTION COMPLETION DATE: 06/94

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE

N Y N N CH N N Y N N N

PERMIT STATUS INFORMATION

REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR APPLICATION SUBMITTED RENEWAL DATE

RCRA None State / / / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

RCRA RD&D permit must be obtained from the State.

OTHER PERMIT LIMITATIONS & COMMENTS

RCRA RD&D permit must be obtained.

TECHNOLOGY

Unspecified

MATRIX

Unspecified

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Los Alamos National Laboratory
 FACILITY: Controlled Air Incinerator
 SYSTEM: 00312, Liquid Feed System
 CONTACT: Steve Shafer 505-845-4862

DESIGN PERMIT

M3/YR 300 0

System Capacity

ADS NUMBER: 4170

PERMIT [Other UNIT of MEASURE]: 200 pounds/hr

STATUS: Existing Could be used for mixed waste

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH Y Y Y Y Y Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
TSCA	Final	NMED	01/01/86	/ /
RCRA	Final	NMED	01/01/89	/ /

OTHER INFORMATION

Non-operational. Permit pending.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Other matrices include gases and chemical products.

Final RCRA permit is for hazardous wastes only. Need to submit permit modification request to incinerate mixed waste.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Facility upgrades, staffing/training, safety documentation, permit modification to incinerate mixed waste, trial burn.

OTHER PERMIT LIMITATIONS & COMMENTS

No: Freon-11, Freon-12, Tribromomethane, Soils or Vermiculite.

Limits on Carbon-14, Tritium, TRU.

Both TSCA and RCRA permit renewal are under modification.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

System is incorporated into the LANL Federal Facility Compliance Agreement with EPA that is currently in the execution process. Trial burn is targeted for 2-95.

TECHNOLOGY

Incineration

MATRIX

Organic Liquids
 Aqueous Liquids
 Lab Packs with Metals
 Lab Packs without Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Los Alamos National Laboratory	DESIGN	PERMIT
FACILITY:	Controlled Air Incinerator		
SYSTEM:	00309, Solid Feed System	M3/YR	200
CONTACT:	Steve Shafer 505-845-4862		0

— System Capacity —

ADS NUMBER: 4170

PERMIT [Other UNIT of MEASURE]: 100 pounds/hr

STATUS: Existing Could be used for mixed waste

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	Y	Y	CH	Y	Y	Y	Y	Y	Y		

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
TSCA	Final	NMED	01/01/86	/ /
RCRA	Final	NMED	01/01/89	/ /

OTHER INFORMATION

Non-operational. Permit pending.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Other matrices include solid chemical products.

Final RCRA permit is for hazardous wastes only. Need to submit permit modification request to incinerate mixed waste.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Facility upgrades, staffing/training, safety documentation, permit modification to incinerate mixed waste, trial burn.

OTHER PERMIT LIMITATIONS & COMMENTS

No: Freon-11, Freon-12, Tribromomethane, soils or vermiculite.

Limits on Carbon-14, Tritium, TRU.

Both TSCA and RCRA permits renewals are under modification.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

System is incorporated into the LANL Federal Facility Compliance Agreement with EPA that is currently in the execution process. Trial burn is targeted for 2-95.

TECHNOLOGY

Incineration

MATRIX

Organic Sludges/Particulates
Inorganic Sludges/Particulates
Organic Debris
Inorganic Debris
Heterogeneous Debris
Lab Packs with Metals
Lab Packs without Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Los Alamos National Laboratory	DESIGN	PERMIT
FACILITY:	Hazardous Waste Treatment Facility (HMTF)		
SYSTEM:	00208, Detox Skid	M3/YR	0
CONTACT:	Stan Zygmunt 505-667-2245		0

ADS NUMBER: 4174
 STATUS: Planned Approved

— System Capacity —
 PERMIT [Other UNIT of MEASURE]: 4 kg/hour

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
M	Y	Y	Y	CH	Y	Y	Y	Y	Y	Y		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design capacity is 4 kg/hr.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Technology is currently undergoing bench scale tests. Final design and construction of skid is targeted for FY 94. Estimated construction completion date - FY 95.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

The Detox Skid is part of the LANL Federal Facility Compliance Agreement with the EPA. The unit is intended to operate in the Hazardous Waste Treatment Facility.

TECHNOLOGY

Chemical Oxidation

MATRIX

Organic Liquids
Aqueous Liquids
Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Los Alamos National Laboratory	DESIGN	PERMIT
FACILITY:	Hazardous Waste Treatment Facility (HUTF)		
SYSTEM:	00541, Future Skids	M3/YR	0 0
CONTACT:	Stan Zygmunt 505-667-2245		

— System Capacity —

ADS NUMBER:

STATUS: Planned Unapproved

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	Y	Y	CH	Y	Y	Y	Y	Y	Y		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Several skid mounted treatment units are being considered for development to operate in the Hazardous Waste Treatment Facility.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Part of the LANL Federal Facility Compliance Agreement. Will develop these skids as the need is identified.

TECHNOLOGY

Amalgamation

Leaching

Oxidation/Reduction

Stabilization

MATRIX

Organic Liquids

Inorganic Sludges/Particulates
Cemented Solids
Organic Debris
Inorganic Debris
Heterogeneous Debris
Lab Packs with Metals
Lab Packs without Metals
Reactive Metals
Compressed Gases
Liquid Mercury
Elemental Lead
Beryllium Dust
Batteries (Lead Acid, Cadmium)
Calcine Solids
Inorganic Solids
Organic Solids
Uranium Chips

Aqueous Liquids

Organic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Los Alamos National Laboratory	DESIGN	PERMIT
FACILITY:	Hazardous Waste Treatment Facility (HUTF)		
SYSTEM:	00207, Plating Wastes Acids/Bases Skid	M3/YR	0 0
CONTACT:	Stan Zygmunt 505-667-2245		

— System Capacity —

ADS NUMBER: 4174

STATUS: Planned Approved

-TRU-										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	Y	Y	CH	Y	N	N	Y	Y	Y		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design Capacity to be determined.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Continuing bench scale tests. Final design and construction of skid targeted for FY 94. Estimated construction completion date - FY 95.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Part of the LANL Federal Facility Compliance Agreement with the EPA. The unit is intended to operate in the Hazardous Waste Treatment Facility.

TECHNOLOGY

Chemical Precipitation

Neutralization

Oxidation/Reduction

MATRIX

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Los Alamos National Laboratory	DESIGN	PERMIT
FACILITY:	Hazardous Waste Treatment Facility (HMTF)		
SYSTEM:	00206, Reactive Metals Skid	M3/YR	0 0
CONTACT:	Stan Zygmunt 505-667-2245	— System Capacity —	

ADS NUMBER: 4174

STATUS: Planned Approved

<u>-TRU-</u>				<u>RCRA CHARACTERISTICS</u>			
HLW	LLW	TRU	ALPHA HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE CORROSIVE REACTIVE
N	Y	Y	Y	CH	Y	Y	Y Y Y

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Treatment skid for uranium chips and barium sands.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Bench scale tests are in progress. If successful, skid design will start in FY 94. Estimated construction completion date - FY 96.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Part of the LANL Federal Facility Compliance Agreement with the EPA. The unit is intended to operate in the Hazardous Waste Treatment Facility.

TECHNOLOGY

Water Reaction

MATRIX

Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Los Alamos National Laboratory	DESIGN	PERMIT
FACILITY:	Lead Decontamination Trailer		
SYSTEM:	00203, Lead Decontamination Trailer	M3/YR	25 0
CONTACT:	Stan Zygmunt 505-667-2245		

— System Capacity —

ADS NUMBER: 3088

STATUS: Existing Operating

-TRU-										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	Y	RH	Y	N	N	N	N	N		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Part of LANL Federal Facility Compliance Agreement with EPA.

TECHNOLOGY

Decontamination

Recycling

MATRIX

Elemental Lead

Elemental Lead

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Los Alamos National Laboratory
 FACILITY: Scintillation Vial Crusher - TA-84, Area L
 SYSTEM: 00204, Scintillation Vial Crusher
 CONTACT: Tim Sloan 505-665-8663

DESIGN PERMIT

M3/YR 0 0

— System Capacity —

ADS NUMBER: 3088/4172

STATUS: Existing Operating

—TRU—

— RCRA CHARACTERISTICS —

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE

N Y Y Y CH Y Y Y Y N N

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Other matrices include scintillation vials and cocktail containers.

TECHNOLOGY

Crushing

MATRIX

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Los Alamos National Laboratory	DESIGN	PERMIT
FACILITY:	Waste Immobilization Facility		
SYSTEM:	00510, Waste Immobilization Facility	MS/YR	0 0
CONTACT:	Ron Nakuoka 505-665-5971		

----- System Capacity -----

ADS NUMBER: 4172

STATUS: Planned Unapproved

-TRU-										- KCRA CHARACTERISTICS -		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	Y	Y	CH	Y	Y	Y	Y	Y	Y		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Technology is vitrification after incineration. Other matrices are ash and sludge primarily used for immobilization of ash.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

System is currently in conceptual design phase.

TECHNOLOGY

Vitrification

MATRIX

Organic Sludges/Particulates
Inorganic Sludges/Particulates
Soil with <50% Debris
Soils
Reactive Metals
Elemental Lead
Beryllium Dust
Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Mound Facility	DESIGN	PERMIT
FACILITY:	Mound Glass Melter		
SYSTEM:	00261, Mound Glass Melter	M3/YR	200 200
CONTACT:	Jim Orban 505-845-4421		

— System Capacity —

ADS NUMBER: 3100

STATUS: Existing Could be used for mixed waste

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	Y	N	Y	Y	Y	Y		

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Trial Burn	Ohio EPA	01/01/90	/ /
NEPA	EA	DOE-HQ	07/01/93	/ /

OTHER INFORMATION

Part A permit waste feed rate = 0.025 short tons/hour.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Not permitted at this time, the glass melter is scheduled for a trial burn in 1995. EPA and the state of Ohio are to monitor the burns and analyze the results for compliance.

Other wastes can be treated by the glass melter with design changes to the feed mechanism and some tritium contaminated wastes with changes in the exhaust filtering system.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Trial burn plan approved by Ohio EPA.

DOE-HQ approves EA.

OTHER PERMIT LIMITATIONS & COMMENTS

May change after trial burn plan results evaluated.

TECHNOLOGY

Vitrification

MATRIX

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	NSSI/Recovery Services, Texas	DESIGN	PERMIT
FACILITY:	NSSI/Recovery Services Inc.		
SYSTEM:	00523, NSSI	M3/YR	0 0
CONTACT:	Robert Gallagher 713-641-0391		
		System Capacity	

ADS NUMBER:

STATUS: Existing Operating Commercial

-TRU- RCRA CHARACTERISTICS
HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
Y

OTHER INFORMATIONSYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATIONTECHNOLOGYMATRIX

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Nevada Test Site	DESIGN	PERMIT
FACILITY:	Liquid Waste Treatment Facility		
SYSTEM:	00511, Liquid Waste Treatment System	M3/YR	0 0
CONTACT:	Cathy Connoyer 702-295-7521		

— System Capacity —

ADS NUMBER: 338

STATUS: Planned Approved

KEY DECISION STATUS: KD-0

DATE STATUS ACHIEVED: 01/01/92

CONSTRUCTION COMPLETION DATE: 08/95

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	Y	N	Y	N	N	N		

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part B App	NV DEP	/ /	/ /

OTHER INFORMATION

Design capacity = 4,000,000 gal/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

The system will be RCRA-permitted, and therefore be subject to permit conditions. Waste material resulting from solar evaporation will be characterized and, if necessary, treated to meet Waste Acceptance Criteria based on NVO-325, Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements for disposal on site.. An Environmental Assessment is also underway and may identify additional administrative limits.

The Liquid Waste Treatment System will consist of facilities for treatment of waste generated primarily from groundwater characterization and decontamination operations. The primary treatment method will be solar evaporation from RCRA-permitted surface impoundments. Pretreatment of the liquids and solidification of the remaining sludge is also planned, but details of these treatment units are still under development.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

KD-1 to begin on 11-01-93.

Title I design will be initiated on 11-01-93, RCRA Part B application and EA currently being prepared.

OTHER PERMIT LIMITATIONS & COMMENTS

An application was submitted for RCRA Part B in July 1992. The LWTS would be an addition or modification to this permit. No renewal date applicable.

The permitted capacity of the facility is yet undetermined.

TECHNOLOGY

Evaporation

MATRIX

Aqueous Liquids

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge K-25 Site	DESIGN	PERMIT
FACILITY:	Central Neutralization Facility		
SYSTEM:	00155, Central Neutralization Facility	M3/YR	0 120000
CONTACT:	T. Bowers 615-576-2629		

ADS NUMBER:

STATUS: Existing Operating

— System Capacity —
 PERMIT [Other UNIT of MEASURE]: 160000 gal/day

—TRU—								— RCRA CHARACTERISTICS —			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
N	Y	N	Y	CH	Y	Y	N	N	Y	N	

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
ClnWtrAct	NPDES	TDEC	10/01/92	10/01/97
RCRA	Prm by Rul	TDEC	/ /	/ /

OTHER INFORMATION

Design capacity = 160,000 gallons/day.

Approximate annual throughput achievable = 36 to 40 million gallons/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Discharge of CNF effluent is regulated by NPDES permit No. TN0002950. Influent to CNF must meet the waste acceptance criteria for the unit. These criteria were established to ensure compliance with NPDES Permit and DOE Orders (i.e., 5400.5).

At present, the unit cannot accept aqueous liquids with organic constituents. Facility is capable of treating low concentrations of uranium and transuranic materials.

FY 96 line item project for upgrading CNF to provide enhanced rad removal capability, and the the ability to treat mixed waste separately from non-hazardous waste. The project is currently in the feasibility stage.

OTHER PERMIT LIMITATIONS & COMMENTS

Rad effluent regulated by DOE Order 5400.5.

TECHNOLOGY

Neutralization

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge K-25 Site	DESIGN	PERMIT
FACILITY:	K-25		
SYSTEM:	00519, K-1232 Wastewater Treatment Facility	M3/YR	0 4000
CONTACT:	T. Bowers 615-576-2629		

— System Capacity —

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 1 million gal/yr

STATUS: Existing Could be used for mixed waste

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	Y	N	Y	N	Y	N		

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Perm by Rul	TDEC	/ /	/ /

OTHER INFORMATION

Design capacity = 1,000,000 gallons/yr or 0.8 m3/hr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility is in shut-down mode and no administrative limits have been established.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

System has treated mixed waste in the past, but is currently in stand-by mode.

TECHNOLOGY

Chemical Precipitation

MATRIX

Aqueous Liquids

Evaporation

Aqueous Liquids

Neutralization

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge K-25 Site
 FACILITY: K-25
 SYSTEM: 00521, Sludge Fixation Unit
 CONTACT: J. L. Shoemaker 615-574-9937

DESIGN PERMIT

M3/YR 0 5001

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 5000 gallons/day

STATUS: Existing Could be used for mixed waste

<u>-TRU-</u>										<u>RCRA CHARACTERISTICS</u>		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	Y	N	N	N	N	N		

OTHER INFORMATION

Design capacity = 5,000 gal/day.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility operations have been discontinued and are scheduled to be closed under RCRA.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Scheduled for RCRA closure. No plans to treat mixed waste. Option-stop RCRA closure & negotiate with State to bring system back on line.

TECHNOLOGY

Solidification

MATRIX

Inorganic Sludges/Particulates

Soils

Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge K-25 Site
 FACILITY: K-25 Site TSCA Incinerator
 SYSTEM: 00305, K-25 Site TSCA Incinerator
 CONTACT: F. Perez 615-576-7734

DESIGN PERMIT

M3/YR 0 15716

System Capacity

ADS NUMBER:

STATUS: Existing Operating

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N Y Y N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Final	TDEC	09/28/87	09/28/87
RCRA	Final	TDEC	09/30/92	09/30/02
TSCA	Final	EPA	03/20/89	03/20/89
NPDES	Final	TDEC	09/30/92	/ /
CAA	Final	TDEC	10/02/91	10/02/93

OTHER INFORMATION

12,000 tons/year permitted capacity is based on waste characteristics and includes feeding of solid waste (e.g., sludges, soil, etc.) DOE has not provided approval at this time to incinerate solid wastes - only liquids, therefore operational capacity is much lower (2,000 tons/year).

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design capacity = 12,000 tons/yr. U. S. EPA approval to dispose of PCBs: March 20, 1989. U. S. EPA approval for NESHAPS: February 25, 1993. Tennessee SCDES Permit No. TN002950. Tennessee Hazardous Waste Incineration Permit No. TN HW-16. Tennessee Hazardous Waste Treatment and Storage Permit No. TNHW 15A. Tennessee Air Pollution Permit No 0324491. Tennessee Air Pollution Permit No. 024105P.

OTHER PERMIT LIMITATIONS & COMMENTS

Permits restrict offsite waste incineration at the facility to Portsmouth, Paducah, ORNL, Y-12, Fernald, and RMT. Volume restrictions also apply. Permit restricts RCRA waste from DOE-owned offsite facilities to 1,356 tons/year.

Other permits: CAA - Final - TDEC - 09/21/90 - 10/01/95
 CAA - Final - TDEC - 11/17/86 - 10/01/93
 CAA - Final - EPA - 10/26/87 -
 RCRA - Prm by Rul - TDEC - 10/01/91

TECHNOLOGY

Incineration

MATRIX

Organic Liquids
 Aqueous Liquids
 Organic Sludges/Particulate
 Cemented Solids
 Organic Debris
 Inorganic Solids
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge K-25 Site
 FACILITY: K-25 Uranium Decon Facility
 SYSTEM: 00518, K-25 Uranium Decon Facility
 CONTACT: B. E. Vaughn 615-574-9007

DESIGN PERMIT

MS/YR 0 0

System Capacity

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y N CH Y N N N N N

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility is presently in shut-down mode and is in the Decontamination and Decommissioning program.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

No plans to treat mixed waste.

TECHNOLOGY

Decontamination

MATRIX

Inorganic Debris

Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge K-25 Site	DESIGN	PERMIT
FACILITY:	K-25, K-1423		
SYSTEM:	00522, Waste Staging & Processing Facility	M3/YR	0 0
CONTACT:	M. E. Saunders 615-574-0341		

— System Capacity —

ADS NUMBER:

STATUS: Planned Unapproved

—TRU—				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	Y	Y	Y	Y

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Final	TDEC	09/30/92	09/30/02

OTHER INFORMATION

Plan date operation - FY99.

Note: Neutralization - corrosive, reactive, ignitable; Bulking - corrosive, ignitable.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

This facility will be doing only treatments in tanks and containers. The treatments will be elementary neutralization, volume reduction (compaction) and bulking. This is intended to be primarily treatment in a 90 day area and not requiring a permit. If this is needed to be permitted treatment the conditions will be included in the permit.

This is expected to be small scale treatment not easily automated. Therefore only LLW and mixed waste will be treated. This treatment is not expected to be final treatment but rather a pretreatment to facilitate bulking or to meet a treatment facility waste acceptance criteria.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

A general plant project is to be initiated in Nov. 1993 to produce the preliminary proposal for submittal to DOE-ORO for funding approval. Three prioritization of GPP's is a necessary prerequisite.

OTHER PERMIT LIMITATIONS & COMMENTS

The RCRA Part B permit issued for the facility is for container storage (not treatment). Minor treatment, such as pH adjustment and repackaging or bulking processes, are allowed. Any other treatment is not allowed.

TECHNOLOGY

Bulking

MATRIX

Lab Packs with Metals
Lab Packs without Metals

Compaction

Cemented Solids
Organic Debris
Inorganic Debris
Heterogeneous Debris
Inorganic Solids
Organic Solids

Neutralization

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge National Laboratory	DESIGN	PERMIT
FACILITY:	Liquid Low Level Waste Evaporation Facility		
SYSTEM:	00105, Liquid Low Level Waste Evaporation Facility	M3/YR	0 39788
CONTACT:	Chris Scott 615-574-7057		

— System Capacity —

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 1200 gallons/hour

STATUS: Existing Operating

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	Y	Y	RH	Y	N	N	N	Y	N		

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	02/27/86	03/31/91

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

OTHER PERMIT LIMITATIONS & COMMENTS

Operated under "permit-by-rule" RCRA exemption under ORNL NPDES no. TN.0002941. Permit renewal under negotiation with the State.

Solutions containing U-233, U-235, Pu-239, or Pu-241 must be mixed with either depleted uranium or natural thorium (according to chemical similarity) so that the resultant solution will contain at least 100 parts by weight of U-218 or Th-232 per part by weight of the fissile isotope(s).

Solutions containing TRU isotopes or U-233 which are added to the LLLW system must not have a total specific activity from those nuclides greater than 3.7×10^6 Bq/hg (100nCi/g).

TECHNOLOGY

Evaporation

MATRIX

Organic Liquids
Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge National Laboratory
 FACILITY: Melton Valley Low-Level Waste Immobilization Facility
 SYSTEM: 00102, Melton Valley Low-Level Waste Immobilization Facility M3/YR 0 189
 CONTACT: Chris Scott 615-574-7057

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 50000 gal/campaign

STATUS: Existing Operating

-TRU-								RCRA CHARACTERISTICS			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
N	Y	Y	Y	B	Y	Y	N	N	Y	N	

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	02/27/86	03/31/91

OTHER INFORMATION

The treatment process is operated in campaigns (about 1 per year). The primary driving force is not RCRA treatment but rather a means to remove excess liquid to conserve storage capacity.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

"B" under Handling means both CH and RH. The stabilized cement matrix must meet the waste acceptance criteria of LLW disposal facility and must meet RCRA LDR treatment standards.

OTHER PERMIT LIMITATIONS & COMMENTS

Operates under "permit-by-rule" RCRA exemption under NPDES permit No. TN0002841. Permit renewal under negotiation with the State.

Solutions containing TRU isotopes or U-233 which are added to the LLLW system must not have a total specific activity from those nuclides greater than 3.7×10^6 Bq/kg (100nCi/g).

Solutions containing U-233, U-235, Pu-239 or Pu-241 must be mixed with either depleted uranium or natural thorium (according to chemical similarity) so that the resultant solution will contain at least 100 parts by weight of U-238 or Th-232 per part by weight of the fissile isotope(s).

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge National Laboratory
 FACILITY: Process Waste Treatment Plant
 SYSTEM: 00104, Process Waste Treatment Plant
 CONTACT: Chris Scott 615-574-7057

DESIGN PERMIT

M3/YR 0 397789

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 200 gpm

STATUS: Existing Operating

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y N Y N Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	02/27/86	03/31/91
CAA	Final	State	12/18/90	10/01/95

OTHER INFORMATION

Design capacity = 200 gal/minute.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

This facility is not designed for mixed waste treatment. The treatment of listed wastes may result in RCRA sludge generation. This would disrupt the management of that sludge.

This facility is not designed to handle high dose (high activity) liquid.

OTHER PERMIT LIMITATIONS & COMMENTS

Operated under "permit-by-rule" RCRA exemption under ORNL NPDES No. TN0002941. Permit under negotiation with the State.

TECHNOLOGY

Chemical Precipitation

MATRIX

Organic Liquids
 Aqueous Liquids

Filtration

Organic Liquids
 Aqueous Liquids

Ion Exchange

Organic Liquids
 Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge National Laboratory
 FACILITY: X-10
 SYSTEM: 00520, Non-Radiological Waste Treatment Plant
 CONTACT: Chris Scott 615-574-7057

DESIGN PERMIT

M3/YR 0 1511941

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 760 gpm

STATUS: Existing Operating

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N N N N CH Y N Y N Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	02/27/86	03/31/91

OTHER INFORMATION

Design capacity = 760 gpm.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility is subject to CWA NPDES limits.

OTHER PERMIT LIMITATIONS & COMMENTS

Facility is not designed for treatment of radioactive wastewater. Discharge limits for radionuclides are established in DOE Order 5400.5. Material with high levels of radioactivity are automatically diverted to the Process Waste Treatment Plant.

NPDES permit renewal is presently under negotiation with the State.

TECHNOLOGY

Chemical Precipitation

MATRIX

Organic Liquids

Filtration

Organic Liquids

Ion Exchange

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge Y-12 Plant
 FACILITY: Bionitrification Unit Building 9818
 SYSTEM: 00215, Bionitrification Unit
 CONTACT: Chuck Fritts 615-574-3504

DESIGN PERMIT

M3/YR 0 448

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 105000 gal/year

STATUS: Existing Operating

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Prm by Rul	DOEC	05/01/92	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Not a WM Facility/System.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Facility treats mixed waste.

OTHER PERMIT LIMITATIONS & COMMENTS

Capacity of unit not restricted by "permit-by-rule". Nitrate wastes reduced to less than 50 ppm nitrates.

TECHNOLOGY

Biodegradation

MATRIX

Organic Liquids
 Aqueous Liquids
 Organic Sludges/Particulates

Distillation

Organic Liquids
 Aqueous Liquids

Evaporation

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge Y-12 Plant
 FACILITY: Central Pollution Control Facility (CPCF)
 SYSTEM: 00530, Mercury Waste Water Treatment System
 CONTACT: J. Prazniak 615-574-6873

DESIGN PERMIT

M3/YR 0 8939

System Capacity

ADS NUMBER:

STATUS: Planned Unapproved

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS RCRA CHARACTERISTICS
 N N N N CH Y Y Y N Y N

PERMIT STATUS INFORMATION

REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 CWA NPDES State 01/01/89 APPLICATION SUBMITTED RENEWAL DATE
 12/31/93

OTHER INFORMATION

Design capacity = 5,000,000 gpy.

Plan date operation - FY96.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

The HGTF is planned to remove metals from waste water generated by decontamination of equipment contaminated with mercury. The predominant metal contaminant will be mercury. Other metals, including uranium, are expected to be incidental. The HGTF will discharge through a dedicated, permitted outfall. Understandings with the State of Tennessee are likely to limit the types of waste waters that may be received. The regulatory character of sludge from the treatment of metals and carbon from the polishing step is uncertain at this time.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Engineering studies. Funded by Environmental Restoration Program. Design start scheduled for Dec. 16, 1993. Part of Y-12 Reduction of Mercury in Plant Effluents (RMPE-II) Project.

OTHER PERMIT LIMITATIONS & COMMENTS

The new NPDES permit for the Y-12 plant is anticipated in 1993.

Final permit not received yet. Permit is expected to require monitoring for mercury, but limits are not known. Understanding with the State is likely to limit types of waste waters to be treated to those generated from mercury contaminated/clean-up operations.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Operation of system will be part of the Compliance Schedule & Agreement that accompanies new NPDES permit.

TECHNOLOGY

Mercury Removal

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Central Pollution Control Facility (CPCF)		
SYSTEM:	00216, Mopwater and Concentrated Waste System	M3/YR	0 10227
CONTACT:	J. Prazniak 615-574-6873		

— System Capacity —

ADS NUMBER: 2201

STATUS: Existing Operating

—TRU—				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	Y	N	Y	N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
CWA	NPDES	State	01/01/85	12/31/93
RCRA	Prm by Rul	State	01/01/85	/ /

OTHER INFORMATION

Design capacity = 2,700,000 gal/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

The CPCF/Mopwater Operation is designed to remove oil and grease, metals, and organics from aqueous waste generated by cleaning operations at the Y-12 plants. The system is not designed to treat nitrate-bearing wastes. Mixed waste may be received and treated. Effluent is discharged through an NPDES permitted outfall.

The system operates on a batch basis. Maximum batch size is 14,000 gallons. One batch may be treated every two days. Higher production rates, up to 4 batches per week, can be accommodated under problem-free conditions.

Sludge from treatment is typically F006 listed RCRA waste. Sludge is combined with sludge from other CPCF operations, and is stored at the Y-12 West End Treatment Facility sludge storage tanks.

OTHER PERMIT LIMITATIONS & COMMENTS

Facilities that discharge through an NPDES permit and treat waste water are now deemed to have "automatic" permit-by-rule in Tennessee. There is no permit renewal required.

The new permit (CWA) is not expected to specify a capacity, though there will be mass limits on individual discharge parameters.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Operation of the CPCF/Mopwater system is necessary to the extent that mopwaters are generated and require treatment.

TECHNOLOGY

MATRIX

Carbon Adsorption	Aqueous Liquids
Neutralization	Aqueous Liquids
Oil/Water Separation	Aqueous Liquids

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INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge Y-12 Plant
 FACILITY: Cyanide Treatment Facility, Building 9201-5N
 SYSTEM: 00217, Cyanide Treatment Facility
 CONTACT: Art Mitchell 615-574-9867

DESIGN PERMIT

M3/YR 0 13

System Capacity

ADS NUMBER:

STATUS: Existing Operating

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS RCRA CHARACTERISTICS
 N Y N N CH N Y N N Y Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part A	TDEC	07/01/91	/ /
RCRA	Part B	TDEC	05/14/92	/ /

OTHER INFORMATION

Treats waste codes D002-D011.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Not a WM Facility/System.

OTHER PERMIT LIMITATIONS & COMMENTS

The Part A & B applications also allow treatment and storage of wastes within the following EPA waste codes: D002-D011, F007-F012, P029, P030, P033, P098, P104 & P106.

TECHNOLOGY

Chemical Oxidation

MATRIX

Organic Liquids

Aqueous Liquids

Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge Y-12 Plant
 FACILITY: Disp. Area Remedial Actions Liq. Storage Trtmnt.
 SYSTEM: 00330, Disp. Area Remedial Actions Liq. Storage Trtmnt. M3/YR 3979 0
 CONTACT: K. R. Crow 615-574-6876

— System Capacity —

ADS NUMBER:

STATUS: Existing Operating

—TRU—
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS — RCRA CHARACTERISTICS —
 IGNITABLE CORROSIVE REACTIVE
 N N N N CH Y N Y N N N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Prm by Rul	TDEC	03/13/92	/ /
TSCA		EPA	/ /	/ /

OTHER INFORMATION

Normal operating capacity = 3,271 m³/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design 1.05 million gallons/year, 2.5 million gallons/year excess. Permit by rule facility receiving leachate from the Bear Creek Burial Grounds, listed hazardous waste of F001, F002, F005, and F039. Leachate contains PCB contaminated oil.

TECHNOLOGY

Filtration

MATRIX

Organic Liquids
Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge Y-12 Plant
 FACILITY: Disp. Area Remedial Actions Liq. Storage Trtmt.
 SYSTEM: 00330, Disp. Area Remedial Actions Liq. Storage Trtmt
 CONTACT: K. R. Crow 615-574-6876

DESIGN PERMIT

M3/YR 3979 0

System Capacity

ADS NUMBER:

STATUS: Existing Operating

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	N	N	N	CH	Y	N	Y	N	N	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Prm by Rul	TDEC	03/13/92	/ /
TSCA		EPA	/ /	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design 1.05 million gallons/year, 2.5 million gallons/year excess. Permit by rule facility receiving leachate from the Bear Creek Burial Grounds, listed hazardous waste of F001, F002, F005, and F039. Leachate contains PCB contaminated oil.

TECHNOLOGY

Oil/Water Separation

MATRIX

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Groundwater Treatment Facility		
SYSTEM:	00319, Groundwater Treatment Facility	M3/YR	17714 17714
CONTACT:	K. R. Crow 615-574-6876		

— System Capacity —

ADS NUMBER:

STATUS: Existing Operating

—TRU—				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	N	N	N	CH	Y	N	Y	N	N	N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	TDEC	05/22/90	/ /
CAA	Final	TDEC	03/20/91	02/01/95

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design capacity = 4.68 million gallons/year, 2.5 million gallons/year excess. Permit by rule facility discharging effluent through NPDES permit. Treat listed hazardous waters of F001, F002, F005 and F039.

OTHER PERMIT LIMITATIONS & COMMENTS

NPDES permit authorizes discharge of "treated contaminated groundwater." Air permit states that "the maximum process rate for this source (air stripper) shall not exceed 25 gallons of contaminated groundwater per minute. No uranium removal capability.

NPDES permit renewal is pending.

TECHNOLOGY

Air Stripping

Carbon Adsorption

Chemical Precipitation

Filtration

MATRIX

Aqueous Liquids

Organic Liquids

Organic Liquids

Organic Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Oak Ridge Res. Mixed Waste Treatment Facility		
SYSTEM:	00525, MW Treatment Facility - Acid Dissolution - U Removal	M3/YR	2206
CONTACT:	R. R. Kimmitt	615-576-0077	2206

—— System Capacity ——

ADS NUMBER: 8207/8205

STATUS: Planned Unapproved

-TRU-				RCRA CHARACTERISTICS			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS
IGNITABLE	CORROSIVE	REACTIVE					
N	Y	N	N	CH	Y	N	N

OTHER INFORMATION

Design capacity = 75,000 cf/yr. RCRA, TSCA.

Plan date operation - FY04.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Waste will be contact handled. Waste reading over a few mR/hr will be rejected.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Work is focused on: (a) characterization of waste intended for this treatment, and (b) process development (bench scale testing). (b is contained in ADS 8205).

OTHER PERMIT LIMITATIONS & COMMENTS

Project is pre-conceptual state - no permitting activity at present.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Although there are no regulatory drivers for radioactivity removal from waste, such processing opens up the possibility of on-site disposal under DOE Order 5820.2A.

TECHNOLOGY

Acid Dissolution

MATRIX

Inorganic Sludges/Particulates
Soils
Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Oak Ridge Res. Mixed Waste Treatment Facility		
SYSTEM:	00219, MW Treatment Facility - Fixation/Stabilization	M3/YR	735
CONTACT:	R. R. Kimmitt 615-576-0077		0

— System Capacity —

ADS NUMBER: 8207/8205

STATUS: Planned Unapproved

-TRU-				RCRA CHARACTERISTICS					
HLW	LLW	TRU	ALPHA HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	N	N	N

OTHER INFORMATION

Design capacity = 25,000 cf/yr. RCRA, TSCA.

Plan date operation - FY04.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Waste will be contact handled. Waste reading over a few mR/hr will be rejected.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Work is focused on: (a) characterization of waste intended for this treatment, and (b) process development (bench scale testing) (b is contained in ADS 8205).

OTHER PERMIT LIMITATIONS & COMMENTS

No permitting activity is on-going, since the project is in the pre-conceptual stage.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

This process will be necessary for selected wastes to meet the requirements of RCRA LDR (40 CFR 268). Wastes to be treated are also listed in the OR LDR FFC Agreement with EPA Region 4, signed 6-12-92.

TECHNOLOGY

Stabilization

MATRIX

Inorganic Sludges/Particulates
Cemented Solids
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Lab Packs with Metals
Elemental Lead
Beryllium Dust
Batteries (Lead Acid, Cadmium)
Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Oak Ridge Res. Mixed Waste Treatment Facility		
SYSTEM:	00527, MW Treatment Facility - Incineration	M3/YR	882 0
CONTACT:	R. R. Kimmitt 615-576-0077		

—— System Capacity ——

ADS NUMBER: 8207

STATUS: Planned Unapproved

-TRU-										RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	Y	Y	N	N		

OTHER INFORMATION

Design capacity = 30,000 cf/yr. NESHAPS, Air, RCRA, TSCA.

Plan date operation - FY04.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Waste will be contact handled. Waste reading over a few mR/hr will be rejected.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Engineering studies will be conducted in early FY 94 to evaluate the alternatives of building new solid mixed waste incineration capability in Oak Ridge or enhancing the capabilities of the existing TSCA incinerator.

OTHER PERMIT LIMITATIONS & COMMENTS

Since this activity is in the Engineering study stage, there is no on-going permitting activity.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Incineration is identified as BDAT for some mixed waste. This process is needed for compliance with RCRA LDR and for compliance with the OR LDR FFC Agreement with EPA Region 4, signed 6-12-92.

TECHNOLOGY

Incineration

MATRIX

Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids
Organic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Lab Packs without Metals
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Oak Ridge Res. Mixed Waste Treatment Facility		
SYSTEM:	00542, MW Treatment Facility - Sizing & Segregation	M3/YR	2206
CONTACT:	R. R. Kimmitt 615-576-0077		0

— System Capacity —

ADS NUMBER: 8207/8205

STATUS: Planned Unapproved

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	Y	N	Y	N		

OTHER INFORMATION

Design capacity = 75,000 cf/yr. RCRA, TSCA.

Plan date operation - FY04.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Waste will be contact handled. Waste reading over a few mR/hr will be rejected.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Work in FY 94 will be included in the decontamination development effort of ADS 8205.

OTHER PERMIT LIMITATIONS & COMMENTS

There are no on-going permitting activities.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Size segregation and size reduction are pre-treatment steps supporting decontamination, stabilization, and thermal desorption. Therefore, they represent necessary parts of the systems to bring OR mixed wastes into compliance with RCRA LDR and implement the OR LDR FFC Agreement.

TECHNOLOGY

Sizing/Segregation

MATRIX

Inorganic Sludges/Particulates
Cemented Solids
Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Lab Packs with Metals
Lab Packs without Metals
Batteries (Lead Acid, Cadmium)
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Oak Ridge Res. Mixed Waste Treatment Facility		
SYSTEM:	00529, MW Treatment Facility - Soil/Sludge Dewatering	M3/YR	2206
CONTACT:	R. R. Kimmitt	615-576-0077	0

—— System Capacity ——

ADS NUMBER: 8207/8205

STATUS: Planned Unapproved

-TRU-								—— RCRA CHARACTERISTICS ——		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	Y	N	Y	N

OTHER INFORMATION

Design capacity = 75,000 cf/yr. RCRA, TSCA.

Plan date operation - FY04.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Waste will be contact handled. Waste reading over a few mR/hr will be rejected.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Work on this process is included in the stabilization and thermal desorption development effort of ADS 8205.

OTHER PERMIT LIMITATIONS & COMMENTS

There is no on-going permitting activity.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Dewatering, as a pretreatment to stabilization or thermal desorption is part of the process to achieve compliance with RCRA LDR for mixed wastes (40 CFR 268).

TECHNOLOGY

Drying

MATRIX

Organic Sludges/Particulates
Inorganic Sludges/Particulates
Soil with <50% Debris
Soils
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Oak Ridge Res. Mixed Waste Treatment Facility		
SYSTEM:	00526, MW Treatment Facility - Surface Decontamination	M3/YR	500 0
CONTACT:	R. R. Kimmitt 615-576-0077		

— System Capacity —

ADS NUMBER: 8207/8205

STATUS: Planned Unapproved

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	Y	N	N	N

OTHER INFORMATION

Design capacity = 17,000 cf/yr. RCRA, TSCA.

Plan date operation - FY04.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Waste will be contact handled. Waste reading over a few mR/hr will be rejected.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Work is focused on: (a) identification and characterization of waste to be treated, and (b) process development (bench scale testing) (b is contained in ADS 8205).

OTHER PERMIT LIMITATIONS & COMMENTS

Since this project is in the pre-conceptual state, there is no on-going permitting activity.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Surface decontamination is appropriate technology for mixed waste that can be treated under the RCRA Debris Rule.

TECHNOLOGY

Decontamination

MATRIX

Heterogeneous Debris

Elemental Lead

Batteries (Lead Acid, Cadmium)

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Oak Ridge Res. Mixed Waste Treatment Facility		
SYSTEM:	00528, MW Treatment Facility - Thermal Desorption	M3/YR	10 0
CONTACT:	R. R. Kimmitt 615-576-0077		

— System Capacity —

ADS NUMBER: 8207/8205

STATUS: Planned Unapproved

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	Y	Y	Y	N	N		

OTHER INFORMATION

Waste will be contact handled. Waste reading over a few mR/hr will be rejected.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design capacity = 330 cf/yr. NESHAPS, Air, RCRA, TSCA.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Work is focused on: (a) waste identification and characterization, and (b) process development (bench scale testing) (b is contained in ADS 8205).

OTHER PERMIT LIMITATIONS & COMMENTS

The project is in the pre-conceptual stage, so no permitting activities are on-going.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

This process is BDAT for mercury-contaminated wastes under RCRA LDR, and is an economical alternative to incineration for organically-contaminated mixed waste. The process will be a significant part of the treatment plan for implementing the OR FFC Agreement with EPA Region 4, signed 6-12-92.

TECHNOLOGY

Thermal Desorption

MATRIX

Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids
Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soil with <50% Debris
Soils
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Plating Rinsewater Treatment Facility		
SYSTEM:	00221, Plating Rinsewater Treatment Facility	M3/YR	0 7575
CONTACT:	J. Prazniak 615-574-6873		

— System Capacity —

ADS NUMBER: 2201

STATUS: Existing Could be used for mixed waste

~~—TRU—~~				~~— RCRA CHARACTERISTICS —~~						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	N	N	N	N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
CWA	NPDES	State	12/01/93	12/31/98

OTHER INFORMATION

Design capacity = 2,000,000 gal/yr. Excess capacity = 1,500,000 gal/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

No radionuclides. Plating Rinsewater System is designed to treat dilute plating rinsewater contaminated with heavy metals. Does not treat cyanide. Presently discharges through a dedicated outfall. But the new NPDES permit, expected this October will combine the PRTF and CPCF discharges under one set of limits. The sludge from the system will be combined with the sludge for the CPCF mopwater system.

Sludge from treatment is F006 listed RCRA waste. Sludge is combined with sludge from other CPCF operations, and is stored at the Y-12 West End Treatment Facility sludge storage tanks.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

A criticality safety analysis and controls to assure that conditions under which criticality could occur do not exist. Could handle depleted U easily.

OTHER PERMIT LIMITATIONS & COMMENTS

New CWA permit is expected in 12-93. No capacity is expected to be specified on new permit. However, there will be mass limits on individual discharge parameters.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Operation of the PRTF is necessary to the extent that plating rinsewaters requiring treatment are generated. A new plating shop at Y-12 is under construction. The PRTF will receive waste from the new shop.

TECHNOLOGY

Cyanide Destruction

MATRIX

Organic Liquids
Aqueous Liquids

Filtration

Organic Liquids
Aqueous Liquids

Neutralization

Organic Liquids
Aqueous Liquids

Oxidation/Reduction

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Oak Ridge Y-12 Plant	DESIGN	PERMIT
FACILITY:	Waste Coolant Processing Facility		
SYSTEM:	00524, Waste Coolant Processing Facility	M3/YR	11363
CONTACT:	J. Prazniak		0
	615-574-6873		

— System Capacity —

ADS NUMBER: 2201

STATUS: Existing Could be used for mixed waste

-TRU-				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	N	N	N	N	N	N

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

The WCPF is a small extended-aeration activated sludge treatment system that treats biodegradable machine cutting coolants to remove BOD. The effluent from the facility is shipped to the Central Pollution Control Facility or West End Treatment Facility for further treatment. Sludge from the treatment facility is considered to be LLW (not RCRA-hazardous).

Under present requirements, only depleted uranium may be processed; no solutions with enriched uranium allowed. WCPF was operated under criticality safety control in the past and could do so again.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Criticality safety analysis and controls to insure that conditions conducive to criticality do not exist. Approximately \$1M in physical upgrades to facility so hazardous waste could be received.

OTHER PERMIT LIMITATIONS & COMMENTS

No permits are being pursued.

Effluent from treatment system is further treated at Central Pollution Control Facility/Mopwater System or West End Treatment Facility.

TECHNOLOGY

Biodegradation

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Oak Ridge Y-12 Plant
 FACILITY: West End Treatment Facility
 SYSTEM: 00224, Wastewater Treatment
 CONTACT: H. A. Valentine 615-576-1567

	DESIGN	PERMIT
MS/YR	0	9469

ADS NUMBER:
 STATUS: Existing Operating

— System Capacity —
 PERMIT [Other UNIT of MEASURE]: 2.5 million gal/yr

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	N	Y	Y	Y

PERMIT STATUS INFORMATION				
REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
CWA/NPDES	Final	TDEC	05/21/85	/ /
CAA	Final	TDEC	06/11/93	05/01/95

OTHER INFORMATION

Design capacity = 2.5 million gal/yr. Excess capacity = 4.0 million gal/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Permit by rule facility discharging effluent through an NPDES permit. Treat listed hazardous wastewaters of F001, F002, F006, F007.

OTHER PERMIT LIMITATIONS & COMMENTS

Capacity of treatment system not limited by the permits.

CWA (NPDES) permit renewal pending.

TECHNOLOGY

Biodenitrification

MATRIX

Organic Liquids

Aqueous Liquids

Chemical Precipitation

Organic Liquids

Aqueous Liquids

Neutralization

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Paducah Gaseous Diffusion Plant	DESIGN	PERMIT
FACILITY:	C-400-C Evaporator		
SYSTEM:	00314, C-400-C Nickel Stripper Evaporation Unit	M3/YR	0 0
CONTACT:		—— System Capacity ——	

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

-TRU-										—— RCRA CHARACTERISTICS ——		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	N	N	N	N		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

This unit is undergoing RCRA closure and will be disassembled. This unit should be removed from the list.

TECHNOLOGY

Evaporation

MATRIX

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Paducah Gaseous Diffusion Plant	DESIGN	PERMIT
FACILITY:	C-400-D Lime Precipitation Unit		
SYSTEM:	00262, C-400-D Lime Precipitation Unit	M3/YR	136
CONTACT:	R. G. Kuehn		0
	502-441-6913	— System Capacity —	

ADS NUMBER:

STATUS: Existing Operating

-TRU-				- RCRA CHARACTERISTICS -						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	N	N	Y	N

OTHER INFORMATIONSYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Current plans are to RCRA close this unit.

The solids collected during precipitation area still considered to be MLLW and must be further treated.

TECHNOLOGY

Chemical Precipitation

MATRIX

Aqueous Liquids

Neutralization

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Paducah Gaseous Diffusion Plant	<u>DESIGN</u>	<u>PERMIT</u>
FACILITY:	Mixed Waste Treatment Facility		
SYSTEM:	00553, Mixed Waste Treatment Facility	M3/YR	0 0
CONTACT:		—— System Capacity ——	
ADS NUMBER:			
STATUS:	Planned Unapproved		

—TRU—
—— RCRA CHARACTERISTICS ——
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS
 IGNITABLE CORROSIVE REACTIVE

OTHER INFORMATION

Design capacity to be determined.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Feasibility study in the planning stages. Funding for the study are included for 1994.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Could be used to enhance the requirements of the LDR FFCA and the FFC Act.

TECHNOLOGY

MATRIX

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Paducah Gaseous Diffusion Plant	DESIGN	PERMIT
FACILITY:	Wastewater Treatment System		
SYSTEM:	00321, Wastewater Treatment System	M3/YR	0 0
CONTACT:	H. A. Valentine 615-574-7083		

—— System Capacity ——

ADS NUMBER:

STATUS: Planned Unapproved

-TRU-										—— RCRA CHARACTERISTICS ——		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	N	N	N	N		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

All funding, design, and associated issues for this facility went away following the site operational transition. This unit should be removed from the list.

TECHNOLOGY

Chemical Precipitation

Filtration

Neutralization

MATRIX

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Pantex Plant
 FACILITY: Building 11-15A
 SYSTEM: 00108, Building 11-15A
 CONTACT: J. Evett 505-845-4445

DESIGN PERMIT

M3/YR 132 0

System Capacity

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS RCRA CHARACTERISTICS
 N Y N Y CH Y Y Y N N N

PERMIT STATUS INFORMATION

REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA None TWC / / / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Encapsulation treatment is currently not permitted. A pilot study was completed by the Pantex Plant that showed that LDR treatment standards were achieved by epoxy-based encapsulation processes. It is currently unknown whether encapsulation will be pursued by the plant as a treatment option for debris or other MLLW.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

It has not been determined whether the plant will pursue this technology. Requires permit modifications, equipment procurement, staffing, NEPA, SAR.

OTHER PERMIT LIMITATIONS & COMMENTS

Dates if issuance/application submission for permits are not applicable at this time.

TECHNOLOGY

Immobilization

MATRIX

Aqueous Liquids
 Organic Sludges/Particulates
 Inorganic Sludges/Particulates
 Cemented Solids
 Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Inorganic Solids
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Pantex Plant	DESIGN	PERMIT
FACILITY:	Building 11-9		
SYSTEM:	00107, Building 11-9	M3/YR	43
CONTACT:	J. Evett		0
	505-845-4445		

— System Capacity —

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	Y	CH	Y	Y	Y	N	N	N		

— PERMIT STATUS INFORMATION —					DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE		
RCRA	None	TWC	/ /	/ /		

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Encapsulation treatment is currently not permitted. A pilot study was completed by the Pantex Plant that showed that LDR treatment standards were achieved by epoxy-based encapsulation processes. It is currently unknown whether encapsulation will be pursued by the plant as a treatment option for debris or other MLLW.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Permit modification, equipment procurement, staffing, training, NEPA, SAR. It is not determined that the plant will pursue this treatment.

OTHER PERMIT LIMITATIONS & COMMENTS

Date of issuance/application submission for permits not determined at this time.

TECHNOLOGY

Immobilization

MATRIX

Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids
Organic Debris
Inorganic Debris
Heterogeneous Debris
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Pantex Plant	DESIGN	PERMIT
FACILITY:	Burning Ground		
SYSTEM:	00354, One Cage, One Tray, and One Pan	M3/YR	4 4
CONTACT:	J. Evett 505-845-4445		

— System Capacity —

ADS NUMBER: 3104

STATUS: Existing Could be used for mixed waste

—TRU—								— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	Y	CH	N	N	N	Y	N	N

— PERMIT STATUS INFORMATION —				DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE	
RCRA	Part B App	TWC	09/30/93	/	/

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Under interim status, the Pantex Plant is authorized to burn HE-contaminated LLW. Currently, no mixed waste is treated at the burning grounds. At some time in the future, the plant may choose to treat MLLW at the burning grounds. Currently, the Texas Water Commission is reviewing a RCRA Permit modification, that if approved, will permit the plant to burn MLLW at the Burning Ground.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Upgrading burning area/equipment is required. Texas Water Commission approval of RCRA permit. NEPA approval.

TECHNOLOGY

Thermal Destruction

MATRIX

Inorganic Sludges/Particulates
Inorganic Debris
Explosives

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Pantex Plant	DESIGN	PERMIT
FACILITY:	Hazardous Waste Treatment & Processing Facility		
SYSTEM:	00109, Hazardous Waste Treatment & Processing Facility	M3/YR	500
CONTACT:	J. Evett	505-845-4445	500

—— System Capacity ——

ADS NUMBER: 3103

STATUS: Planned Approved

-TRU-								RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	Y	CH	N	N	N	N	N	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
31 TAC 335	State	Texas	10/31/94	/ /

OTHER INFORMATION

Plan date operation - FY98.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Estimated construction completion is FY 95/96.

CDR completed 9-30-93.

NEPA submitted 9-30-93.

OTHER PERMIT LIMITATIONS & COMMENTS

Requires approval from Texas.

TECHNOLOGY

Immobilization

MATRIX

Aqueous Liquids
Inorganic Sludges/Particulates
Cemented Solids
Organic Debris
Inorganic Debris
Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Portsmouth Gaseous Diffusion Plant
 FACILITY: Waste Treatment Facility
 SYSTEM: 00331, Waste Treatment Facility
 CONTACT: T. A. Acox 614-897-6415

DESIGN PERMIT
 MS/YR 0 0
 — System Capacity —

ADS NUMBER: 6201

STATUS: Planned Unapproved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y N N N

— PERMIT STATUS INFORMATION —
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA None State / / / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Project not funded.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Funding is budgeted beginning in FY96. Project scope is undefined; feasibility study has not been funded.

OTHER PERMIT LIMITATIONS & COMMENTS

A RCRA permit application will be required and a RCRA permit issued prior to construction of the facility. There has been no funding to date to support this effort.

TECHNOLOGY
 Unspecified

MATRIX
 Unspecified

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Portsmouth Gaseous Diffusion Plant	DESIGN	PERMIT
FACILITY:	X-616 Liquid Effluent Control Facility		
SYSTEM:	00512, X-616 Liquid Effluent Control Facility	M3/YR	0 7400000
CONTACT:	T. A. Acox 614-897-6415		

— System Capacity —

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

—TRU—				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	N	N	N	N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	09/23/91	07/29/94

OTHER INFORMATION

Design capacity = 28,000 m3/day.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

In June 1991, the recirculating cooling water was changed from a chromate-based system to a phosphate-based system. Subsequently, the NPDES permit was modified to require no treatment of the phosphated water. Currently, the X-616 facility is nonoperational. Any changes in the operational status would require the appropriate permitting authority.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Facility will need modifications and permit authority for operation.

OTHER PERMIT LIMITATIONS & COMMENTS

The operations at the X-616 facility have been discontinued upon agreement with Ohio EPA if the monitoring conditions of the permit are met.

Monitoring requirements for this facility include Cr, Cu, Fe, Ni, Zn, chloroform, trichloroethylene, oil and grease, total nonfilterable residue and total dissolved solids with specified limits on concentrations and mass loading. It is anticipated that more stringent limits will be imposed upon issuance of the new NPDES permit in 1994.

Additionally, monitoring requirements are imposed for mercury and acute toxicity to Ceriodaphnia and Pimephales promelas. While there are currently no specified limits for these parameters, it is anticipated that limits will be imposed upon issuance of the new NPDES permit in 1994.

TECHNOLOGY

Chemical Precipitation

Filtration

MATRIX

Aqueous Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Portsmouth Gaseous Diffusion Plant
 FACILITY: X-622 Groundwater Treatment Facility
 SYSTEM: 00310, X-622 Groundwater Treatment Facility
 CONTACT: T. A. Acox 614-897-6415

DESIGN PERMIT

M3/YR 78576 78576

System Capacity

ADS NUMBER: 6801

STATUS: Existing Operating

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N Y N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	09/23/91	07/29/94

OTHER INFORMATION

Currently treating mixed waste from groundwater sampling and remediation from around X-749 landfill unit.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

NPDES Permit limits use of the facility to treatment to groundwater collected from around X-749 facility.

OTHER PERMIT LIMITATIONS & COMMENTS

Effluent concentrations limited to 10 ug/l for trichloroethene and an average of 25 ug/l for 1,2-dichloroethene. Other requirements will have to be negotiated with the State. In order to efficiently meet effluent criteria, waste acceptance criteria have been established.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Facility is operated to treat groundwater related to Interim Remedial Measures mandated by the Consent Order agreement with US EPA and the Consent Decree with the Ohio Attorney General.

TECHNOLOGY

Carbon Adsorption

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Portsmouth Gaseous Diffusion Plant	DESIGN	PERMIT
FACILITY:	X-622T Groundwater Treatment Facility		
SYSTEM:	00315, X-622T Groundwater Treatment Facility	M3/YR	69628
CONTACT:	T. A. Acox	614-897-6415	69628

— System Capacity —

ADS NUMBER: 6801

STATUS: Planned Approved

-TRU-								RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	N	N	Y	N	N	N

PERMIT STATUS INFORMATION

			DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	09/23/91	07/29/94

OTHER INFORMATION

Treatment limited to groundwater from X-705 basement french drain system.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Limited to groundwater from X-705 and X-700 facilities.

OTHER PERMIT LIMITATIONS & COMMENTS

Effluent concentrations limited to 10 ug/l (average and maximum) for trichloroethene. Other requirements will have to be negotiated with the State. In order to efficiently meet effluent criteria, waste acceptance criteria have been established.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Facility is operated to treat groundwater related to Interim Remedial Measures mandated by the Consent Decree with the Ohio Attorney General.

TECHNOLOGY

Carbon Adsorption

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Portsmouth Gaseous Diffusion Plant
FACILITY: X-623 Groundwater Treatment Facility
SYSTEM: 00316, X-623 Groundwater Treatment Facility
CONTACT: T. A. Acox 614-897-6415

DESIGN **PERMIT**

M3/YR 99470 99470

— System Capacity —

ADS NUMBER:

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: / /

CONSTRUCTION COMPLETION DATE: /

—TRU—
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS — RCRA CHARACTERISTICS —
 IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N Y N N N

PERMIT STATUS INFORMATION

REGULATION PERMIT TYPE REG AGENCY APPLICATION SUBMITTED RENEWAL DATE
 NPDES Final State / / / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

System currently under construction. Influent flow limited to groundwater from X-701B Holding Pond area, purge water from plantsite groundwater wells, and groundwater from other plantsite RFI/CMS activities.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Facility is operated to support the closure plan for the X-701B Holding Pond. Facility will also provide support to requirements under the US EPA Consent Order and Ohio Consent Decree.

TECHNOLOGY

Carbon Adsorption

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Portsmouth Gaseous Diffusion Plant	DESIGN	PERMIT
FACILITY:	X-624 Groundwater Treatment Facility		
SYSTEM:	00308, X-624 Groundwater Treatment Facility	M3/YR	99470
CONTACT:	T. A. Acox 614-897-6415		99470

— System Capacity —

ADS NUMBER: 6801

STATUS: Existing Operating

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	Y	N	N	N		

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	09/23/91	07/29/94

OTHER INFORMATION

Treating mixed waste from groundwater sampling and groundwater from remediation activities from X-701B Interim Measures Trench.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Limited to treatment of groundwater and related liquids. Five (5) mg solvent/liter maximum influent.

OTHER PERMIT LIMITATIONS & COMMENTS

Effluent concentrations limited to 26 ug/l (average) and 69 ug/l (maximum) for trichloroethene. Other requirements will have to be negotiated with the State. In order to efficiently meet effluent criteria, waste acceptance criteria have been established.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Facility is operated to treat groundwater related to Interim Remedial Measures mandated by the Consent Order agreement with US EPA and the Consent Decree with the Ohio Attorney General.

TECHNOLOGY

Air Stripping

Carbon Adsorption

MATRIX

Aqueous Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Portsmouth Gaseous Diffusion Plant	<u>DESIGN</u>	<u>PERMIT</u>
FACILITY:	X-701E Groundwater Treatment Facility		
SYSTEM:	00307, X-701E Groundwater Treatment Facility	M3/YR	99470 120000
CONTACT:	T. A. Acox 614-897-6415		

— System Capacity —

ADS NUMBER: 6801

STATUS: Existing Operating

<u>-TRU-</u>										<u>RCRA CHARACTERISTICS</u>		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	Y	N	N	N		

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	09/23/91	07/29/94

OTHER INFORMATION

Treating mixed waste from groundwater sampling, groundwater from remediation activities, and accumulated rainfall in X-701B Holding Pond area.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Limited to treatment of groundwater and related waters. Facility operations will cease when X-623 Groundwater Treatment Facility (now under construction) becomes operational.

OTHER PERMIT LIMITATIONS & COMMENTS

Influent flow is limited to groundwater and rainfall collected in X-701B Holding Pond.

Effluent concentrations limited to 10 ug/l for trichloroethene and an average of 25 ug/l for 1,2-dichloroethene. Other requirements will have to be negotiated with the State. In order to efficiently meet effluent criteria, waste acceptance criteria have been established.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Facility is operated to support the closure plan for the X-701B Holding Pond.

TECHNOLOGY

Carbon Adsorption

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Portsmouth Gaseous Diffusion Plant	DESIGN	PERMIT
FACILITY:	X-705 Decontamination Facility		
SYSTEM:	00313, Microfiltration	M3/YR	3000
CONTACT:	T. A. Acox 614-897-6415		3000

—— System Capacity ——

ADS NUMBER:

STATUS: Existing Operating

-TRU-										RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	EXPLOSIVE	REACTIVE		
N	Y	N	N	CH	Y	N	N	N	Y	N		

PERMIT STATUS INFORMATION				DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE	
NPDES	Final	State	09/23/91	07/29/94	

OTHER INFORMATION

Treating mixed waste from cleaning and decontamination operations from all facilities on site.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Limited to site decontamination and cleaning solutions by NPDES permits.

Operations are limited by nuclear criticality. Operational agreements limits concentration in storage to 500 mg U/liter and to 150 mg U/liter in the first stage pH adjustment. Additional agreement limits total U238 in sludge containers to 200 grams/55-gal drum.

OTHER PERMIT LIMITATIONS & COMMENTS

Monitoring requirements for the facility include Cr, Fe, Ni, Zn, N (as NH₄, NO₃, NO₂ and total), oil and grease, and trichloroethene; however, there are no specified limits. It is anticipated that limits will be imposed upon issuance of the new NPDES permit in 1994.

Influent flows are limited to liquids from plantsite cleaning and decontamination operations.

TECHNOLOGY

Filtration

MATRIX

Aqueous Liquids

Neutralization

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Portsmouth Gaseous Diffusion Plant	DESIGN	PERMIT
FACILITY:	X-705 Decontamination Facility		
SYSTEM:	00311, Uranium Recovery and Raffinate Treatment System	M3/YR	150
CONTACT:	T. A. Acox 614-897-6415		150

ADS NUMBER:

STATUS: Existing Operating

-TRU-								RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	N	N	Y	N

PERMIT STATUS INFORMATION

REGULATION		PERMIT TYPE	REG AGENCY	D E PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
NPDES	Final	State	09/23/91	07/29/94	

OTHER INFORMATION

Influent stream limited to uranium bearing solutions from specific operations.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

NPDES permit limits treatment and decontaminated cleaning solutions. Administrative controls require economic analysis for solutions.

Nuclear criticality agreements limit U238 to 200 grams per container (1 cubic yd). Also limited to uranium concentration of 5 mg effluent from ion exchange unit.

OTHER PERMIT LIMITATIONS & COMMENTS

Monitoring requirements for this facility include Cr, Fe, Ni, Zn, N (as NH₄, NO₃) with specified limits on concentrations and mass loading. It is anticipated that more stringent limits will be imposed upon issuance of the new NPDES permit in 1994.

TECHNOLOGY

Biodenitrification

MATRIX

Aqueous Liquids

Filtration	Aqueous Liquids

Ion Exchange	Aqueous Liquids

Liquid Extraction

Neutralization	Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Quadrex Environmental, Gainesville, FL
 FACILITY: Quadrex Environmental
 SYSTEM: 00545, Incineration of Scintillation Liquids
 CONTACT: Kathy Garener 904-373-6066

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER:

STATUS: Existing Operating Commercial

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS
 N Y N N CH N N Y Y Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part A	State	09/28/90	09/27/95
RML	Final	State	06/04/93	10/30/95

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

OTHER PERMIT LIMITATIONS & COMMENTS

RCRA ID # FLD 980 711 071. Permit/Certification No. HO 01-169480 permit to operate a tank and a container storage area.

RML - Radioactive Materials License No. 1354-1.

TECHNOLOGY

Incineration

MATRIX

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Ramp Industries, Denver, CO
 FACILITY: Ramp Industries
 SYSTEM: 00514, Ramp Industries
 CONTACT: John Lucas 303-480-1509

DESIGN PERMIT

M3/YR 0 0

— System Capacity —

ADS NUMBER:

STATUS: Existing Operating Commercial

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y N Y Y N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCA	Final	CDH	06/21/93	10/30/92
RCRA	Part A App	State	01/26/88	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

OTHER PERMIT LIMITATIONS & COMMENTS

RCA - Radiation Control Act Title 25, Article 11, CRS 1989.

Radioactive Materials License No. Colorado 523-01.

Renewal application submitted prior to 10/30/92.

EPA ID No. COD 980 718 985. Part A application includes container storage and treatment in tanks.

TECHNOLOGY

Compaction

MATRIX

Organic Debris
 Inorganic Debris
 Lab Packs with Metals
 Inorganic Solids
 Organic Solids

Decontamination

Organic Debris
 Inorganic Debris
 Inorganic Solids
 Organic Solids

Macroencapsulation

Inorganic Debris
 Calcine Solids
 Inorganic Solids

Shredding

Organic Debris
 Inorganic Solids
 Organic Solids

Solidification

Organic Liquids
 Aqueous Liquids
 Organic Sludges/Particulates

Stabilization

Inorganic Sludges/Particulates
Soil with <50% Debris
Soils
Beryllium Dust

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Soil with <50% Debris
Soils

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Advanced Size Reduction Facility: Building 776
 SYSTEM: 00014, Unit 62, Advanced Size Reduction Facility
 CONTACT: Bob Griffis 303-966-4934

M3/YR

1819

0

System Capacity

ADS NUMBER: 3821

PERMIT [Other UNIT of MEASURE]: Solids:1.3 tons/hr

STATUS: Existing Could be used for mixed waste

— TRU — RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH N N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	11/02/89	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design capacity = 2,080 tons/yr. System exists and is planned for future use, year to be determined. No Rocky Flats Plant mixed waste streams have yet been identified for processing in this system.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

System is non-operational due to major upgrades - repairs.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit strictly prohibits receipt of offsite waste.

TECHNOLOGY

Size Reduction

MATRIX

Organic Debris

Inorganic Debris

	<u>DESIGN</u>	<u>PERMIT</u>
M3/YR	1819	0

----- System Capacity -----
 PERMIT (Other UNIT of MEASURE): 130,060 gal/hour

— PERMIT STATUS INFORMATION

Organic Liquids
Aqueous Liquids
Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Building 374
 SYSTEM: 00007, Process Waste Treatment Facility: Building 374
 CONTACT: Bob Griffis 303-966-4934

DESIGN PERMIT

K3/YR 149000 0

System Capacity

ADS NUMBER: 3821

PERMIT [Other UNIT of MEASURE]: 4835 gal/hour

STATUS: Existing Operating

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH N N N N Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	06/08/90	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Upgrades to system are in design phase with plan date of operation - FY98. System will treat MTRU/MLLW. Future capacity to treat liquid wastes is to be determined.

OTHER PERMIT LIMITATIONS & COMMENTS

Can only accept waste generated onsite at RFP. Liquid waste fed to the evaporator must contain less than 13,500 picocuries/liter.

TECHNOLOGY

Deactivation

MATRIX

Aqueous Liquids
 Inorganic Sludges/Particulates

Decontamination

Aqueous Liquids
 Inorganic Sludges/Particulates

Evaporation

Aqueous Liquids
 Inorganic Sludges/Particulates

Immobilization

Aqueous Liquids
 Inorganic Sludges/Particulates

Neutralization

Aqueous Liquids
 Inorganic Sludges/Particulates

Solidification

Aqueous Liquids
 Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Building 374/774 Salt And Sludge Treatment		
SYSTEM:	00343, Building 374/774 Salt And Sludge Treatment	MG/YR	0 0
CONTACT:	Scott Miya 303-273-6027		

— System Capacity —

ADS NUMBER: 3830/3822

STATUS: Planned Approved

KEY DECISION STATUS: KD-0

DATE STATUS ACHIEVED: 08/01/93

CONSTRUCTION COMPLETION DATE: 09/99

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	Y	N	Y	N	N	N		

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	/ /	/ /
NPDES	App	EPA	/ /	/ /

OTHER INFORMATION

Design capacity to be determined. System 4A - Salt Treatment - Planned Unapproved. System 4B - Sludge Treatment - Planned Approved.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Salt and Sludge Treatment Building 374 and 774 is Treatment System 4A and 4B in the Implementation Model. Line Item Year - 4A is FY97. Line Item Year - 4B is FY96. The Building 374/774 Salt and Sludge Treatment System (CTMP Systems 4A and 4B) immobilization technologies are yet to be determined. Immobilization in System 4B will be achieved via microwave solidification or polymer solidification or cementation.

Waste Codes: D006, D008, F001, F002, F003, F005A, F006, F007, and F009.

System 4A will treat ignitable wastes and waste code D001. Nitrate salts may be oxidizer.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

System 4B conceptual design 60% completed. Immobilization technologies are yet to be determined. Microwave melting, polymer, and cement solidification are candidates. Hot bench scale testing of each technology scheduled for FY94.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

The Immobilization technology which will be used has not yet been determined, but will be either cementation or polymer solidification. Bench scale testing of actual waste began in FY93 with polymer and cement.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B to be applied for (System 4A submittal date - 1/97. System 4B submittal date - 1/96).

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Proposed facility is under the CTMP. CTMP is an enforceable plan per compliance agreement between EPA & DOE, the LDR FFCA II.

TECHNOLOGY

Immobilization

MATRIX

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Building 776 Low-Level Mixed Waste Baler		
SYSTEM:	00013, Building 776 Low-Level Mixed Waste Baler	MS/YR	0
CONTACT:	Bob Griffis 303-966-4934		0

— System Capacity —

ADS NUMBER: 3821

STATUS: Existing Could be used for mixed waste

<u>—TRU—</u>								<u>— RCRA CHARACTERISTICS —</u>		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	N	N	N	N	N	N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA			/ /	/ /

OTHER INFORMATION

Design capacity = 1,056 tons/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

System exists and is planned for future use, year to be determined. No Rocky Flats Plant mixed waste streams have been identified for processing in this system.

Waste Codes: F001, F002, and F005A.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

The inherent contamination control problem in room 144 of Bldg 776 has to be remedied. The need for this baler, above and beyond the capabilities of the Supercompactor, must be established.

OTHER PERMIT LIMITATIONS & COMMENTS

This unit has been removed from the RCRA Part A permit. Change to Interim Status submitted to State, but not approved. Would require permitting. No plans to do so at present.

TECHNOLOGY

Compaction

MATRIX

Organic Debris
Inorganic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Chip Cementation: Building 447		
SYSTEM:	00020, Chip Cementation: Building 447	M3/YR	5 0
CONTACT:	Bob Griffis 303-966-4934		

ADS NUMBER:

—— System Capacity ——
 PERMIT [Other UNIT of MEASURE]: 1100 gal/day

STATUS: Existing Could be used for mixed waste

<u>—TRU—</u>								<u>—— RCRA CHARACTERISTICS ——</u>		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	N	N	N	N	N	N

<u>—— PERMIT STATUS INFORMATION ——</u>				
REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	06/08/90	/ /

OTHER INFORMATIONSYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

System exists and is planned for future use, year to be determined.

Waste Codes: D008C, F001, and F002

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Non-operational. Pending closure.

OTHER PERMIT LIMITATIONS & COMMENTS

Part A has specific waste and quantities identified.

No offsite waste accepted.

TECHNOLOGY

Solidification

Stabilization

MATRIX

Inorganic Debris

Inorganic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Evaporator Upgrade and Waste System Evaporator		
SYSTEM:	00544, Evaporator Upgrade and Waste System Evaporator	M3/YR	0 0
CONTACT:	Tom Johnson 303-966-6404		

_____ System Capacity _____

ADS NUMBER:

STATUS: Planned Unapproved

-TRU-										RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	Y	N	N	N		

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA			/ /	/ /

OTHER INFORMATION

The Evaporator Upgrade project will be completed in FY94.

The Waste System Evaporator project will be completed in two phases.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Upgrade project would replace worn and obsolete components of the multiple-effect evaporator.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit would need to be modified.

TECHNOLOGY

Evaporation

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Fabric Filtration: Buildings 444,447, and 460		
SYSTEM:	00006, Fabric Filtration: Buildings 444,447, and 460	M3/YR	12128
CONTACT:	Bob Griffis 303-966-4934		0

— System Capacity —

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 2000 gal/hour

STATUS: Existing Operating

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	N	N	N	N	N	N

— PERMIT STATUS INFORMATION —

				DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE	
RCRA	Interim	State	11/26/86	/ /	

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Permitted capacity = 12,128 m3/year, Normal operating capacity = 3,411 m3/year, and Available capacity = 8,717 m3/year. This is a currently operating system.

Filter system utilizes filter paper resulting in waste paper that is collected in 55-gallon drums.

OTHER PERMIT LIMITATIONS & COMMENTS

460 permitted for hazardous only.

No offsite waste allowed.

Part A has specific wastes and quantities identified.

TECHNOLOGY

Filtration

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Low-Level Mixed Waste Baler: Building 889		
SYSTEM:	00339, Low-Level Mixed Waste Baler: Building 889	M3/YR	0 0
CONTACT:	Bob Griffis 303-966-4934		

— System Capacity —

ADS NUMBER: 3821

STATUS: Existing Could be used for mixed waste

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	N	N	N	N	N	N		

— PERMIT STATUS INFORMATION —

			DATE PERMIT ISSUED OR
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED RENEWAL DATE
RCRA	Interim	State	/ / / /

OTHER INFORMATION

Design capacity = 1,056 tons/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

System exists and is planned for future use, year to be determined. No Rocky Flats Plant mixed waste streams have yet been identified for processing in this system.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

The Bldg 889 facility upgrades must be completed. In addition, all required safety documentation must be completed and approved.

OTHER PERMIT LIMITATIONS & COMMENTS

This unit has been removed from the Part A permit. Change to Interim Status submitted to State but not approved. Would require permitting. No plans to do so at present.

TECHNOLOGY

Compaction

MATRIX

Organic Debris
Inorganic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Misc. Waste Handling & Immob.: Bldg 774		
SYSTEM:	00338, Misc. Waste Handling & Immob.: Bldg 774	M3/YR	42 0
CONTACT:	Bob Griffis 303-966-4934		

—— System Capacity ——

ADS NUMBER: 3821

PERMIT [Other UNIT of MEASURE]: 55 gal/day

STATUS: Existing Operating

—TRU—				—— RCRA CHARACTERISTICS ——						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	Y	Y	CH	N	N	N	N	Y	N

—— PERMIT STATUS INFORMATION ——

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	11/02/89	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

This is a currently operating system.

RCRA codes MW Stream RFP 1066 D002A, D002B, and D007.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit strictly limits receipt of offsite waste.

TECHNOLOGY

Solidification

MATRIX

Aqueous Liquids

Stabilization

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Miscellaneous Waste Form Treatment		
SYSTEM:	00341, Miscellaneous Waste Form Treatment	M3/YR	250
CONTACT:	Lee Lucero 303-966-5667		0

— System Capacity —

ADS NUMBER: 3822

STATUS: Planned Approved

KEY DECISION STATUS: KD-0

DATE STATUS ACHIEVED: 08/01/93

CONSTRUCTION COMPLETION DATE: 12/01

<u>-TRU-</u>										<u>RCRA CHARACTERISTICS</u>			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE			
N	Y	N	Y	CH	Y	Y	Y	Y	Y	Y	Y	Y	

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	/ /	/ /

OTHER INFORMATION

TDD Number 3822.F11.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Is System 3 in the CTMP Implementation model. LI Year - FY96. Waste codes: D001B, D002A, D002B, D003D, D003E, D004, D005, D006B, D007, D008B, D009, D009C, D010, D011, F001, F002, F003, F005A, and P015.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Conceptual design - 60% completed.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B applied for.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Proposed facility is under the CTMP. CTMP is an enforceable plan per compliance agreement between EPA & DOE, the LDR FFCA II.

TECHNOLOGY

Immobilization

MATRIX

Aqueous Liquids
Inorganic Sludges/Particulates
Inorganic Debris
Heterogeneous Debris
Beryllium Dust
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Mixed Residue Treatment
 SYSTEM: 00345, Mixed Residue Treatment
 CONTACT: Don Dustin 303-966-3809

DESIGN PERMIT
 M3/YR 0 0
 — System Capacity —

ADS NUMBER:
 STATUS: Planned Unapproved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y B Y Y Y Y Y Y

— PERMIT STATUS INFORMATION —
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA None State / / / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Further waste characterization and examination of technology alternatives is required to correctly identify treatment pathways for all the mixed residue waste forms.

Waste codes: D001, D002, D003, D006, D007, D008, F001, F002, F003, F005

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Current efforts consist of developing a program and schedule for the removal of all mixed residues covered by the June 1993 Settlement Agreement and Compliance Order on Consent.

OTHER PERMIT LIMITATIONS & COMMENTS

All required permit applications still need to be submitted. Schedule not determined.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Facility is covered under the June 1993 Settlement Agreement and Compliance Order on Consent which orders implementation of the "Mixed Residue Reduction Program."

TECHNOLOGY

Actinide Separation

MATRIX

Aqueous Liquids
 Inorganic Sludges/Particulates
 Inorganic Debris

Oxidation Process

Aqueous Liquids
 Inorganic Sludges/Particulates
 Inorganic Debris

Surface Decontamination

Aqueous Liquids
 Inorganic Sludges/Particulates
 Inorganic Debris
 Unspecified

Volume Reduction

Aqueous Liquids
 Inorganic Sludges/Particulates
 Inorganic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Modular Storage Tanks and Building 910 Evaporator		
SYSTEM:	00543, Evaporation/Immobilization	M3/YR	0 0
CONTACT:	Bob Griffis 303-966-4934		

ADS NUMBER: 3821

STATUS: Existing Operating

— System Capacity —
 PERMIT [Other UNIT of MEASURE]: 54,000 gal/day

—TRU—				— RCRA CHARACTERISTICS —						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	N	N	N	N	N	N

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State/EPA	/ /	/ /

OTHER INFORMATION

Design capacity = 50,000 gal/day.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Waste codes: F001, F002, F003, F005A, F006, F007, and F009.

OTHER PERMIT LIMITATIONS & COMMENTS

Air permit limits NOx production from evaporator's natural gas fired engines. State has allowed use as part of interim measure - treating groundwater only. Other uses not permitted.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Part of OU4-IM/IRA.

TECHNOLOGY

Evaporation

MATRIX

Aqueous Liquids

Immobilization

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Organic and Sludge Immob. System: Building 774
 SYSTEM: 00005, Organic & Sludge Immobilization Sys.: Bldg 774
 CONTACT: Bob Griffis 303-966-4934

DESIGN PERMIT

M3/YR 270 0

System Capacity

ADS NUMBER: 3821

STATUS: Existing Operating

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH N N Y Y N N

PERMIT STATUS INFORMATION
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR APPLICATION SUBMITTED RENEWAL DATE
 RCRA Interim State 07/01/88 / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

This is a currently operating treatment system, employing concentration to solidify oils contaminated with organics.

TECHNOLOGY

Immobilization

MATRIX

Organic Liquids
 Organic Sludges/Particulates

Solidification

Organic Liquids
 Organic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Pondcrete Solidification Process: Building 788
 SYSTEM: 00018, Pondcrete Solidification Process: Building 788
 CONTACT: Bob Griffiths 303-966-4934

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 20,800 tons/yr

STATUS: Existing Could be used for mixed waste

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH N N N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	06/08/90	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Design capacity = 20,800 tons/yr. This system exists and is planned for future use, year to be determined. Final waste form does not meet LDR requirements. The Halliburton MUS B&C Process Trains are planned to replace this facility.

Mixed waste stream to be treated is solar pond waste with a matrix of aqueous liquid contaminated with toxic organics and metals without mercury. Waste codes: D0068, F001, F002, F003, F005A, F006, F007, and F009.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

This system to be replaced by another planned/approved system. Non-operational due to pending closure.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit strictly prohibits receipt of offsite waste.

TECHNOLOGY

Solidification

MATRIX

Aqueous Liquids

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Pondcrete/Saltcrete Reprocessing Facility: 750PAD
 SYSTEM: 00016, Pondcrete/Saltcrete Reprocessing Fac.: 750PAD
 CONTACT: Bob Griffis 303-966-4934

DESIGN PERMIT
 M3/YR 0 0

System Capacity

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y N N N N N N

PERMIT STATUS INFORMATION
 REGULATION PERMIT TYPE REG AGENCY APPLICATION SUBMITTED RENEWAL DATE
 RCRA None State / / / /

OTHER INFORMATION

Design capacity = 6,608 tons/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility exists and is planned for future use, year to be determined. System also reprocesses previously solidified pondcrete and saltcrete.

Designed to meet LDR requirements but testing of final waste form indicates does not meet LDR requirements.

Waste codes: D006B, F001, F002, F003, F005A, F006, F007, and F009.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Permit modification. Some system refurbishment and upgrades.

OTHER PERMIT LIMITATIONS & COMMENTS

No current schedule to submit permit modification.

TECHNOLOGY

Solidification

MATRIX

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Pondcrete/Saltcrete Reprocessing Facility: 904PAD
 SYSTEM: 00017, Pondcrete/Saltcrete Reprocessing Fac.: 904PAD
 CONTACT: Bob Griffin 303-966-4934

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

-TRU- RCRA CHARACTERISTICS -
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N M CH Y N N M M M

PERMIT STATUS INFORMATION

REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA None State / / / /

OTHER INFORMATION

Design capacity = 3,312 tons/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility exists and is planned for future use, year to be determined. System also reprocesses previously solidified pondcrete and saltcrete.

Designed to meet LDR requirements but testing of final waste form indicates does not meet LDR requirements.

Waste codes: D0068, F001, F002, F003, F005A, F006, F007, and F009.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Permit modification. Some system refurbishment and upgrades.

OTHER PERMIT LIMITATIONS & COMMENTS

No current schedule to submit permit modification.

TECHNOLOGY

Solidification

MATRIX

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Size Reduction Vault: Building 776
 SYSTEM: 00012, Size Reduction Vault: Building 776
 CONTACT: Bob Griffis 303-966-4934

DESIGN PERMIT

MS/YR 0 0

System Capacity

ADS NUMBER: 3821

PERMIT [Other UNIT of MEASURE]: .44 tons/hr

STATUS: Existing Operating

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y Y Y CH N N N N N N

PERMIT STATUS INFORMATION

REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR APPLICATION SUBMITTED RENEWAL DATE
 RCRA Interim State 11/02/89 / /

OTHER INFORMATION

Design capacity = 704 tons/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

This is a currently operating treatment system. Waste streams listed include Inorganic Debris with toxic organics and metals without mercury contamination; Inorganic Debris with toxic organic contaminants; and Elemental Lead with toxic metals without mercury contaminants.

Waste codes: D001F, D002C, D003A, D003E, D005, D006B, D007, D008B, D008C, F001, F002, and F005A.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit prohibits receipt of offsite waste without CDH Permission (Class 1 modification). Permit may need to be modified for all waste codes listed above.

TECHNOLOGY

Size Reduction

MATRIX

Organic Debris
 Inorganic Debris
 Elemental Lead

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Solidified Bypass Sludge Treatment		
SYSTEM:	00342, Solidified Bypass Sludge Treatment	MG/YR	0 0
CONTACT:	Scott Miya 303-273-6027		

— System Capacity —

ADS NUMBER: 3822

STATUS: Planned Unapproved

-TRU-								RCRA CHARACTERISTICS			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
N	Y	N	N	CH	Y	N	Y	Y	N	N	

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	/ /	/ /

OTHER INFORMATION

Design capacity to be determined.

Plan date operation - FY06.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Solidified Bypass Sludge Treatment is System #2 in the CTMP Implementation Model. Line Item Year FY97. The Solidified Bypass Sludge Treatment System (CTMP System 2) technologies for immobilization are not yet determined. Immobilization will be completed via microwave solidification or polymer solidification or cementation.

Waste codes: D0068, D0088, F001, F002, and F005A.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Specific technology for immobilization has not yet been determined. Candidate technologies for immobilization are microwave solidification, polymer solidification, and cementation.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B to be applied for upon completion of Title I engineering (scheduled 8/97).

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

LLM Solidified Bypass Sludge Treatment System is a proposed treatment facility under the CTMP. CTMP is an enforceable plan per compliance agreement between EPA and DOE, the LDR FFCA II.

TECHNOLOGY

Immobilization

MATRIX

Inorganic Sludges/Particulates

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Rocky Flats Plant
 FACILITY: Solvent Contaminated Waste System
 SYSTEM: 00340, Solvent Contaminated Waste System
 CONTACT: Frank Humbert 303-273-6160

DESIGN PERMIT

M3/YR 0 0

System Capacity

ADS NUMBER: 3822

STATUS: Planned Unapproved

HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS RCRA CHARACTERISTICS
 IGNITABLE CORROSIVE REACTIVE

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	State	/ /	/ /
CAA	None	EPA	/ /	/ /

OTHER INFORMATION

System 1A - Thermal (TDD 3822.F17). System 1B - Non-Thermal.

Design capacity is to be determined.

For both systems, excess chemicals, PCB solids, and cutoff sludge fall under the "multiple" matrix.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Solvent Contaminated Waste System - Thermal is Treatment System 1A in the CTMP Implementation Model. Line Item Year is FY97. The Solvent Contaminated Waste Treatment System (CTMP System 1A) technologies for thermal destruction and immobilization are yet to be determined. Destruction will be completed via a fluidized bed unit or controlled air incinerator or plasma arc furnace, and immobilization will be completed via microwave solidification or polymer solidification of cementation.

Waste codes: D001A, D001B, D001E, D001F, D002A, D002B, D002C, D003A, D003B, D003D, D003E, D004, D005, D006B, D007, D008, D008B, D009A, D009B, D009C, D009D, D010, D011, D038, D040, F001, F002, F003, F005A, F006, F009, P015, P029, P074, P087, P098, P104, P106, P112, and U123.

Solvent Contaminated Waste System - Non-Thermal is Treatment System 1B in the CTMP Implementation Model. Line Item Year is FY99. The Solvent Contaminated Waste Treatment System (CTMP System 1B) technologies for non-thermal destruction and immobilization are yet to be determined. Destruction will be completed via UV oxidation or mediated electrochemical oxidation or biodegradation or catalytic oxidation or supercritical water oxidation or chemical oxidation (alkaline chlorination) or surface organics removal, and immobilization will be completed via microwave solidification or polymer solidification or cementation.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

System 1A - Fluidized bed incineration technology undergoing cold surrogate testing at a full scale test incinerator in FY94.

System 1B - Alternatives to incineration technologies undergoing cold surrogate testing in FY94: Mediated Electrochemical Oxidation; Supercritical Water Oxidation; Catalytic Wet Chemical Oxidation; and Packed Bed Reactor/Silent Discharge Plasma.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit still to be submitted. (System 1A - Scheduled 1/97). (System 1B - Part B permit modification submittal scheduled 2/2003).

System 1B would be constructed if System 1A is not selected.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Proposed facility is under the CTMP. The CTMP is an enforceable plan per compliance agreement between EPA and DOE, the LDR FFCA II.

TECHNOLOGY

Non-Thermal

MATRIX

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids
Inorganic Debris
Heterogeneous Debris
Other - Multiple

Thermal Destruction

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids
Inorganic Debris
Heterogeneous Debris
Other - Multiple

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Supercompaction & Repackaging Fac.: Bldg 776		
SYSTEM:	00019, Supercompaction & Repackaging Fac.: Bldg 776	M3/YR	949
CONTACT:	Bob Griffis		0
	303-966-4934		

— System Capacity —

ADS NUMBER: 3821

PERMIT [Other UNIT of MEASURE]: .45 tons/hour

STATUS: Existing Operating

—TRU—				— RCRA CHARACTERISTICS —					
HLW	LLW	TRU	ALPHA HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	Y	Y	CH	N	N	N	N	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	State	/ /	/ /

OTHER INFORMATION

Waste streams are from the inorganic debris matrix contaminated with toxic organics.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Waste codes: F001, F002, and F005A.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Hot test complete. MTRU - okay to start. MLLW - waiting to receive interim status.

TECHNOLOGY

Compaction

MATRIX

Organic Debris
Inorganic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Rocky Flats Plant	DESIGN	PERMIT
FACILITY:	Surface Organic Removal		
SYSTEM:	00344, Leaded Gloves, and Bulk Lead Treatment	M3/YR	100 0
CONTACT:	Lee Lucero 303-966-5667		

— System Capacity —

ADS NUMBER: 3822

STATUS: Planned Unapproved

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	Y	Y	Y	Y

OTHER INFORMATION

System 5 of the CTMP.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Line Item Year is FY97. The Surface Organics Removal Treatment System (CTMP System 5) technologies for separation and immobilization are yet to be determined. Separation will be achieved via hot nitrogen stripping or volatilization/steam cleaning, supercritical CO2 extraction, or low temperature thermal stripping. Immobilization will be achieved via polymer solidification and/or cementation.

The multiple matrix includes PCB solids, cut off sludge. EPA codes: D001A, D001F, D002, D003A, F001, F002, F003, F005A, D004, D005, D006B, D007, D008B, D008C, D009, D010, and D011.

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Separation and immobilization technologies to be determined. Cold surrogate testing of all technologies proceeding in FY94, with hot bench scale testing and/or TSE in FY95.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit application to be submitted 7/98.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Proposed facility is under the CTMP. CTMP is an enforceable plan per compliance agreement between EPA and DOE, the LDR FFCA II.

TECHNOLOGY

Immobilization

MATRIX

Inorganic Sludges/Particulates
Cemented Solids
Inorganic Debris
Heterogeneous Debris
Elemental Lead
Other - Multiple

Separation

Inorganic Sludges/Particulates
Cemented Solids
Inorganic Debris
Heterogeneous Debris
Elemental Lead
Other - Multiple

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Sandia National Lab - New Mexico	DESIGN	PERMIT
FACILITY:	Radioactive & Mixed Waste Management Facility		
SYSTEM:	00213, Radioactive & Mixed Waste Management Facility	M3/YR	1 0
CONTACT:	Mona Williams 505-845-5405		

— System Capacity —

ADS NUMBER: 1133

STATUS: Existing Could be used for mixed waste

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	Y	CH	Y	N	Y	Y	Y	Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	NMED	09/07/90	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

FONSI was just received. Building is complete. Some upgrades and modifications are being made. FY95 start date is possible depending on start-up requirements. The equipment for the intended treatment has not been purchased yet.

This is primarily a repackaging, characterizing, type facility. Very little treatment is going to occur. The treatments listed in their "Draft" Part B application are: Compaction, Shredding & Bailing, Solidification and Stabilization of liquid waste (Bench Scale), Decontamination and waste segregation, pH neutralization (Bench Scale) and Packaging.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Facility upgrades, staffing/training, safety documentation, permit modification, equipment procurement.

OTHER PERMIT LIMITATIONS & COMMENTS

Will not treat: HLW, Compressed Gases, RH Waste, Explosives/Pyrotechnics.

RCRA permit renewal is under modification.

TECHNOLOGY

Compaction

Decontamination

Neutralization

Solidification

Stabilization

MATRIX

Aqueous Liquids

Batteries (Lead Acid, Cadmium)

Cemented Solids

Elemental Lead

Inorganic Sludges/Particulates

Organic Debris

Inorganic Debris

Heterogeneous Debris

Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	Consolidated Incineration Facility		
SYSTEM:	00143, CIF Ashcrete	MS/YR	0 0
CONTACT:	D. Salem 803-557-7222		

— System Capacity —

ADS NUMBER:

STATUS: Planned Approved

KEY DECISION STATUS: KD-3   DATE STATUS ACHIEVED: 12/01/92   CONSTRUCTION COMPLETION DATE: 03/95

—TRU—								— RCRA CHARACTERISTICS —			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
N	Y	N	Y	RH	Y	Y	N	N	N	N	

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Final	SCDHEC/EPA	09/30/92	/ /

OTHER INFORMATION

Design capacity = 1,000 drums/year.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Construction is 22 percent complete.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit restricts capacity to onsite needs only.

The CIF / ncrete system is under a RCRA permit as part of the incineration system. The permit allows the CIF Ashcrete system to receive only ash from the incinerator and ash quench liquid for treatment. Therefore, many of the matrices listed below are not appropriate for the CIF Ashcrete system.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included in LDR FFCA between DOE and EPA. CIF milestones are: (1) submit quarterly construction reports to EPA; (2) notify EPA 90 days prior to a trial burn & processing of waste; (3) submit semi-annual operational status reports to EPA; (4) begin production runs of LDR waste within 39 months of the effective date of the CIF RCRA permit; and (5) within 90 days of start of production runs, propose to EPA annual waste processing rate milestones & completion date for processing of LDR waste.

Per agreement between EPA, DOE, & SCDHEC, the LDR FFCA will be amended by Nov. 30, 1993 to allow for development of a strategic solid waste plan to support the FFCA process. At this time, CIF schedule will not be modified. However, any changes in funding or strategy may impact CIF schedule contained in LDR FFCA.

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Cemented Solids
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Beryllium Dust
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Savannah River Site
 FACILITY: Consolidated Incineration Facility (CIF)
 SYSTEM: 00531, CIF Blowdown Treatment System
 CONTACT: D. Salem 803-557-7222

DESIGN 0 PERMIT 0
 M3/YR

— System Capacity —

ADS NUMBER:

STATUS: Planned Unapproved

—TRU—
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS — RCRA CHARACTERISTICS —
 IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y N N N N

— PERMIT STATUS INFORMATION —

REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA None SCDHEC/EPA / / / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, UNAPPROVED SYSTEM

Vendor contracts for blowdown treatment were awarded on April 5, 1993.

OTHER PERMIT LIMITATIONS & COMMENTS

Contract activity - terms of contract limit capacity to SRS waste.

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	Consolidated Incineration Facility		
SYSTEM:	00361, CIF Incinerator - Liquid Feed System	M3/YR	8000000
CONTACT:	D. Salem		6500
	803-557-7222	_____ System Capacity _____	

ADS NUMBER:

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: 12/01/92

CONSTRUCTION COMPLETION DATE: 03/95

<u>-TRU-</u>								<u>RCRA CHARACTERISTICS</u>		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	Y	Y	Y	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Final	SCDHEC/EPA	09/30/92	/ /

OTHER INFORMATION

Design capacity (liquid) = 4.5 million kg/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility operates under a RCRA Part B permit. Waste generation and treatment covered under the Land Disposal Restriction Federal Facility Compliance Agreement. New wastes must be listed with the EPA.

Permit has BTU limits and flow rate limits. BTU limits for high heat value liquids waste = 7,500 to 20,000 BTU/lb. Flow rate limit = 687 lbs/hr. BTU limits for low heat value liquid waste = 0 - 7,000 btu/lbs. Flow rate limit = 950 lbs/hr. There are restrictions on receipt of heavy metals. Permit prohibits acceptance of off-site waste.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Construction is 22 percent complete.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit restricts capacity to onsite needs only.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included in LDR FFCA between DOE and EPA. CIF milestones are: (1) submit quarterly construction reports to EPA; (2) notify EPA 90 days prior to a trial burn & processing of waste; (3) submit semi-annual operational status reports to EPA; (4) begin production runs of LDR waste within 39 months of the effective date of the CIF RCRA permit; and (5) within 90 days of start of production runs, propose to EPA annual waste processing rate milestones & completion date for processing of LDR waste.

Per agreement between EPA, DOE & SCDHEC, the LDR FFCA will be amended by Nov. 30, 1993 to allow for development of a strategic solid waste plan to support the FFCA process. At this time, CIF schedule will not be modified. However, any changes in funding or strategy may impact CIF schedule contained in LDR FFCA.

TECHNOLOGY

Incineration

MATRIX

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Savannah River Site
 FACILITY: Consolidated Incineration Facility
 SYSTEM: 00142, CIF Incinerator - Solid Feed System
 CONTACT: D. Salem 803-557-7222

DESIGN PERMIT

MS/YR 0 100424

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 2025 pounds/hour

STATUS: Planned Approved

KEY DECISION STATUS: KD-3

DATE STATUS ACHIEVED: 12/01/92

CONSTRUCTION COMPLETION DATE: 03/95

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y Y N Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Final	SCDHEC/EPA	09/30/92	/ /

OTHER INFORMATION

Design capacity (solid) = 4 million kg/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility operates under RCRA Part B permit. Waste generation and treatment covered under the Land Disposal Restriction Federal Facility Compliance Agreement. New wastes must be listed with the EPA.

Permit has BTU limits and flow rate limits. Permit limits for solid waste feed system - flow rate = 687 lbs/hr. There are restrictions on receipt of heavy metals. Container requirements limit containers to cardboard boxes 21 inches square and between 25 and 75 lbs. Permit prohibits acceptance of off-site waste.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Construction is 22 percent complete.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit restricts capacity to onsite needs only.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included in LDR FFCA between DOE and EPA. CIF milestones are: (1) submit quarterly construction reports to EPA; (2) notify EPA 90 days prior to a trial burn & processing of waste; (3) submit semi-annual operational status reports to EPA; (4) begin production runs of LDR waste within 39 months of the effective date of the CIF RCRA permit; and (5) within 90 days of start of production runs, propose to EPA annual waste processing rate milestones & completion date for processing of LDR waste.

Per agreement between EPA, DOE & SCDHEC, the LDR FFCA will be amended by Nov. 30, 1993 to allow for development of a strategic solid waste plan to support the FFCA process. At this time, CIF schedule will not be modified. However, any changes in funding or strategy may impact CIF schedule contained in LDR FFCA.

TECHNOLOGY

Incineration

MATRIX

Organic Sludges/Particulates
 Inorganic Sludges/Particulates
 Organic Debris
 Reactive Metals

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	DWPF Vitrification Plant		
SYSTEM:	00141, DWPF Vitrification Plant	MS/YR	18570
CONTACT:	K. Z. Wolf 803-557-1082		4542

— System Capacity —

ADS NUMBER:

STATUS: Planned Approved

—TRU—								— RCRA CHARACTERISTICS —			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
Y	N	N	N	RH	Y	Y	Y	N	Y	N	

— PERMIT STATUS INFORMATION —

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
CWA-SCPCA	Final	State	08/17/92	/ /

OTHER INFORMATION

DWPF testing will be conducted through 1995.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility will treat waste under a state industrial wastewater permit. Waste generation and treatment covered under the Land Disposal Restriction Federal Facility Compliance Agreement. New waste must be listed with the EPA.

No organics can be received into the melter.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

DWPF is undergoing chemical runs testing. Need completion of startup testing, completion of planned modifications, and completion of ORR (operational readiness review) prior to treating MW.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit to operate was issued 08-17-92. Operating Permit No. 16783.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

FFCA Startup Date.

FFA Waste Removal Schedule.

Per agreement between EPA, DOE, and SCDHEC, the LDR FFCA will be amended by November 30, 1993 to allow for development of a strategic solid waste plan to support the FFCA processes. At this time, DWPF schedule will be modified to support a revised startup date.

TECHNOLOGY

Vitrification

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Savannah River Site
 FACILITY: F/H Area Effluent Treatment Facility
 SYSTEM: 00300, F/H Area Effluent Treatment Facility
 CONTACT: T. Syfert 803-557-0320

DESIGN PERMIT

M3/YR 600000 400000

System Capacity

ADS NUMBER:

STATUS: Existing Operating

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N RH Y Y Y Y Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
CWA	Final	State	09/30/88	/ /
SCPCA	Final	State	09/30/88	/ /
NPDES	Final	State	09/30/88	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Permit number 12870. Facility operates under NPDES permit. Permit limits discharge to 400,000 m3/yr. Present discharge 16,000 m3/yr.

Facility cannot accept PCBs or fissile material under permit conditions. Metals treated include Cr, Hg, Pb, Zn & Cu plus radionuclides H3, Cr51, Co58, Co60, Zn65, Sr89, Sr90, Y90, Ru106, Sb124, Sb125, I131, Cs134, Cs137, Ce141, Y91, Nb95, Zr95, Ru103, Ce144, Pr144, Pm147, Pu239. Facility is capable of accepting influent wastewaters via tankers or drums. New influents require special permits and approvals from the state.

TECHNOLOGY

Carbon Adsorption

Chemical Precipitation

Evaporation

Filtration

Ion Exchange

Mercury Absorption

Neutralization

Reverse Osmosis

MATRIX

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	Hazardous Waste/Mixed Waste Disposal Facility		
SYSTEM:	00147, Acid Leaching and Chemical Precipitation Unit	MG/YR	1432 1432
CONTACT:	J. Damelio 803-725-6479		

—— System Capacity ——

ADS NUMBER:

STATUS: Planned Approved

-TRU-								RCRA CHARACTERISTICS			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE	
N	Y	N	N	CH	Y	Y	N	N	N	N	

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	SCDHEC/EPA	/ /	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Proposed facility. RCRA permit application not yet submitted. Project rescoping has required DOE-HQ review and approval. NEPA-EA in draft. However, EIS requirement is under review. If it is determined that an EIS is needed, a significant delay will occur.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Due to project rescoping (necessary to align HW/MW TB processes with LDR "third third" rule promulgation), a baseline change proposal has been submitted to DOE-HQ to change cost, schedule & scope. Until finalized, the project schedule cannot be determined. At such time, when a defined path forward is available, KD status will be determined.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included as part of the LDR FFCA between DOE & EPA. Current milestone requires project schedule submittal for the HW/MW TB to the EPA by 11/30/93. As agreed upon in a Sept. 13, 1993 meeting with the EPA, DOE and the State, the LDR FFCA will be amended before 11/30/93. The HW/MW TB milestone will be replaced with milestones directed at the development of a strategic plan which will support the FFCA process.

TECHNOLOGY

Acid Leaching

MATRIX

Inorganic Debris

Chemical Precipitation

Inorganic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Savannah River Site
 FACILITY: Hazardous Waste/Mixed Waste Disposal Facility
 SYSTEM: 00144, Macroencapsulation Unit - SRS
 CONTACT: J. Damelio 803-725-6479

DESIGN PERMIT

M3/YR 73 73

System Capacity

ADS NUMBER:

STATUS: Planned Approved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y N Y N N N

PERMIT STATUS INFORMATION

DATE PERMIT ISSUED OR
 REGULATION PERMIT TYPE REG AGENCY APPLICATION SUBMITTED RENEWAL DATE
 RCRA None SCDHEC/EPA / / / /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Proposed facility. RCRA permit application not yet submitted. Project rescoping has required DOE-HQ review and approval. NEPA-EA in draft. However, EIS requirement is under review. If it is determined that an EIS is needed, a significant delay will occur.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Due to project rescoping (necessary to align HW/MW TB processes with LDR "third third" rule promulgation), a baseline change proposal has been submitted to DOE-HQ to change cost, schedule & scope. Until finalized, the project schedule cannot be determined. At such time, when a defined path forward is available, KD status will be determined.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included as part of the LDR FFCA between DOE & EPA. Current milestone requires project schedule submittal for the HW/MW TB to the EPA by 11/30/93. As agreed upon in a Sept. 13, 1993 meeting with the EPA, DOE and the State, the LDR FFCA will be amended before 11/30/93. The HW/MW TB milestone will be replaced with milestones directed at the development of a strategic plan which will support the FFCA process.

TECHNOLOGY

Macroencapsulation

MATRIX

Organic Debris
 Inorganic Debris
 Heterogeneous Debris
 Elemental Lead
 Inorganic Solids
 Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	Hazardous Waste/Mixed Waste Disposal Facility		
SYSTEM:	00146, Mercury Amalgamation Unit	MS/YR	1 1
CONTACT:	J. Damelio 803-725-6479		

—— System Capacity ——

ADS NUMBER:

STATUS: Planned Approved

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	Y	N	N	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	SCDHEC/EPA	/ /	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Proposed facility. RCRA permit application not yet submitted. Project rescoping has required DOE-HQ review and approval.

NEPA-EA in draft. However, EIS requirement is under review. If it is determined that an EIS is needed, a significant delay will occur.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Due to project rescoping (necessary to align HW/MW TB processes with LDR "third third" rule promulgation), a baseline change proposal has been submitted to DOE-HQ to change cost, schedule & scope. Until finalized, the project schedule cannot be determined. At such time, when a defined path forward is available, KD status will be determined.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included as part of the LDR FFCA between DOE & EPA. Current milestone requires project schedule submittal for the HW/MW TB to the EPA by 11/30/93. As agreed upon in a Sept. 13, 1993 meeting with the EPA, DOE and the State, the LDR FFCA will be amended before 11/30/93. The HW/MW TB milestone will be replaced with milestones directed at the development of a strategic plan which will support the FFCA process.

TECHNOLOGY

Amalgamation

MATRIX

Inorganic Debris
Liquid Mercury

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	Hazardous Waste/Mixed Waste Disposal Facility		
SYSTEM:	00145, Mercury Roasting/Retorting And Recovery Unit	M3/YR	17
CONTACT:	J. Damelio	803-725-6479	17

— System Capacity —

ADS NUMBER:

STATUS: Planned Approved

—TRU—										— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE		
N	Y	N	N	CH	Y	Y	Y	N	N	N		

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	SCDHEC/EPA	/ /	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Proposed facility. RCRA permit application not yet submitted. Project rescoping has required DOE-HQ review and approval.

NEPA-EA in draft. However, EIS requirement is under review. If it is determined that an EIS is needed, a significant delay will occur.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Due to project rescoping (necessary to align HW/MW TB processes with LDR "third third" rule promulgation), a baseline change proposal has been submitted to DOE-HQ to change cost, schedule & scope. Until finalized, the project schedule cannot be determined. At such time, when a defined path forward is available, KD status will be determined.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included as part of the LDR FFCA between DOE & EPA. Current milestone requires project schedule submittal for the HW/MW TB to the EPA by 11/30/93. As agreed upon in a Sept. 13, 1993 meeting with the EPA, DOE and the State, the LDR FFCA will be amended before 11/30/93. The HW/MW TB milestone will be replaced with milestones directed at the development of a strategic plan which will support the FFCA process.

TECHNOLOGY

Hg Roasting/Retorting

MATRIX

Inorganic Sludges/Particulates

Inorganic Debris

Soils

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Savannah River Site
 FACILITY: Hazardous Waste/Mixed Waste Disposal Facility
 SYSTEM: 00151, Size Reduction
 CONTACT: J. Damelio 803-725-6479

DESIGN PERMIT

M3/YR 2398 2398

System Capacity

ADS NUMBER:

STATUS: Planned Approved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y N N N N

PERMIT STATUS INFORMATION
 REGULATION PERMIT TYPE REG AGENCY DATE PERMIT ISSUED OR
 APPLICATION SUBMITTED RENEWAL DATE
 RCRA None SCDHEC/EPA / / / /

OTHER INFORMATION

Normal and operating capacity is 500 m3/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Proposed facility. RCRA permit application not yet submitted. Project rescoping has required DOE-HQ review and approval.

NEPA-EA in draft. However, EIS requirement is under review. If it is determined that an EIS is needed, a significant delay will occur.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Due to project rescoping (necessary to align HW/MW TB processes with LDR "third third" rule promulgation), a baseline change proposal has been submitted to DOE-HQ to change cost, schedule & scope. Until finalized, the project schedule cannot be determined. At such time, when a defined path forward is available, KD status will be determined.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included as part of the LDR FFCA between DOE & EPA. Current milestone requires project schedule submittal for the HW/MW TB to the EPA by 11/30/93. As agreed upon in a Sept. 13, 1993 meeting with the EPA, DOE & the State, the LDR FFCA will be amended before 11/30/93. The HW/MW TB milestone will be replaced with milestones directed at the development of a strategic plan which will support the FFCA process.

TECHNOLOGY

Compaction

MATRIX

Organic Debris
 Inorganic Debris
 Heterogeneous Debris

Shredding

Inorganic Debris
 Heterogeneous Debris

Size Reduction

Cemented Solids
 Organic Debris
 Inorganic Debris
 Heterogeneous Debris

Sorting

Organic Debris
 Inorganic Debris
 Heterogeneous Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	Hazardous Waste/Mixed Waste Disposal Facility		
SYSTEM:	00149, Soil Washing	M3/YR	340
CONTACT:	J. Damelio	803-725-6479	340

—— System Capacity ——

ADS NUMBER:

STATUS: Planned Approved

-TRU-								RCRA CHARACTERISTICS		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	Y	Y	N	N	N

PERMIT STATUS INFORMATION

			DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE
RCRA	None	SCDNEC/EPA	/ /	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Proposed facility. RCRA permit application not yet submitted. Project rescoping has required DOE-HQ review and approval.

NEPA-EA in draft. However, EIS requirement is under review. If it is determined that an EIS is needed, a significant delay will occur.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Due to project rescoping (necessary to align HW/MW TB processes with LDR "third third" rule promulgation), a baseline change proposal has been submitted to DOE-HQ to change cost, schedule & scope. Until finalized, the project schedule cannot be determined. At such time, when a defined path forward is available, KD status will be determined.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included as part of the LDR FFCA between DOE & EPA. Current milestone requires project schedule submittal for the HW/MW TB to the EPA by 11/30/93. As agreed upon in a Sept. 13, 1993 meeting with the EPA, DOE & the State, the LDR FFCA will be amended before 11/30/93. The HW/MW TB milestone will be replaced with milestones directed at the development of a strategic plan which will support the FFCA process.

TECHNOLOGY

Soil Washing

MATRIX

Soil with <50% Debris

Soils

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Savannah River Site
 FACILITY: Hazardous Waste/Mixed Waste Disposal Facility
 SYSTEM: 00148, Stabilization/Solidification Unit
 CONTACT: J. Damelio 803-725-6479

DESIGN PERMIT

M3/YR 484 484

System Capacity

ADS NUMBER:

STATUS: Planned Approved

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 N Y N N CH Y Y Y N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	SCDHED/EPA	/ /	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Proposed facility. RCRA permit application not yet submitted. Project rescoping has required DOE-HQ review and approval.

NEPA-EA in draft. However, EIS requirement is under review. If it is determined that an EIS is needed, a significant delay will occur.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Due to project rescoping (necessary to align HW/MW TB processes with LDR "third third" rule promulgation), a baseline change proposal has been submitted to DOE-HQ to change cost, schedule & scope. Until finalized, the project schedule cannot be determined. At such time, when a defined path forward is available, KD status will be determined.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included as part of the LDR FFCA between DOE & EPA. Current milestone requires project schedule submittal for the HW/MW TB to the EPA by 11-30-93. As agreed upon in a Sept. 13, 1993 meeting with the EPA, DOE & the State, the LDR FFCA will be amended before 11-30-93. The HW/MW TB milestone will be replaced with milestones directed at the development of a strategic plan which will support the FFCA process.

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids
 Inorganic Sludges/Particulates
 Inorganic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	M-Area Liquid Effluent Treatment Facility		
SYSTEM:	00027, M-Area Liquid Effluent Treatment Facility	M3/YR	480
CONTACT:	J. B. Pickett 803-725-3838		0

ADS NUMBER:

STATUS: Existing Operating

— System Capacity —
 PERMIT [Other UNIT of MEASURE]: .038 million gal/dy

—TRU—								— RCRA CHARACTERISTICS —		
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	N	Y	Y	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Part A App	SCDHEC	01/01/86	/ /
RCRA	Part B App	SCDHEC	07/26/88	09/01/92
NPDES	Final	SCDHEC	07/03/85	/ /

OTHER INFORMATION

An end-of-pipe industrial wastewater treatment facility. The facility is a close-coupled system which can accept direct transfers of wastewater from piped laboratories or permitted transfer containers. No radioactive materials other than uranium are included in the permit.

The LETF wastewater permit limits the chemical constituents to those used in the M-Area aluminum forming and metal plating operations. The primary constituents are Ni, Al, and depleted U.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility operates under a state industrial wastewater permit. A portion of the facility, the M-Area Process Waste Interim Treatment/Storage Facility, operates under RCRA Interim Status. It is a part of the Land Disposal Restriction Federal Facility Compliance Agreement. Any new waste must be listed with the SCDHEC (NPDES permit modification) & EPA (LDR FFCA modification).

OTHER PERMIT LIMITATIONS & COMMENTS

The wastewater treatment system is permitted for 0.038 million gallons/day (about 26 gallons/minute). The waste storage tanks (RCRA) have a total capacity of about 8330 m3 (2.2 million gallons).

The wastewater permit specifies that only those effluents generated in M-Area, from facilities that are close-coupled to the LETF may be treated. Any other materials would require a modification to the wastewater permit, the interim status RCRA Part A, and the RCRA Part B (submitted).

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

The RCRA storage tanks are included in the LDR FFCA with EPA Region IV. The effective date was 3-13-91. It was modified 4-24-92. It is between DOE-SR & EPA. The key milestones are: (1) submit all permits needed to treat the stored wastes by 6/30/94; (2) start treatment of the LDR wastes within 180 days of permit approval.

TECHNOLOGY

Chemical Precipitation

Filtration

Flocculation

Neutralization

MATRIX

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

System Capacity

CONSTRUCTION COMPLETION DATE: 06/95

PERMIT STATUS INFORMATION

Date: 10/20/93

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	SRL Ion Exchange Treatment Probe		
SYSTEM:	00116, High Activity	M3/YR	210 210
CONTACT:	M. Spearman 803-725-8802		

ADS NUMBER: _____ **System Capacity** _____
STATUS: Existing Operating **PERMIT [Other UNIT of MEASURE]:** 55,482 gal/yr

-TRU-				RCRA CHARACTERISTICS			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS
Y	N	N	N	RH	Y	Y	Y
N	Y	N	N	RH	Y	Y	Y

PERMIT STATUS INFORMATION				DATE PERMIT ISSUED OR	
REGULATION	PERMIT TYPE	REG AGENCY	APPLICATION SUBMITTED	RENEWAL DATE	
RCRA	Interim	SCDHEC	/ /	/ /	

OTHER INFORMATION

The SRL (SRTC) Ion Exchange Probes for the High-activity tanks were installed in 1991. The waste that leaves the SRTC MWST is not usually hazardous, and therefore, treatment is generally not necessary. The RCRA Part A permit limits the throughput of the MWST treatment processes (High-activity and Low-activity combined) to 14,400 gallons/day (5,256,000 gallons/yr). The RCRA Part A permit also limits the total annual quantity of waste that is permitted to pass through the SRTC MWST to 457,299 gallons/yr (1,714 m³/yr). Because this number is lower, it limits the amount of waste that the Ion Exchange Probes can treat annually. From this total annual quantity, the treatment and design capacity of the SRL (SRTC) Ion Exchange Treatment Probes is 55,482 gallons/yr (210 m³/yr) for the high-activity waste.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

High and low activity ion exchange probes operate under interim status. Waste treatment is covered by the Land Disposal Restriction Federal Facility Compliance Agreement. Any new waste stream must be listed with the EPA.

Facility is a closed system operating under a waste acceptance criteria which is tied into operating practices at Savannah River Technology Center (Savannah River Laboratory) where the waste is generated.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit of facility that receives the discharge from the SRL tanks prohibits receipt of listed waste.

TECHNOLOGY

Ion Exchange

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: Savannah River Site
 FACILITY: SRL Ion Exchange Treatment Probe
 SYSTEM: 00301, Low Activity
 CONTACT: M. Spearman 803-725-8802

DESIGN PERMIT

m³/YR 1500 1500

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 396,300 gal/yr

STATUS: Existing Operating

-TRU-				RCRA CHARACTERISTICS			
HLW	LLW	TRU	ALPHA HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE CORROSIVE REACTIVE
N	Y	N	N	CH	Y	Y	Y
N	Y	N	N	CH	Y	Y	Y

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	SCDHEC	/ /	/ /

OTHER INFORMATION

The SRL (SRTC) Ion Exchange Probes for the Low-activity tanks were installed in 1992. The waste that leaves the SRTC MWST is not usually hazardous, and therefore, treatment is generally not necessary. The RCRA Part A permit limits the throughput of the MWST treatment processes (High-activity and Low-activity combined) to 14,400 gallons/day (5,256,000 gallons/yr). The RCRA Part A permit also limits the total annual quantity of waste that is permitted to pass through the SRTC MWST to 457,229 gallons/yr (1,714 m³/yr). Because this number is lower, it limits the amount of waste that the Ion Exchange Probes can treat annually. From this total annual quantity, the treatment and design capacity of the SRL (SRTC) Ion Exchange Treatment Probes is 396,300 gallons/yr (1,500 m³/yr) for the low-activity waste.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

High and low activity ion exchange probes operate under Interim Status. Waste treatment is covered by the Land Disposal Restriction Federal Facility Compliance Agreement. Any new waste stream must be listed with the EPA.

Facility is a closed system operating under a waste acceptance criteria which is tied into operating practices at Savannah River Technology Center (Savannah River Laboratory) where the waste is generated.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit prohibits receipt of listed waste of the facility that receives the discharge from the SRL tanks.

TECHNOLOGY

Ion Exchange

MATRIX

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	Transuranic Waste Facility		
SYSTEM:	00152, Transuranic Waste Facility	M3/YR	722
CONTACT:	B. A. Daugherty 803-725-6414		722

— System Capacity —

ADS NUMBER:

STATUS: Planned Approved

—TRU—					— RCRA CHARACTERISTICS —					
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	N	Y	Y	CH	Y	Y	Y	N	N	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Pending	EPA/SCDHEC	/ /	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility is in the planning stages. A RCRA permit application has not yet been submitted. NEPA-EA complete. However, evaluation is ongoing in regard to requirements for an EIS. A significant delay will be created if an EIS must be done.

Facility is designed to sort waste and repackage so that TRU waste destined for WIPP will meet the waste acceptance criteria. No actual treatment is performed.

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Pre-transition project - did not require KD approval.

Due to project cost escalation resulting from additional functional requirements, the DOE position not to perform treatment, and uncertainties associated with WIPP, the TWF has been split into 2 phases: Low Activity Tru Facility (LATF) and High Activity TRU Facility (HATF). Phase I is retrieval of TRU waste drums & LATF. Phase II is the HATF and is a separate line item. Retrieval is presently funded and will start Title I design in FY 94.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Included in the LDR FFCA between DOE and EPA. Current milestones are: (1) DOE-SR will retrieve & process TRU wastes (including LDR TRU wastes) and prepare that waste for certification & disposal at the WIPP; (2) DOE will submit a complete RCRA permit to SCDHEC by Nov. 30, 1993; (3) DOE-SR will begin construction of TWF within 90 days of the effective date of the permit; (4) DOE-SR will submit quarterly construction progress reports to EPA; (5) DOE-SR will notify EPA & SCDHEC 90 days prior to mixed waste processing; and (6) DOE-SR will begin preparing waste for shipment to WIPP within 60 months after the effective date of the RCRA permit.

As agreed upon in the Sept. 13, 1993 meeting with the EPA, DOE & the State, the LDR FFCA will be amended before 11/30/93. The TWF milestones will be replaced with milestones directed at the development of a strategic plan which will support the FFCA process.

TECHNOLOGY

Repackaging

MATRIX

Organic Liquids
Inorganic Sludges/Particulates
Organic Debris

Sorting

Organic Liquids
Inorganic Sludges/Particulates
Organic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Savannah River Site	DESIGN	PERMIT
FACILITY:	Z-Area Saltstone Facility		
SYSTEM:	00120, Z-Area Saltstone Facility	MG/YR	41000 41000
CONTACT:	K. Z. Wolf 803-557-1082		

— System Capacity —

ADS NUMBER:

STATUS: Existing Operating

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	RH	Y	Y	N	N	Y	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
CWA/SCPCA	Final	State	07/18/88	/ /

OTHER INFORMATION

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Facility operates under a state industrial wastewater permit for the treatment process and an industrial solid waste permit for the disposal vaults. Facility and waste stream are included under the Land Disposal Restriction Federal Facility Compliance Agreement. New waste streams must be identified to EPA.

Facility is excluded from RCRA under the totally enclosed treatment facility exclusion. The exclusion was granted contingent to the facility accepting only waste from the H-Area tank farm via a pipeline.

OTHER PERMIT LIMITATIONS & COMMENTS

Permit Number 12683.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

FFCA waste removal schedule.

FFCA.

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids

Inorganic Debris

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Scientific Ecology Group - Oak Ridge, TN	DESIGN	PERMIT
FACILITY:	Scientific Ecology Group - Oak Ridge, TN		
SYSTEM:	00517, SEG Incinerator - Commercial	M3/YR	0
CONTACT:	John Hess 615-220-1236		0

— System Capacity —

ADS NUMBER:

STATUS: Planned Approved

—TRU—										— RCRA CHARACTERISTICS —			
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE			
N	Y	N	N	CH	Y	N	Y	Y	N	N			

OTHER INFORMATION

Depending on dose rates/concentrations, waste streams containing transuranic alpha emitters could potentially be treated in this system. Some waste streams requiring Remote Handling also could potentially be treated in this system.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

To be determined during permitting process (1994/1995).

Radionuclides limitations are specified in our Tennessee Radioactive Materials Licenses. Limited isotopes: H-3 (limit in curies - 300.0); C-14 (limit in curies - 100.0); PO-210 (limit in curies - 10.0); RA-226 (limit in curies - 5.0); TH-232 (limit in curies 10.0); U-235 (limit of grams - 350.0); U-238 (limit in curies - 100.0); U-233 (limit of grams - 200.0); U-Other (limit in curies - 1.0); PU-238 (limit of grams - 200.0 < total Pu limit - 3.63 PU grams); PU-239; PU-240; PU-241; PU-242; AM-241 (limit in curies - 225.0); AT.NO. 3-83 (limit in curies - 360.0); AT.NO. 84-91 (limit in curies - 1.1); and AT.WT. >238 (limit in curies - 1.1). Additional limits may apply based on NESHAPS permit.

OTHER PERMIT LIMITATIONS & COMMENTS

This unit is not currently RCRA permitted. Part B application to be submitted First Quarter 1994.

TECHNOLOGY

Incineration

MATRIX

Organic Liquids
Aqueous Liquids
Organic Sludges/Particulates
Inorganic Sludges/Particulates
Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Lab Packs with Metals
Lab Packs without Metals
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Scientific Ecology Group - Oak Ridge, TN	DESIGN	PERMIT
FACILITY:	Scientific Ecology Group - Oak Ridge, TN		
SYSTEM:	00515, SEG Stabilization - Commercial	M3/YR	0 0
CONTACT:	John Hess 615-220-1236		
		—— System Capacity ——	

ADS NUMBER:

STATUS: Existing Operating Commercial

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	N	CH	Y	N	N	N	N	N

OTHER INFORMATION

Depending on dose rates/concentrations, waste streams containing Transuranic alpha emitters could potentially be treated in this system. Some waste streams requiring Remote Handling could potentially be treated in this system.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

To be determined during process (in progress). Same as SEG Incinerator limits, except for NESHAPS limits which do not apply to this unit.

OTHER PERMIT LIMITATIONS & COMMENTS

Part B permit application currently under review.

TECHNOLOGY

Stabilization

MATRIX

Aqueous Liquids
Inorganic Sludges/Particulates
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Elemental Lead
Calcine Solids
Inorganic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	Scientific Ecology Group - Oak Ridge, TN	DESIGN	PERMIT
FACILITY:	Scientific Ecology Group - Oak Ridge, TN		
SYSTEM:	00540, SEG Ultracompactor/TRUPress - Commercial	M3/YR	0 0
CONTACT:	John Hess 615-220-1236		

—— System Capacity ——

ADS NUMBER:

STATUS: Planned Approved

-TRU-				RCRA CHARACTERISTICS			
HLW	LLW	TRU	ALPHA HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE CORROSIVE REACTIVE
N	Y	Y	Y	CH	Y	N	Y N N N

OTHER INFORMATION

These units would be used primarily to reduce volumes awaiting available treatment capacity to meet LDR requirements.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

To be determined during permitting process (in progress).

Same as SEG Incinerator limits, except that NESHAPS limits do not apply to this unit.

These units would be used primarily to reduce volume awaiting available treatment capacity to meet LDR requirements.

TECHNOLOGY

Compaction

MATRIX

Organic Debris
Inorganic Debris
Heterogeneous Debris
Soil with <50% Debris
Soils
Calcine Solids
Inorganic Solids
Organic Solids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: West Valley Demonstration Project
 FACILITY: Integrated Radwaste Treatment System
 SYSTEM: 00346, Integrated Radwaste Treatment System
 CONTACT: Elizabeth Matthews 716-942-4930

DESIGN PERMIT
 M3/YR 2305 2305

ADS NUMBER:

STATUS: Existing Operating

System Capacity
 PERMIT [Other UNIT of MEASURE]: 2700 metric tons/yr

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 Y N Y Y RH Y Y N N N N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	NYSDEC	06/01/90	/ /
St. Water	SPDES	NYSDEC	/ /	09/01/90

OTHER INFORMATION

Chemical Precipitation Step Design Capacity = 2305 m3/yr.

Salts Dissolution Step Design Capacity = 2305 m3/yr.

Ion Exchange Step Design Capacity = 2123 m3/yr.

Evaporation Step Design Capacity = 8502 m3/yr.

Stabilization Step Design Capacity = 1842 m3/yr.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

System is operating under interim status.

The IRTS consists of four major treatment steps - (1) Sludge Mobilization and Wash; (2) Ion Exchange; (3) Evaporation; and (4) Cement Stabilization.

The waste stream is LLW when it reaches the Evaporation and Stabilization steps. These last two steps cannot accept HLW.

The final waste form must be < 100 nCi/gr alpha emitters (Stabilization).

OTHER PERMIT LIMITATIONS & COMMENTS

System throughput is limited to 2700 metric tons/yr in the Part A permit.

The system is operated by the DOE, but title to the system is held by NY State.

Other Permits:

NESHAP:(LWTS): approval to construct (modification) was issued 5-25-89: EPA; no renewal required.

NESHAP:(PVS): approval to construct was issued 10-05-87: EPA; no renewal required.

NESHAP:(01-14): approval to construct was issued 5-25-89: EPA; no renewal required.

State Air:(Cement Silo): certificate to operate issued 3-85; NYSDEC renewal 6-94.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Operation is subject to the conditions of the "WVDP Act" and "Cooperative Agreement" between the US DOE and NYS Energy Research and Development Authority.

The IRTS has been identified as a SWMM and a Hazardous Waste Treatment Facility in a RCRA 3008(h) consent order issued to the facility. It is part of an ongoing RCRA facility investigation.

TECHNOLOGY

Chemical Precipitation

Evaporation

Ion Exchange

MATRIX

Aqueous Liquids

Aqueous Liquids

Aqueous Liquids

Salts Dissolution

Aqueous Liquids

Stabilization

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE:	West Valley Demonstration Project	DESIGN	PERMIT
FACILITY:	Liquid Pretreatment System		
SYSTEM:	00555, Liquid Pretreatment System - 82	M3/YR	4731 4731
CONTACT:	Elizabeth Matthews 716-942-4313		

— System Capacity —

ADS NUMBER:

STATUS: Existing Could be used for mixed waste

-TRU-				RCRA CHARACTERISTICS						
HLW	LLW	TRU	ALPHA	HANDLING	METALS	MERCURY	ORGANICS	IGNITABLE	CORROSIVE	REACTIVE
N	Y	N	Y	CH	Y	N	Y	N	Y	N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
St. Water	SPDES	NYSDEC	01/01/81	09/30/90

OTHER INFORMATION

Construction complete, system in stand-by mode.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

Not permitted to treat mixed wastes.

The facility can only accept trace organics and trace metals.

REQUIREMENTS FOR USE OF EXISTING SYSTEMS

Current waste stream treatment is permitted under the SPDES program and meet necessary RCRA requirements.

New waste streams would require SPDES permit modification, at a minimum.

OTHER PERMIT LIMITATIONS & COMMENTS

State Water permit was transferred in 1981 from previous owner. Renewal application is pending.

System designed to treat radiologically contaminated groundwater, which (to date) has not contained hazardous constituents. In order to treat additional waste streams, a SPDES modification would be necessary (at a minimum).

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Operation is subject to the conditions of the "WVDP Act" and the "Cooperative Agreement" between the DOE and NYS Energy Research and Development Authority.

The LPS has been identified as a solid waste management unit in a RCRA 3008 (h) Consent Order issued to the facility and is part of an ongoing RCRA facility investigation.

TECHNOLOGY

Carbon Adsorption

MATRIX

Organic Liquids

Aqueous Liquids

Filtration

Organic Liquids

Aqueous Liquids

Separation

Organic Liquids

Aqueous Liquids

INFORMATION SHEET FOR CANDIDATE TREATMENT SYSTEMS

SITE: West Valley Demonstration Project
 FACILITY: Vitrification Facility
 SYSTEM: 00212, Vitrification Facility
 CONTACT: Elizabeth Matthews 716-942-4313

DESIGN PERMIT

M3/YR 83 83

System Capacity

ADS NUMBER:

PERMIT [Other UNIT of MEASURE]: 11 metric tons/yr

STATUS: Planned Approved

KEY DECISION STATUS: KD-4

DATE STATUS ACHIEVED: 10/01/82

CONSTRUCTION COMPLETION DATE: 10/95

—TRU— RCRA CHARACTERISTICS —
 HLW LLW TRU ALPHA HANDLING METALS MERCURY ORGANICS IGNITABLE CORROSIVE REACTIVE
 Y N Y Y RH Y Y N N Y N

PERMIT STATUS INFORMATION

REGULATION	PERMIT TYPE	REG AGENCY	DATE PERMIT ISSUED OR APPLICATION SUBMITTED	RENEWAL DATE
RCRA	Interim	NYSDEC	06/01/90	/ /
St. Water	SPDES	NYSDEC	01/01/81	09/01/90

OTHER INFORMATION

Facility is currently under construction.

Plan date operation - FY96.

SYSTEM ADMINISTRATIVE LIMITATIONS AND OTHER RELEVANT INFORMATION

STATUS / ACTIVITIES OF PLANNED, APPROVED SYSTEM

Construction and regulatory approvals are proceeding on schedule to be completed prior to initiating operations in FY 96.

OTHER PERMIT LIMITATIONS & COMMENTS

The State Water SPDES permit was transferred from the previous owner in 1981, and the 9-90 renewal application is pending.

System throughput is limited to 11 metric tons/yr as specified in Part A permit.

System is operated by DOE, but title to the system is held by NY state.

NESHAP:(SFCH): application for approval to construct (modification) was submitted 9-93; EPA; renewal TBD.

NESHAP:(In-Cell HVAC): application for approval to construct was submitted 9-93; EPA; renewal TBD.

State Air:(In-Cell HVAC): application for approval to construct was submitted 10-93; NYSDEC; renewal TBD.

RELATIONSHIP OF SYSTEM TO ENFORCEABLE AGREEMENT OR ORDER

Operation is subject to the conditions of the "WVDP Act" and the "Cooperative Agreement" between the US DOE and NYS Energy Research and Development Authority.

The V⁵ has been identified as a solid waste management unit in a RCRA 3008(h) consent order issued to the facility and is part of an ongoing RCRA facility investigation.

TECHNOLOGY

Vitrification

MATRIX

Aqueous Liquids

Inorganic Sludges/Particulates

Definition of Terms Contained in Treatment System Information Sheets

Table Element	Definition
Site	Department of Energy site where treatment system is/will be located.
Facility	Name of facility in which treatment system is/will be located.
System	Name of treatment system. A treatment system is generally defined to include one waste entry point and one waste exit point, and, could be operated independently of other systems to treat mixed waste streams.
Contact	Primary technical point of contact and telephone number.
ADS Number	Department of Energy Activity Data Sheet number for the treatment system (or facility).
Status	The current status of the treatment system, as defined by the Department of Energy. The terms/phrases used are: - <u>Existing Operating</u>. System is currently operating and treating mixed wastes. - <u>Existing Could be Used for Mixed Waste</u>. Existing system not currently treating mixed wastes. System may be treating other waste (low-level, hazardous, sanitary, etc.) or may not be operating at this time (but has at least reached KD-4). - <u>Planned Approved</u>. System that has reached, at the minimum, the KD-0 approval stage (approval of mission need), or equivalent. Typically, the funds for the system's conceptual design have been authorized or the system is under construction. - <u>Planned Unapproved</u>. System that has not reached the KD-0 approval stage or no funds for the system's conceptual design have been authorized. - <u>Commercial</u>. This modifier is added to the system status terms/phrases listed above for commercial, non-DOE treatment systems. This field does <u>not</u> reflect the permitted status of the treatment system. See "Permit Status Information" for the permitted status of each system.

Definition of Terms Contained in Treatment System Information Sheets

Table Element	Definition
Key Decision Status	Key Decision (KD) is Department of Energy nomenclature denoting the status of major system acquisitions or major projects. The KD status indicates the Headquarters approval level achieved and the associated stage(s) of engineering design/construction activities. Key Decision status is given for "Planned Approved" systems only. For "Planned Approved" projects not funded or approved through the KD process, the status given in this field is the KD status which most closely reflects the current phase of the project. The Key Decision status (and design/construction stage) are: - <u>KD-0 (approval to begin Conceptual Design)</u> - <u>KD-1 (approval to begin Title I Design)</u> - <u>KD-2 (approval to begin Title II Design)</u> - <u>KD-3 (approval to begin Construction)</u>
Date Status Achieved	The date the KD status/approval was achieved.
Construction Completion Date	For "Planned Approved" systems, the estimated date construction will be completed. Construction completion date format is "MM/YY".
System Capacity - Design	Design, or technically achievable, capacity (or throughput) in cubic meters per year (m^3/yr). If design capacity is reported in other units of measure, the design capacity is indicated as 0 m^3/yr in this field. The design capacity (in the alternate units of measure) is presented in the "Other Information" field.
System Capacity - Permit	Capacity of the system, as specified in the final permit, draft permit, or interim status Part B permit application, in cubic meters per year (m^3/yr). If permitted capacity is specified in other units of measure, the permitted capacity is indicated as 0 m^3/yr , and the capacity (in the other unit of measure) is provided directly under this field.

Definition of Terms Contained in Treatment System Information Sheets

Table Element	Definition
Radioactivity Groups	Mixed waste radioactivity categories as defined in the Interim Mixed Waste Inventory Report (IMWIR). HLW - High Level Waste LLW - Low Level Waste TRU - Transuranic Waste TRU Alpha - Transuranic Alpha emitters A "Y" indicates the treatment system can manage the radioactivity group. A "N" indicates the treatment system cannot manage the radioactivity group. A "Y" in the HLW category and a "N" in the TRU and/or LLW category indicates that the system might be able to manage the TRU or LLW mixed waste, but in order to avoid generation of treatment residuals that are HLW, good operating practices would exclude those waste forms from the treatment system.
Handling	Type of handling associated with the treatment system, or the waste handling category(ies) that can be managed in the system. CH - Contact-handled wastes only RH - Remote-handled wastes only B - Both contact-handled and remote-handled wastes can be managed
Applicable Contaminants	Mixed waste contaminant categories as defined in the IMWIR. Metals - RCRA metals (except for mercury) Mercury - Mercury Organics - RCRA organic compounds A "Y" indicates the treatment system can (potentially, technically) treat the contaminant category to LDR standards. A "N" indicates the treatment system cannot (potentially, technically) treat the contaminant category to LDR standards.

Definition of Terms Contained in Treatment System Information Sheets

Table Element	Definition
RCRA Characteristics	RCRA characteristic for ignitability, corrosivity, and reactivity. A "Y" indicates the treatment system can (potentially, technically) treat to remove the hazardous characteristic(s) and/or treat to LDR standards. A "N" indicates the treatment system cannot (potentially, technically) treat to remove the hazardous characteristic(s) and/or treat to LDR standards.
Permit Status Information	Status of the facility/system in the permitting process. Regulation - Regulations applicable to treatment system. Permit Type - Status of each permit associated with treatment system. Reg Agency - Regulatory Agency issuing each permit. Date Permit Issued or Application Submitted - Self-explanatory Renewal Date - Permit renewal date for facility/systems with a final permit.
Other Information	Information concerning the design (or proposed design) capacity of the treatment system. The design capacity of the treatment system is provided in this field if the capacity is specified in units of measure other than cubic meters per year. This field also contains other information about planned dates of operation and EPA RCRA waste codes acceptable in the system.
System Administrative Limitations	Current non-technical limitations on treatment system operation.
Other Relevant Information	This field provides current (quantitative) technical limitations and/or restrictions concerning waste forms to be treated in the system. This field is intended to present major waste acceptance criteria for the system.
Requirements for Use of Existing Systems	Activities required to start treating mixed wastes in "Existing Could be Used for Mixed Waste" systems.

Definition of Terms Contained in Treatment System Information Sheets

Table Element	Definition
Status / Activities of "Planned, Approved" or "Planned, Unapproved" System	Additional information concerning the current status of KD or pre-KD activities of "Planned Approved" or "Planned Unapproved" systems. Examples of the status of pre-KD activities include "conducting feasibility studies" or "funding for FY 1994 is budgeted". Examples of the status of KD activities include: "Conceptual Design is 50% complete" or "Approval to begin Title I Design received in July 1993. Title I Design will start in January 1994".
Other Permit Limitations/Comments	Additional information relevant to the permit status, if any. Field contains information that could affect the receipt of off-site waste, including restrictions in a final permit, a draft permit, or in the permit application submitted by DOE. This section is intended to provide additional information concerning the permit limitations of off-site treatment options identified in CSTPs.
Relationship of System to Enforceable Agreement or Order	If the treatment facility/system is part of an agreement or order with EPA and/or the state, this field identifies the title of the agreement/order, the parties, and the effective date. The agreement/order's milestones pertaining to the facility/system are summarized.
Technology	Treatment technology(ies) that are/can be performed within the treatment system.
Matrix	Physical/chemical matrices that can (potentially, technically) be treated by the corresponding technologies in the system. The matrix categories include those defined in the IMWIR. Other matrices (matrices not adequately characterized in the IMWIR list) that (potentially, technically) can be treated in the system are specified.

Appendix 2.1 - Definitions

Administrative Limitation - A limitation that requires a document regulatory or otherwise before making an operational change

Air Stripping - A treatment system that removes, or "strips" volatile organic compounds from contaminated groundwater or surface water by forcing an airstream through the water and causing the compounds to evaporate.

Amalgamation (AMLGM) - A process applicable to radioactive wastes containing mercury and particularly to wastes containing radioactive mercury isotopes. Mercury compounds are converted into a solid mercury-zinc alloy, which is more easily managed and less mobile than solutions containing radioactive mercury. Amalgamation provides a significant reduction in air emissions of mercury and provides a change in mobility from liquid mercury to a paste-like solid, potentially reducing leachability. Amalgamation may be performed using any of the following elements: zinc, copper, nickel, gold, and sulfur.

Aqueous Liquids (as a waste matrix) - Liquids/slurries with a total organic carbon (TOC) content less than 1 percent. Slurries must be pumpable (e.g. suspended/settled solids can be up to approximately 35-40 percent). Only liquids/slurries packaged/stored in bulk form (i.e., tank stored, drummed bulk free liquids) are included in this category. Liquids packaged in lab pack-type configuration are categorized as lab packs.

Best Available Technology (BAT) or Best Demonstrated Available Technology (BDAT) - (1) The preferred technology for treating a particular process liquid waste, selected from among others after taking into account factors related to technology, economics, public policy, and other parameters. As used in DOE Order 5400.5, BAT is not a specific level of treatment, but the conclusion of a selection process that includes several treatment alternatives. (2) Treatment technologies that have been shown through actual use to yield the greatest environmental benefit among competing technologies that are practically available.

Burn Unit - This unit is used to burn hydrogen from metal hydrides by direct flame

Capacity (of a facility) - The annual process throughput, in m^3/yr under normal operating conditions. "Normal operating conditions" are defined as the shift schedule under which the facility normally operates; i.e., one 8-hour shift/day, 5 days a week; two shifts/day, 5 day a week; 24 hours a day, 7 days a week.

Carbon Adsorption (CARBN) - A treatment technology used to treat wastewaters containing dissolved organics at concentrations less than about 5 percent and, to a lesser extent, dissolved metal and other inorganic contaminants. The most effective metals removal is achieved with metal complexes. The two most common carbon adsorption processes are the granular activated carbon (GAC), which is used in packed beds, and the powdered activated carbon (PAC), which is added loosely to wastewater. Carbon adsorption is used to adsorb trace organics in wastewaters. Using granulated or powdered carbon, adsorption of non-metallic inorganics, -metallics, and/or organic constituents, operates in such a way that a surrogate compound or indicator parameter does not undergo breakthrough. For example, Total Organic Carbon (TOC) can often be used as an indicator parameter for the adsorption of many organic constituents that cannot be directly analyzed in wastewater residues. Breakthrough occurs when the carbon has become saturated with the constituent (or indicator parameter) and substantial change occurs in the adsorption rate associated with that constituent.

Cemented Solids (as a waste matrix) - Sludges or solids (e.g. particulates, etc.) that have been solidified/stabilized with cement or other solidifying agents but do not meet LDR treatment standards. These wastes may require pretreatment (e.g. crushing/grinding) prior to subsequent LDR treatment.

Centrifugation - a method of physical separation by creating an imbalance of forces to cause consolidation and/or separation. The forces of concern in this separation are buoyancy, drag, gravity, and centrifugal force. Solid particle diameter and density are important parameters as well as liquid densities and viscosity's. In a tubular or disk bowl centrifuge a mixed feed enters a centrifugal force field. The "heavy particulate" is thrust to the farthest edge of the field, and consolidated because the drag and buoyant forces give way to the centrifugal force. The liquid phases are separated due to the interface between them (the greater the liquid density the greater the centrifugal force).

Characterization - The determination of waste contents and properties, whether by review of process knowledge, NDE/NDA, or sampling and analysis.

Chemical Fixations - Any waste treatment process that involves reactions between the waste and certain chemicals, and results in solids that encapsulate, immobilize, or otherwise tie up hazardous components in the waste to minimize the leaching of such components and to render the waste non hazardous and more suitable for disposal.

Chemical Oxidation (CHOXD) - Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combinations of reagents: (1) hypochlorite (e.g. bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permanganates; and/or (9) other oxidizing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g. Total Organic Carbon can often be used as an indicator parameter for the adsorption of many organic constituents that cannot be directly analyzed in wastewater residues). For example, Total Organic Carbon (TOC) can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues. Chemical oxidation specifically includes what is commonly referred to as alkaline chlorination. Chemical oxidation is also used to increase the oxidation states of transition metals thus lowering solubility products to facilitate precipitation and to destroy cyanide (i.e., cyanide destruction) by oxidizing it first to cyanate, then to nitrogen and carbon dioxide. Chemical oxidation specifically includes what is commonly referred to as alkaline chlorination. Chemical oxidation (CHOXD) is currently used in the Area 514 Waste Water Treatment Tank Farm Unit and will be incorporated for additional use into the Area 514-1 Tank Blending Unit and the Area 514-1 Portable Blending Unit.

Chemical Reduction (CHRED) - Chemical reduction utilizing the following reducing reagents (or waste reagents) or combination of reagents: (1) sulfur dioxide; (2) sodium, potassium, or alkali salts of sulfites, bisulfites, metabisulfates, and polyethylene glycol's (e.g. Total Organic Halogens can often be used as an indicator parameter for the reduction of many halogenated organic constituents that cannot be directly analyzed in wastewater residues). Chemical reduction is commonly used for the reduction of hexavalent chromium to the trivalent state.

Cleanup - (1) Actions undertaken during a removal or remedial response to physically remove or treat a hazardous substance that poses a threat or potential threat to human health and welfare, the environment, and/or real and personal property. Sites are considered cleaned when removal or remedial programs have no further expectation or intention of returning to the site and threats have been mitigated or do not require further action. (2) Actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and/or the environment. The term "cleanup" is sometimes used interchangeably with either remedial action, removal action, response action, or corrective action.

Closure - Operational Closure: Those actions that are taken upon completion of operations to prepare the disposal site or disposal unit for custodial care (e.g., addition of cover, grading, drainage, erosion control). **Final Site Closure:** Those actions that are taken as part of a formal decommissioning or remedial action plan, the purpose of which is to achieve long-term stability of the disposal site and to eliminate to the extent practical the need for active maintenance so that only surveillance, monitoring, and minor custodial care are required.

Compliance Agreements - Legally binding agreements between regulators and regulated entities that set standards and schedules for compliance with environmental statutes. Include Consent Order and Compliance Agreements, Federal Facilities Agreements, and Federal Facility Compliance Agreements.

Compressed Gases (as a waste matrix) - Pressurized aerosol cans and gas cylinders of any gas composition. Non-pressurized aerosol cans and gas cylinders would be classified as debris.

Concentration Based Standard - A restricted waste for which a concentration based standard has been developed for an extract of the waste or treatment residue, or the constituent concentration in the waste or treatment residue. These standards were based on best demonstrated available technology (BDAT) and the waste or waste extract or treatment residue must not exceed these concentrations if the waste is to be land disposed.

Contact-Handled Waste (CH Waste) - Waste or waste containers whose external surface dose rate does not exceed 200 mrem per hour at surface of container.

Controlled Reaction with Water (WTRRX) - used for highly reactive inorganic or organic chemicals with precautionary controls for protecting workers from potential violent reactions as well as precautionary control of potential toxic and/or ignitable levels of gases emitted during the reaction.

Corrosive/Corrosivity - (1) A solid waste exhibits corrosivity if (a) a sample of the waste is either aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, or it is a liquid and corrodes steel at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 °C (130 °F). (2) A chemical agent that reacts with the surface of a material causing it to deteriorate or wear away. (3) Identifies waste that must be segregated because of its ability to extract and solubilize toxic contaminants (especially heavy metals) from other waste; identifies waste that requires the use of corrosion-resistant containers for disposal.

Deactivation (DEACT) - The removal of the hazardous characteristics of a waste due to its ignitability, corrosivity, and/or reactivity. Ignitability is defined in aqueous systems by 49 CFR oxidizers. Reactivity is defined by wastes which may potentially evolve toxic gas such as hydrogen cyanide or sulfide. Corrosivity is characterized by extreme pH. The deactivation techniques include chemical oxidation and reduction, neutralization, and adsorption of gases. Deactivation can be performed on numerous waste constituents in an aqueous waste stream.

Debris - Materials that are primarily nongeologic in origin such as grass, trees, stumps, and man-made materials such as concrete, clothing, partially buried whole or empty drums, capacitors, and other synthetic manufacturing items, such as liners. (It does not include synthetic organic chemicals, but may include materials contaminated with these chemicals.)

Decommissioning - (1) Actions taken to reduce the potential health and safety impacts of DOE contaminated facilities, including activities to stabilize, reduce, or remove radioactive materials or to demolish the facilities. (2) Preparations taken for retirement of a nuclear facility from active service, accompanied by the execution of a program to reduce or stabilize radioactive contamination. (3) The process of removing a facility or area from operation and decontaminating and/or disposing of it or placing it in a condition of standby with appropriate controls and safeguards.

Decontamination - The removal of unwanted material (typically radioactive material) from facilities, soils, or equipment by washing, chemical action, mechanical cleaning, or other techniques.

Department of Energy Waste - Radioactive waste generated by activities of the DOE (or its predecessors), waste for which DOE is responsible under law or contract, or other waste for which the DOE is responsible.

Designated Facility - A hazardous or mixed waste treatment, storage, or disposal facility that has received an EPA permit (or facility with interim status) in accordance with the requirements of Parts 270 and 124 of 40 CFR, a permit from a state authorized in accordance with Part 271 of 40 CFR, or that is regulated under §261-6(c)(2) or Subpart F of Part 266 of 40 CFR, and that has been designated on the manifest by the generator pursuant to §262.20.

Disposal - The permanent isolation of waste with no intent of recovery.

Disposal Facility - (1) The land, structures, and equipment used for the disposal of waste. (2) A facility or part of a facility at which waste is intentionally placed into or on the land or water, and at which waste will remain after closure.

Effluent - (1) Airborne and liquid wastes discharged from a DOE site or facility following such engineering waste treatment and all effluent controls, including onsite retention and decay, as may be provided. This term does not include solid wastes, wastes for shipment offsite, wastes that are contained (e.g., underground nuclear test debris) or stored (e.g., in tanks) or wastes that are to remain onsite through treatment or disposal. (2) Wastewater (treated or untreated) that flows out of a treatment plant, sewer, or industrial outfall. May refer to wastes discharged into surface waters.

Elemental Lead (Activated and Non-Activated) (as a waste matrix) - Both surface contaminated and activated elemental lead. Activated lead includes lead from accelerators or other neutron sources that may result in irradiation. Surface contaminated lead materials include bricks, counterweights, shipping casks, and other shielding materials.

Environmental Impact Statement (EIS) - (1) A document prepared in accordance with the requirements of §102(2)(C) of NEPA. (2) A tool for decision making; it describes the positive and negative effects of the undertaking and lists alternative actions. The draft document (DEIS) is prepared by the EPA, or under EPA guidance, and attempts to identify and analyze the environmental impacts of a proposed action and feasible alternatives, and is circulated for public comment prior to preparation of the final environmental impact statement.

Environmental Restoration (ER) - Measures taken to clean up and stabilize or restore a site to pre-violation conditions that has been contaminated with hazardous substances during past production or disposal activities.

Environmental Restoration Waste - Waste generated by environmental restoration program activities.

Existing Facility - (1) Any equipment, structure, system, process or activity that fulfills a specific purpose. Examples include accelerators, storage areas, fusion research devices, nuclear reactors, production or processing plants, coal conversion plants, magnetohydrodynamics experiments, windmills, radioactive waste disposal systems and burial grounds, testing laboratories, research laboratories, transportation activities, and accommodations for analytical examinations of irradiated and unirradiated components. (2) Buildings and other structures; their functional systems and equipment, including site development features such as landscaping, roads, walks and parking areas; outside lighting and communications systems; central utility plants; utilities supply and distribution systems; and other physical plant features. (3)(a) Any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (b) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

Facilities - Buildings and other structures; their functional systems and equipment, including site development features such as landscaping, roads, walks and parking areas; outside lighting and communications systems; central utility plants; utilities supply and distribution systems; and other physical plant features.

Federal Facility Compliance Agreement (FFCA) - An agreement between the DOE and a host state with respect to how and/or when some waste-related activity will be conducted to achieve compliance with applicable regulations in a timely manner. A major driver or constraint on activities that a particular site must undertake for waste operations.

Filtration - Removal/separation of particles from a mixture of fluid and particles by a medium that permits the flow of the fluid but retains the particles. Usually, the larger the particles, the easier they are to remove from the fluid. A contaminated filter aid may be generated. The contaminated filter media and the effluent may go for further treatment or for disposal.

Free Liquid - Liquid that is not absorbed into host material such that it could readily separate from the solid portion of a waste under ambient temperature and pressure, and spill or drain from its container.

Gas adsorption - is an off-gas treatment in many instances. It may consist of a wet scrubber, HEPA filter, and air-phase carbon adsorbers in series. Venting of compressed gases into an absorbing or reacting media (i.e., solid or liquid) is considered a BDAT for gases exhibiting certain characteristics (such as reactivity). Venting can be accomplished through physical release using valves and piping, physical penetration of the container, or penetration through detonation. The system incorporates valves, fittings, and a blower to draw the gas through the system. Gas adsorption will be used to treat the off-gas from aqueous waste treatment in successive (i.e., "upstream") units. This gas may be generated by acids formed during oxidation and pH adjustment processes. The waste stream characteristic would be corrosivity in a gas at ambient conditions.

AIM

Association for Information and Image Management

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301/587-8202

Centimeter

Inches

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4 of 4

Generation - Includes the wastes resulting from new production, rework operations, wastes generated from D&D operations, and wastes resulting from environmental restoration operations, including the recovery of pre-1970 wastes, should their recovery be determined to be necessary.

Generator - Refers to current or previously operated facilities of the DOE that have produced or are producing waste.

Groundwater - Liquid water occurring beneath the earth's surface in the interstices between soil grains, in fractures, or in porous formations.

Groundwater Contamination - The pollution of the underground sources of springs and wells. Contamination can result from indiscriminate land disposal of potentially hazardous waste materials that are then dissolved or suspended in free liquids, usually water, and leach downward through the unsaturated profile to the zone of saturation or from improperly constructed or operated wells. Movement of the toxic materials in the saturated zone is horizontal, and the rate of flow is determined by the gradient of the aquifer and its permeability. Correction of the problem is seldom limited to one site.

Groundwater Remediation - Treatment of groundwater to remove pollutants.

Hazardous Waste (HW) - (1) Those wastes that are designated hazardous by EPA [or state] regulations. (2) By-products of production or operation that can pose a potential hazard to human health or the environment when improperly managed and that possess at least one of four characteristics (ignitability, corrosivity, reactivity, toxicity), or that appear on special EPA lists. (3) A solid waste or combination of solid waste, that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may (a) cause, or significantly contribute to, an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. (4) Those wastes listed by EPA or meeting characteristics specified by EPA in their criteria pursuant to the RCRA. Disposal treatment or storage of hazardous wastes can only take place in a site or facility issued a permit by EPA or a state. Note: Source, special nuclear material, and byproduct material, as defined by the AEA of 1954 as amended, are specifically excluded from the term hazardous waste.

Heterogeneous Debris (as a waste matrix) - Wastes with matrices meeting the definition of debris per the 8/18/92 LDR debris rulemaking (57 FR 37194, 8/18/92). This category includes debris that do not meet the criteria for categorization as either Organic Debris or Inorganic Debris. This category also includes mixtures of debris and solid progress residues or soil, provided debris comprises no more than 50 percent of the waste.

High-Level Radioactive Waste (HLW) - (1)The highly radioactive waste material that results from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid waste derived from the liquid, that contains a combination of TRU waste and fission products in concentrations requiring permanent isolation. (2)(a) Irradiated reactor fuel, (b) liquid wastes resulting from the operation of the first cycle solvent extraction system, or equivalent, and the concentrated wastes from subsequent extraction cycles, or equivalent, in a facility for reprocessing irradiated reactor fuel, and (c) solids into which such liquid wastes have been converted. (3) As defined by the NWPA, high-level waste is (a) the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including the liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and (b) other highly radioactive material that the NRC, consistent with existing law, determines by rule to require permanent isolation. (4) Waste generated in the fuel of a nuclear reactor, or waste found at nuclear reactors or nuclear fuel reprocessing plants. These wastes are a serious threat to anyone who comes near them without shielding.

Hydrogen Desorption Unit - This unit is used to desorb hydrogen isotopes from metal hydrides by heating in an inert atmosphere

Incineration - (1)The controlled process by which combustible solid, liquid, or gaseous wastes are burned and changed into noncombustible gases and solid ash. (2)A treatment technology using combustion to destroy organic constituents and reduce the volume of wastes.

Inorganic Debris (as a waste matrix) - Wastes with matrices meeting the definition of debris per the 8/18/92 LDR debris rulemaking (57 FR 37194, 8/18/92). More specifically this category is defined for wastes that contain >90 percent inorganic debris. Example of inorganic debris materials are: metal shapes (e.g. equipment, scrap), metal turnings, glass (e.g. light tubes, leaded glass, etc.), ceramic materials, concrete, rocks.

Inorganic Sludges/Particulates (as a waste matrix) - Solid process residues with a predominately inorganic matrix. Solid process residues are solids that do not fit the definition of debris. Typically, these solids are sludge or particulate materials. Waste in this category may also contain some debris materials provided the amount of debris is less than 50 percent (based on LDR debris rule). The solids in this category may be contaminated with, or contain organics, such that thermal treatment is required. However, the matrices are predominantly inorganic such that thermal treatment would result in a high residue. Example of waste materials in this category are: sludges, ashes, sand blasting media, absorbed aqueous or organic liquids (or inorganic particulate absorbents), ion exchange resins, and paint chips/residues.

Ion Exchange - A process used to separate a mixed waste into its radioactive and hazardous constituents if the radioactive components are ionic. It will also concentrate the radioactive ionic species into a small volume, leaving a nonradioactive aqueous phase. The principal mixed waste application of this process is to recover metallic radionuclides from wastewaters or acid leach liquors. Ion exchange is used to exchange a metal ion with a hydrogen ion or to exchange an anion with a hydroxyl ion. Cation exchangers are strong acid (usually sulfuric acid groups) or weak acid (carboxylic acid groups) exchange resins. Anion exchangers are strong base (quaternary amines) and weak base (tertiary amines) resins.

Lab Packs with Metals and Lab Packs without Metals (as waste matrices) - Wastes with one or more small containers of free liquids or solids surrounded by solid materials (virgin or waste materials) within a larger container. These categories include scintillation fluids that are packaged with vials. The difference between wastes within these categories is contaminants. Lab packed wastes contaminated with TC metals are categorized as "Lab packs with Metals". Lab packed wastes that are not contaminated with TC metals are categorized as "Lab packs without Metals".

Land Disposal Restrictions (LDRs) - (1) Provisions of the HSWA requiring phased-in treatment of hazardous wastes before disposal. (2) A RCRA program that restricts land disposal of RCRA hazardous wastes and requires treatment to promulgated treatment standards. (See Thirds Rule)

Leachate - (1) Any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste. (2) A contaminated liquid resulting when water percolates, or trickles, through waste materials and collects components of those wastes. Leaching may occur at landfills and may result in hazardous substances entering soil, surface water, or groundwater.

Legacy Waste - That backlog of stored waste remaining from the development and production of U.S. nuclear weapons, about which a permanent disposal determination remains to be made; i.e., waste that is currently in warehouse storage, retrievable storage on bermed pads, or disposed of in trenches, that has not been examined by EM-40, Environmental Restoration Group, and determined to be permanently disposed of. [Also called backlog waste.]

Listed Waste - Wastes listed as hazardous under RCRA that have not been subjected to the Toxic Characteristics Leachate Procedure because the dangers they present are considered self-evident.

Liquid Mercury (as a waste matrix) - Any wastes containing bulk volumes of elemental liquid mercury. The category includes lab packs of strictly liquid mercury or other containers containing bulk mercury.

Low-Level Radioactive Waste (LLW) - (1) Waste that contains radioactivity and is not classified as high-level waste, TRU waste, or spent nuclear fuel, or the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. Test specimens of fissionable material irradiated for research and development only, and not for the production of power or plutonium, may be classified as low-level waste, provided the concentration of TRU is less than 100Nci/g. (2) Radioactive waste not classified as high-level waste, TRU waste, spent nuclear fuel, or byproduct material.

Mercury Distillation Unit - This Radiological Separation technology will use mild heat and/or vacuum to separate the tritium from the mercury (based on principles of vapor pressure differences). It can be associated with mercury retorting.

Mixed Low Level Waste (MLLW) - Low level waste that also includes hazardous materials as identified in 40 CFR 261, Subparts C and D.

Mixed TRU (MTRU) Waste - TRU waste that also includes hazardous materials as identified in 40 CFR 261, Subparts C and D.

Mixed Waste - (1)Radioactive waste (as defined by the Atomic Energy Act) that contains material listed as hazardous waste in Subpart D of 40CFR 261 or that exhibits any of the hazardous waste characteristics identified in Subpart C of 40 CFR 261. (2)-Waste that contains both radioactive and hazardous components, as defined by the AEA and the RCRA. The term "radioactive component" refers only to the actual radionuclides dispersed or suspended in the waste substance.

Mixture Rule - Under the mixture rule, when any solid waste and a listed hazardous waste are mixed, the entire mixture is a listed hazardous waste. Mixtures of solid wastes and characteristic hazardous wastes are hazardous only if the mixture exhibits a characteristic. (40 CFR 261.3(a)(2))

Neutralization (NEUTR) - use of the following reagents (or waste reagents) or combinations of reagents: (1) Acids; (2) bases; or (3) water (including wastewaters) resulting in a pH greater than 2 but less than 12.5 as measured in the aqueous residuals. Neutralization (NEUTR) is currently used in the Area 514 Waste Water Treatment Tank Farm Unit and the Building 513 Solidification Unit and will be incorporated for use into the proposed Area 514-1 Tank Blending and Portable Blending Units.

Onsite - (1)Within a single research or production site of the DOE weapons complex; e.g., LANL is a site, as is INEL, SNL, etc. (2)The contaminated area and all potential areas in very close proximity to the contamination that must be taken into account for effective implementation of the response action.

Onsite Facility - A hazardous waste treatment, storage, or disposal area that is located on the generating site.

Organic Debris (as a waste matrix) - Wastes with matrices meeting the definition of debris per the 8/18/92 LDR debris rulemaking (57 FR 37194, 8/18/92). More specifically this category is defined for wastes that contain >90 percent organic debris. Example organic debris materials are: rags (including "solvent rags") plastic/rubber, paper, wood, and glovebox gloves (including lead-lined), animal carcasses.

Organic Liquids (as a waste matrix) - Liquids/slurries with a total organic carbon (TOC) content greater than or equal to 1 percent. Slurries must be pumpable (e.g. suspended/settled solids can be up to approximately 35-40 percent). Only liquids/slurries packaged/stored in bulk form (i.e., tank stored, drummed bulk free liquids) are included in this category. Liquids packaged in lab pack-type configuration are categorized as lab packs.

Organic Sludges/Particulates (as a waste matrix) - Solid process residues with an organic matrix. Solid process residues are solids that do not fit the definition of debris. Typically, these solids are sludge or particulate materials. Waste in this category may also contain some debris materials provided the amount of debris is less than 50 percent (based on LDR debris rule). As opposed to Inorganic Sludges/Particulates, wastes in this category would not leave a large residue when thermally treated. Example of waste materials in this category are: organic sludges, (e.g. sewage sludges) activated carbon, organic resins, and absorbed liquids (organic particulate absorbents).

pH - (1) Used to describe the hydrogen-ion activity of a system. The logarithm (the exponent indicating the power to which a given number must be raised to produce a given number) of the reciprocal of hydrogen ion concentration ($-\log_{10}[\text{H}^+]$, where $[\text{H}^+]$ is hydrogen-ion concentration in moles per liter). (2) A symbol for the degree of acidity or alkalinity.

Physical separation - used to perform the following: (1) skim light liquids from heavier liquids; (2) settle precipitates and other solids; and/or (3) decant heavy phase liquids from lighter phases.

Pollutant or Contaminant - Includes, but is not limited to, any element, substance, compound, or mixture, including disease-causing agents, that after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring; except that the term "pollutant or contaminant" shall not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of paragraph (14) and shall not include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas).

Precipitation (PRECP) - Treatment of metals and other inorganics to form insoluble precipitates of oxides, hydrides, carbonates, sulfides, sulfates, chlorides, fluorides, or phosphates. The following reagents (or waste reagents) are typically used alone or in combination: (1) Lime (i.e., containing oxides and/or hydroxides of calcium and/or magnesium); (2) caustic (i.e., sodium and/or potassium hydroxides); (3) soda ash (i.e. sodium carbonate); (4) sodium sulfide; (5) ferric sulfate or ferric chloride; (6) alum; or (7) sodium sulfate. Additional flocculating, coagulating or similar reagents/processes that enhance sludge dewatering characteristics are not precluded from use. Chemical precipitation may include chelation, flocculation and coagulation. Heavy metals are removed from solution to form colloidal suspensions with this technology.

Pretreatment Processes or Support Technology - Processes (e.g., shredding, grinding, physical separation, etc.) that make the waste amenable to the treatment process that ultimately destroys, removes, or immobilizes the hazardous contaminants or characteristics.

Vacuum Evaporation - a method of transforming the "liquid state" to the "vapor state" by adding energy to a system. Knowledge of solution properties (i.e. boiling point rise and enthalpies) for the solution at specific system conditions is required. Temperatures, pressures and heat transfer coefficients at various system conditions must also be known. Once the vapor is condensed it will be cleaner and free of non-volatile constituents such as salts. The salts and condensed vapor may go for further treatment or for disposal.

Radiation - (1) Ionizing radiation that includes any or all of the following: gamma rays and x-rays, alpha and beta particles, high-speed electrons, neutrons, high-speed protons, and other atomic particles. This definition does not include nonionizing radiations, such as sound, microwave, radiowave or visible, infrared, or ultraviolet light. (2) Refers to the process of emitting energy in the form of rays or particles that are thrown off by disintegrating atoms. The rays or particles emitted may consist of alpha, beta, or gamma radiation.

Radioactive Mixed Waste - (See Mixed Waste)

Radioactive Waste - (1) Solid, liquid, or gaseous material that contains radionuclides regulated under the AEA of 1954, as amended, and of negligible economic value considering costs of recovery. (2) A solid, liquid, or gaseous material of negligible economic value that contains radionuclides in excess of threshold quantities. Does not include material contaminated by radionuclides from nuclear weapons testing.

Radioactivity - (1) The spontaneous nuclear decay of a material with a corresponding release of energy in the form of particles and/or electromagnetic radiation. (2) The property or characteristic of radioactive material to spontaneously "disintegrate" with the emission of energy in the form of radiation. The unit of radioactivity is the curie (or becquerel).

Radiological Separation - a technology currently used for the removal of a radioactive component from a solid matrix. It includes such activities as surface decontamination and vacuuming. However, radiological separation may also encompass the separation of the radiological component from the hazardous waste component. If that is the case it will be viewed as a technology for the separation of radioactive isotopes from MLLW organic liquid matrices (microfiltration treatability study).

Radionuclide - (1) A species of atom having an unstable nucleus, that is subject to spontaneous decay. (2) Any nuclide that emits radiation. A nuclide is a species of atom characterized by the constitution of its nucleus and hence by the number of protons, the number of neutrons, and the energy content.

Reactive Metals (as a waste matrix) - Bulk reactive metals and equipment contaminated with reactive metals. Bulk reactive metals include sodium, alkali metal alloys, aluminum fines, uranium fines, zirconium fines, and other pyrophoric materials. Contaminated equipment includes piping, pumps, and other materials with a residue or reactive metals that cannot be separated from the equipment medium.

Reactivity - (1) A characteristic of a waste that is explosive, reacts violently with water, or generates toxic gases when exposed to water or liquids that are moderately acidic or alkaline. (2) An EPA characterization of hazardous waste that identifies waste that under routine management, presents a hazard because of instability or extreme reactivity.

Remedial Action (RA) - (1) Activities conducted at DOE facilities to reduce potential risks to people and/or harm to the environment from radioactive and/or hazardous substance contamination. (2) Those actions consistent with permanent remedy taken instead of, or in addition to, removal action in the event of a release or threatened release of a hazardous substance into the environment to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment. (3) The term includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection, clay cover, neutralization, cleanup of released hazardous substances or contaminated materials, recycling or reuse, diversion, destruction, segregation of reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and runoff, onsite treatment or incineration, provision of alternative water supplies, and any monitoring reasonably required to ensure that such actions protect the public health and welfare and the environment. The term includes the costs of permanent relocation of residents and businesses and community facilities where the President determines that, alone or in combination with other measures, such relocation is more cost-effective than, and environmentally preferable to, the transportation, storage, treatment, destruction, or secured disposition offsite of such hazardous substances, or may otherwise be necessary to protect the public health or welfare. The term does not include offsite transport of hazardous substances or contaminated materials unless the President determines that such actions: are more cost-effective than other remedial actions; will create new capacity to manage in compliance with Subtitle C of the SWDA, hazardous substances in addition to those located at the affected facility; or are necessary to protect public health or welfare or the environment from a present or potential risk that may be created by further exposure to the continued presence of such substances or materials [as defined by §101(24) of CERCLA].

Remote-Handled Waste (RH Waste) - (1) Packaged waste with an external surface dose rate that exceeds 200 mrem per hour.

Remote Handling - The handling of wastes from a distance so as to protect human operators from unnecessary exposure.

Residues - Pu-bearing sludges that are not yet defined either as waste or as a resource for reprocessing.

Resource Conservation and Recovery Act (RCRA) Part A Permit - The first part of a Resource Conservation and Recovery Act permit application that identifies treatment, storage, and disposal units within a to-be-permitted facility.

Resource Conservation and Recovery Act (RCRA) Permit, Part B - The detailed second part of a RCRA permit application that describes waste to be managed, and waste quantities, and facilities.

Scrubbing - used to treat the off-gas from aqueous waste treatment. It may consist of a wet scrubber, HEPA filter, and air phase carbon adsorbers in series. Off-gas is vented into an absorbing or reacting media (i.e., solid or liquid). Venting can be accomplished through physical release utilizing valves/piping; physical penetration of the container; and/or penetration through detonation. The scrubbing system incorporates valves, fittings and a blower to draw the gas through the system. Off-gases are formed from oxidation and pH adjustment processes in other treatment units.

Segregation - The separation of waste materials to facilitate handling, storage, treatment, transportation, and/or disposal.

Site - (1) A geographic entity comprising land, buildings, and other facilities required to perform program objectives. Generally a site has, organizationally, all of the required facilities for management functions i. e. it is not a satellite of some other site. (2) For the purposes of the ERWM Five-Year Plan, sites are lands, installations, and/or facilities for which DOE has or shares responsibility for ERWM activities. (3) An area or a location at which hazardous substances have been stored, treated, disposed of, placed, or otherwise come to be located. This includes all contiguous land, structures, other appurtenances, and improvements on the land used for treatment, storage, or disposal of hazardous substances. A site may consist of several treatment, storage, or disposal facilities (e.g., impoundments, containers, buildings, or equipment).

Site Characterization - The program of exploration and research, both in the laboratory and in the field, undertaken to establish the geologic conditions and the ranges of those parameters of a particular site relevant to the procedures under this part. Site characterization includes borings, surface excavations, excavation of exploratory shafts, limited subsurface lateral excavations and borings and geophysical testing.

Site Closure and Stabilization - Those actions that are taken upon completion of operations that prepare the disposal site for custodial care and that ensure that the disposal site will remain stable and will not need ongoing active maintenance.

Sizing and Blending - is a technology used to prepare a waste for a treatment by combining it with other wastes to do the following: (1) consolidate similar waste streams; (2) provide a heat sink for oxidation/reduction and pH adjustment reactions; (3) temporarily store and condition wastes for batch treatment.

Size reduction - is a method of reducing the volume of a waste already generated. It is performed on solid matrices, that includes such activities as shredding, cutting and/or dismantling. No contaminants are removed with this technology, but by performing size reduction, wastes are made more amenable to characterization, subsequent treatment technologies, and storage and disposal.

Soil (as a waste matrix) - Soils contaminated with hazardous constituents and radioactivity that are stored in waste containers. Includes soils contaminated with organics, inorganics, or both.

Soil With <50 Percent Debris (as a waste matrix) - Soils contaminated with hazardous constituents and radioactivity that are stored in waste containers. Includes soils contaminated with organics, inorganics, or both. Wastes in this category may include debris, provided it is less than 50 percent of the waste.

Stabilization (STABL) - A broad class of treatment processes that immobilize hazardous constituents in a waste. For treatment of metals in low-level mixed wastes and for TRU wastes containing low-level radioactive components, stabilization technologies will reduce the leachability of the hazardous metal constituents (regardless of whether the metals are radioactive) in nonwastewater matrices. Stabilization is used to pass leachate criteria delineated as procedures in 40 CFR and or in 22 CCR, and includes fixation and solidification. Stabilization is performed with the following reagents (or waste reagents) or combinations of reagents: (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust); or (3) gypsum cement, but does not preclude the addition of reagents (e.g., iron salts, silicates, and clays) designed to enhance the set/cure time and/or compressive strength, or to overall reduce the leachability of the metal or organic constituents. Stabilization can be used on a variety of matrices to prevent constituents, both organic and inorganic, from leaching into the environment.

Storage - (1) Temporary holding of waste pending treatment or disposal. Storage methods include containers, tanks, waste piles, and surface impoundments. (2) The containment of hazardous waste, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of such hazardous waste. (3)Retrievable retention of waste pending disposal.

Storage Facility - Land area, structures, and equipment used for the storage of waste.

Storage Unit - A discrete part of the storage facility in which waste is stored.

Technical Limitation - A limitation that requires a piece of equipment to be modified such that regulatory approval is required.

Technology Based Standard - A restricted waste for which a technology based standard is specified may be land disposed after it is treated using that specified technology or an equivalent treatment method approved by the Administrator of EPA.

Thermal Treatment - The treatment of hazardous waste in a device that uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, pyrolysis, calcination, wet air oxidation, and microwave discharge.

Transuranic Waste (TRU) - This core definition appears in modified form in various relevant documents: Waste containing alpha-emitting radionuclides with an atomic number greater than 92 and half-lives greater than 20 years, at concentrations greater than 100 Nci/g of waste. Modifications include the following: (1) For purposes of management, DOE Order 5820.2A (a) considers TRU waste, as defined above, "without regard to source or form" [The proposed revision to the Order ("DOE Order 5820.2A Major Issues for Revision," May 6, 1992) contemplates removing this clause.]; (b) allows heads of field elements to determine that wastes containing other alpha-emitting radionuclides must be managed as TRU waste; and (c) adds "at time of assay", implying both that the classification of a waste as TRU is to be made based on an assay and that such classification can be superseded only by another assay. (2) For purposes of setting standards for management and disposal, 40 CFR 191.02(i) adds "except for: (a) high-level radioactive wastes; (b) wastes that the DOE has determined, with the concurrence of the Administrator [of EPA] do not need the degree of isolation required by this part; or (c) wastes that the Commission [NRC] has approved for disposal on a case-by-case basis in accordance with 10 CFR 61 [Licensing Requirements for Land Disposal of Radioactive Wastes]".

Treatability Group - Based on the radioactive characteristics, hazardous components, and physical/chemical matrices as discussed above, DOE has grouped its wastes to reflect salient treatment considerations for each waste stream. These "treatability groups" are used to relate waste streams and waste quantities to treatment facilities and technology development needs.

Treatment - (1) Any method, technique, or process designed to change the physical or chemical character of waste to render it less hazardous, safer to transport, store or dispose of, or reduced in volume. (2) Any activity that alters the chemical or physical nature of a hazardous waste to reduce its toxicity, volume, mobility, or render it amenable for transport, storage, or disposal.

Treatment Facility - The specific area of land, structures, and equipment dedicated to waste treatment and related activities.

Treatment, Storage, and Disposal (TSD) Facility - Any building, structure, or installation where a radioactive or hazardous substance has been treated, stored, or disposed.

Treatment System - The equipment and processes used for similar waste types at treatment facilities. A treatment system is the unit treatment operation or sequence of unit treatment operations carried out on all wastes that enter the system (e.g., a treatment system may consist of chemical reduction followed by precipitation, or an incinerator and a vitrification unit for the ash).

Vitrification - (1) A waste treatment process in which calcined or another decomposed form of waste is mixed with glass and fused into a solid mass. The resultant mass is expected to remain a stable and insoluble form for long time periods, and thus will be a leading candidate for the most benign waste form for disposal. (Vitrification with borosilicate glass is the BDAT for HLW and certain mixed waste streams.) (2) The conversion of high-level waste materials into a glassy or noncrystalline solid for subsequent disposal. (3) The process of immobilizing waste that produces a glass-like solid that permanently captures the radioactive materials.

Volatile Organic Compound (VOC) - (1) Any reactive organic compound as defined in 40 CFR 60.2 definitions. (2) An organic (carbon-containing) compound that evaporates (volatilizes) readily at room temperature.

Waste Acceptance Criteria (WAC) - The criteria used to determine if waste and waste packages are acceptable for treatment, storage, transportation and disposal purposes.

Waste Characterization - Activities to determine the extent and nature of the waste. Note: Waste characterization may be based on process knowledge, nonintrusive (NDE/NDA) examination, or intrusive examination such as sampling and analysis.

Waste Form - The physical form of the waste such as sludges, combustibles, metals, etc.

Waste Isolation Pilot Plant (WIPP) - (1) The project authorized under §213 of the DOE National Security and Military Applications of Nuclear Energy Authorization Act of 1980 (Public Law 96-164; 93 Stat. 1259, 1265) to demonstrate the safe disposal of radioactive waste materials generated by atomic energy defense activities. (2) A research and development facility, located near Carlsbad, New Mexico, to be used for demonstrating the safe disposal of TRU wastes from DOE activities.

Waste Management - The planning, coordination, and direction of those functions related to generation, handling, treatment, storage, transportation, and disposal of waste, as well as associated surveillance and maintenance activities.

Waste Minimization - (1) An action that effectively avoids or reduces the generation of waste by source reduction, improving energy usage, or by recycling. This action is consistent with the general goal of minimizing present and future threats to human health, safety, and the environment. (2) The reduction, to the extent feasible, of hazardous waste that is generated prior to treatment, storage, or disposal of the waste. Waste minimization includes any source reduction or recycling activity that results in either (a) reduction of total volume of hazardous waste, (b) reduction of toxicity of hazardous waste or (c) both.

Waste Segregation - The separation of waste materials before the package (or repackaging process to facilitate handling, storage, treatment, transportation, and/or disposal.

Waste Stream - A flow of waste materials with specific definable characteristics that remain the same throughout the life of the process generating the waste stream. A waste stream is produced by a single process or sub-process; however, that process or sub-process may be one that combines two or more input waste streams together to produce a single output waste stream.

Wastewaters - Wastes that contain less than 1 percent by weight total organic carbon (TOC) and less than 1 percent by weight total suspended solids (TSS) with the following exception: F001, F002, F003, F004, F005, wastewaters are solvent-water mixtures that contain less than 1 percent by weight TOC or less than 1 percent by weight total F001, F002, F003, F004, F005 solvent constituents listed in §286.41, Table CCWE (Constituent Concentrations in Waste Extract).

APPENDIX 3.1A DESIGN & OPERATING CAPACITIES OF MIXED WASTE TREATMENT UNITS - EXISTING UNITS

Treatment Unit Name (Associated BDAT)	*Design/Permit Capacity	**Normal Operating Capacity	Annual Usage		***Excess Capacity	Allowable Wastestreams						DOE I.D. Number
			Mixed Waste	Hazardous Waste		EPA Waste Code			****EPA Form Code			
Bldg. 612 Size Reduction Unit (No LDR Standard)	5 tons/day (115 M ³ /yr)	50 M ³ /yr	11 M ³ /yr	33 M ³ /yr	6 M ³ /yr	D004 D007 D010 D019 D023 D026 D029 D036 D040 F001 F005	D005 D008 D011 D021 D024 D027 D034 D038 F002 F007	D006 D009 D018 D022 D025 D028 D035 D039 F004 F009	206 302 306 309 319 407 511	208 304 307 310 403 409 519	301 305 308 311 406 504	2402 2405 2407 2424 2430 2435
Bldg. 513 Shredding Unit (No LDR Standard)	27.55 tons/day (633 M ³ /yr)	43 M ³ /yr	1 M ³ /yr	0 M ³ /yr	42 M ³ /yr	D004 D007 D010 D019 D028 D035 D040	D005 D008 D011 D021 D029 D038 F002	D006 D009 D018 D027 D034 D039	307 310 403 406 519	308 311 404 407 609	309 319 405 409	2402 2405 2407 2419 2424 2430 2435
Area 514 Waste Water Treatment Tank Farm Unit (CARDN, CHOXD, CHRED, NEUTR, DEACT, PRECP)	9,000 gal/day (1,800 K gal/yr)	44 K gal/yr	44 K gal/yr	0 K gal/yr	0 K gal/yr	D001 D004 D007 D010 D019 D027 D030 D034 D038 F001 F004 F009	D002 D005 D008 D011 D021 D028 D032 D035 D039 F002 F005	D003 D006 D009 D018 D022 D029 D033 D036 D040 F003 F007	101 104 107 110 113 116 202 205 219 609	102 105 108 111 114 117 203 206 504	103 106 109 112 115 119 204 207 519	2403 2448(MTRU)

*Issuance of Part B Permit pending, hazardous waste facilities currently under Interim Status. Yearly capacities based on 200 operational days per year.
 **Normal Operating Capacity as identified in the DOE Mixed Waste Inventory Report, April 1993
 ***Excess Capacity based on Normal Operating Capacity minus Annual Usage.
 ****EPA Form Codes identified in USEPA 1991 Hazardous Waste Report Instructions and Forms, pg. 87.

APPENDIX 1A DESIGN & OPERATING CAPACITIES OF T MIXED WASTE TREATMENT UNITS - EXISTING TS

Treatment Unit Name (Associated BDAT)	*Design/Permit Capacity	**Normal Operating Capacity	Annual Usage		***Excess Capacity	Allowable Wastestreams						DOE I.D. Number
			Mixed Waste	Hazardous Waste		EPA Waste Code			****EPA Form Code			
Area 514 Waste Water Filtration Unit (No LDR Standard)	4,480 gal/day (896 K gal/yr)	44 K gal/yr	44 K gal/yr	0 K gal/yr	0 K gal/yr	D004 D007 D010 D019 D027 D030 D034 D038 F001 F004 F009	D005 D008 D011 D021 D028 D032 D035 D039 F002 F005	D006 D009 D018 D022 D029 D033 D036 D040 F003 F007	101 113 116 202 205 501 504 609	102 114 117 203 207 502 511	106 115 119 204 219 503 519	2403
Bldg. 513 Solidification Unit (NEUTR, STABL)	1,760 gal/day (1,332 M ³ /yr)	2,100 M ³ /yr	40 M ³ /yr	0 M ³ /yr	2,060 M ³ /yr	All D Codes All Applicable P Codes All Applicable U Codes F001 F004 F009	F002 F005	F003 F007	101 104 107 110 114 119 203 206 209 212 302 305 308 311 314 319 405 409 503 506 509 512 515 604	102 105 108 111 115 201 204 207 210 219 303 306 309 312 315 403 406 501 504 507 510 513 516	103 106 109 113 116 202 205 208 211 301 304 307 310 313 316 404 407 502 505 508 511 514 519	2401 2403 2404 2409 2410 2451 (1) 2453 (1) 2454

(1) Wastestream needs additional characterization but may be treated by solidification

- *Issuance of Part B Permit pending, hazardous waste facilities currently under Interim Status. Yearly capacities based on 200 operational days per year.
- **Normal Operating Capacity as identified in the DOE Mixed Waste Inventory Report, April 1993
- ***Excess Capacity based on Normal Operating Capacity minus Annual Usage.
- ****EPA Form Codes identified in USEPA 1991 Hazardous Waste Report Instructions and Forms, pg. 87.

APPENDIX 1B DESIGN & OPERATING CAPACITIES OF THE MIXED WASTE TREATMENT UNITS - PLANNED UNITS

Treatment Unit Name (Associated BDAT)	*Design/Permit Capacity	**Normal Operating Capacity	Annual Usage		***Excess Capacity	Allowable Wastestreams						DOE I.D. Number
			Mixed Waste	Hazardous Waste		EPA Waste Code			****EPA Form Code			
Area 514-1 Tank Blending Unit - Proposed Unit (CHOXD, NEUTR, DEACT)	20,160 gal/day (4,032 K gal/yr)	367K gal/yr	20 K gal/yr	20 K gal/yr	327 K gal/yr	D001 D004 D007 D010 D019 D027 D030 D034 D038 F001 F004 F009	D002 D005 D008 D011 D021 D028 D032 D035 D039 F002 F005	D003 D006 D009 D018 D022 D029 D033 D036 D040 F003 F007	101 104 107 110 113 116 202 205 209 212 519	102 105 108 111 114 119 203 206 210 219 609	103 106 109 112 115 201 204 207 211 504	2403 2448(MTRU)
Area 514-1 Portable Blending Unit - Proposed Unit (CARBN, CHOXD, CHRED, NEUTR, DEACT, PRECP)	194,400 gal/day (38,800K gal/yr)	367K gal/yr	60 K gal/yr	200 K gal/yr	107 K gal/yr	D001 D004 D007 D010 D019 D027 D030 D034 D038 F001 F004 F009	D002 D005 D008 D011 D021 D028 D032 D035 D039 F002 F005	D003 D006 D009 D018 D022 D029 D033 D036 D040 F003	101 104 107 110 113 116 202 205 209 212 519	102 105 108 111 114 119 203 206 210 219 609	103 106 109 112 115 201 204 207 211 504	2403 2409
Area 514-1 Centrifugation Unit - Proposed Unit (No LDR Standard)	12,682 gal/day (2,536 K gal/yr)	367K gal/yr	20 K gal/yr	20 K gal/yr	327 K gal/yr	D001 D004 D007 D010 D019 D027 D030 D034 D038 F001 F004 F009	D002 D005 D008 D011 D021 D028 D032 D035 D039 F002 F005	D003 D006 D009 D018 D022 D029 D033 D036 D040 F003	101 104 107 114 201 204 207 211 502 505 508 511	102 105 110 116 202 205 209 219 503 506 509 609	103 106 113 119 203 206 210 501 504 507 510	2400 2403 2408 2409 2427 2433

*Issuance of Part B Permit pending, hazardous waste facilities currently under Interim Status. Yearly capacities based on 200 operational days per year.

**Normal Operating Capacity as identified in the DOE Mixed Waste Inventory Report, April 1993

***Excess Capacity based on Normal Operating Capacity minus Annual Usage.

****EPA Form Codes identified in USEPA 1991 Hazardous Waste Report Instructions and Forms, pg. 87.

APPENDIX 1B DESIGN & OPERATING CAPACITIES OF T MIXED WASTE TREATMENT UNITS - PLANNED TS

Treatment Unit Name (Associated BDAT)	*Design/Permit Capacity	**Normal Operating Capacity	Annual Usage		***Excess Capacity	Allowable Wastestreams						DOE I.D. Number
			Mixed Waste	Hazardous Waste		EPA Waste Code			****EPA Form Code			
Area 514-1 Carbon Adsorption Unit - Proposed Unit (CARBN)	194,400 gal/day (38,800K gal/yr)	367 K gal/yr	60 K gal/yr	200 K gal/yr	107 K gal/yr	D001	D002	D003	101	102	103	2400
						D004	D005	D006	104	105	106	2403
						D007	D008	D009	107	108	109	2408
						D010	D011	D018	110	111	112	2409
						D019	D021	D022	113	114	115	2427
						D027	D028	D029	116	119	202	2433
						D030	D032	D033	203	204	205	
						D034	D035	D036	206	207	219	
						D038	D039	D040	501	502	503	
						F001	F002	F003	504	505	506	
						F004	F005	F007	507	508	509	
						F009			510	511	519	
									609			
Area 514-1 Cold Vapor Evaporation Unit - Proposed Unit (No LDR Standard)	5,000 gal/day (1,000 K gal/yr)	367 K gal/yr	60 K gal/yr	200 K gal/yr	107 K gal/yr	D001	D002	D003	101	102	103	2403
						D004	D005	D006	104	105	106	2409
						D007	D008	D009	107	109	110	
						D010	D011	D018	113	114	115	
						D019	D021	D022	116	119	201	
						D027	D028	D029	202	203	204	
						D030	D032	D033	205	207	209	
						D034	D035	D036	210	211	219	
						D038	D039	D040	501	502	503	
						F001	F002	F003	504	505	510	
						F004	F005	F007	511	609		
						F009						

*Issuance of Part B Permit pending, hazardous waste facilities currently under Interim Status. Yearly capacities based on 200 operational days per year.

**Normal Operating Capacity as identified in the DOE Mixed Waste Inventory Report, April 1993

***Excess Capacity based on Normal Operating Capacity minus Annual Usage.

****EPA Form Codes identified in USEPA 1991 Hazardous Waste Report Instructions and Forms, pg. 87.

Waste Stream ID#	BDAT	AMLM	BIOG	CARB	CHRD	DECT	FSUB	HLVT	IMERC	INCN	LLEXT	MACRO	PRECP	RBER	RCOR	RMETL	RORG	RTHRM	STABL	SSTRP	WETOX
2400										X							X		X		
2401						X	X			X								X	X		
2402					X	X		X	X	X			X					X	X		
2403			X	X	X	X				X	X		X						X	X	
2404					X					X			X						X		
2405					X	X		X		X								X	X		
2407						X													X		
2408					X		X			X									X		
2409										X									X		
2410					X					X			X					X	X		
2412						X															
2419						X				X									X		
2424					X					X			X					X	X		
2427					X					X									X		
2430					X			X		X			X						X		
2433					X	X				X			X						X		
2435					X			X		X			X						X		
2444												X									
2446																					
2448					X	X													X		
2449						X				X									X		
2450										X											
2451										X									X		
2452		X																			
2453					X					X									X		
2454					X		X			X									X		

Appendix 3.2

Process Flow Charts for Section 3.1

2401 - LLM Filter Cake
 2404 - LLM Sand and Soil
 2410 - LLM Soil-1
 *2454 - LLM Organic Sludges and Particulates
 *Debris-Soil Separation for 2454

2403 - LLM Wash Waters

APPENDIX 3.3

RESERVED

Appendix 3.4

Ranges of Costs Associated with Unit Operations to Treat Mixed Organic Waste Streams (Costs are in thousands of dollars)

Waste Stream ID#	Capital Costs (Minimum)	Capital Costs (Maximum)	Annual Operating Costs (Minimum)	Annual Operating Costs (Maximum)
2400	33	401	8	94
2408	228	2,799	53	657
2409	1,071	13,152	251	3,087
2427	136	1,671	32	392
2433	25	308	6	72
Totals	1,493	18,331	350	4,302

Note: The cost estimates given above assume that the treatment units listed below are built and operated. The minimum capital and operating costs are engineering estimates based on the weight percent (compared to the total current inventory) of each waste stream times the total of all the treatment unit costs in each of the above categories. The maximum costs are based on a multiplication factor which is applied to the minimum value and was determined from current LLNL design, installation and operating experience.

Treatment Units

Bleaching
Carbon Adsorber
Evaporator
Microfiltration
Screening
Solidification
Washer

Burn(Hydrogen)
Carbon Regenerator
Filtration
Portable Blending
Shredder
Tank Blending
Water Reactor

Centrifuge
Distillation (organics)
Desorber(hydrogen)
Retort (mercury still)
Size Reduction
Thermal Desorber
Organic Destruction

OFF-SITE FACILITY

OPTIONS TABLE

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
Argonne National Lab	Alkali Metal Reaction Booths	Existing, but currently not being used	Chemical Oxidation	1)Aqueous Liquids 2)Organic Liquids 3)Reactive Metals	N	2)2408,2433,2427,2409
Fernald Environmental Management Project	UNH Treatment Facility	Currently in Use	1)Chemical Precipitation 2) Neutralization	1) Chemical Precipitation 2) Aqueous Liquids 3) Organic Liquids	N	3) 2408, 2433, 2427, 2409
Hanford Site	242-A Evaporator	Existing, but currently not being used	Evaporation	1) Aqueous Liquids 2) Organic Liquids	Y	2) 2408, 2433, 2427, 2409, 2446
			Ion Exchange	1) Aqueous Liquids 2) Organic Liquids	Y	2) 2408, 2433, 2427, 2409
Hanford Site	Thermal Treatment Facility	Planned/under construction	Incineration	1) Aqueous Liquids 2) Lab Packs w/Metals 3) Lab Packs without metals 4) Organic Debris 5) organic Liquids 6) Organic Sludges/Particulates	Y	3) 2400 5) 2408, 2433, 2427, 2409
Hanford Site	Wrap I	Planned/under construction	Adsorption	1) Aqueous Liquids 2) Heterogeneous Debris 3) Inorganic Debris 4) Organic Liquids	y	4) 2408, 2433, 2427, 2409
			Compaction	Organic Debris	Y	2419
			Stabilization	1) Aqueous Liquids 2) Heterogeneous Debris 3) Organic Debris 4) Organic Liquids	Y	4) 2408, 2433, 2427, 2409
Idaho National Engineering Laboratory	Bench Scale Treatments	Planned/under Construction	Ion Exchange	1) Aqueous Liquids 2) Organic Liquids	Y	2) 2408, 2433, 2427, 2409

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
	Thermal Destruction System	Planned/under construction	Thermal Destruction	1) Aqueous Liquids 2) Heterogeneous Debris 3) Lab Packs w/Metals 4) Lab Packs w/o Metals 5) Organic Debris 6) Organic Liquids 7) Organic Sludges/Particulates 8) Organic Solids	Y	4) 2400 6) 2408, 2433, 2427, 2409
Idaho National Engineering Laboratory	Mixed Low-Level Waste Treatment Facility	Planned/under construction	Chemical Precipitation	1) Aqueous Liquids 2) Organic Liquids	N	2) 2408, 2433, 2427, 2409
			Incineration	1) Aqueous Liquids 2) Heterogeneous Debris 3) Lab Packs w/ Metals 4) Lab packs w/o Metals 5) Organic Debris 6) Organic Liquids 7) Organic Sludges/Particulates 8) Organic Solids	N	6) 2408, 2433, 2427, 2409
			Macroencapsulation	1) Elemental Lead 2) Heterogeneous Debris 3) Inorganic Debris 4) Inorganic Solids 5) Organic Debris 6) Organic Solids	N	1) 2407

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
			Stabilization	1) Aqueous Liquids 2) Beryllium Dust 3) Cemented Solids 4) Heterogeneous Debris 5) Inorganic Sludges/Particulates 6) Inorganic Solids 7) Organic Liquids 8) Organic Sludges/Particulates 9) Organic Solids 10) Soil w/<50% Debris 11) Soils	N	7) 2408, 2433, 2427, 2409
Idaho National Engineering Laboratory	WERF Incinerator	Existing, but currently not being used	Incineration	1) Lab Packs w/Metals 2) Lab Packs w/o Metals 3) Organic Debris 4) Organic Liquids 5) Organic Sludges/Particulates 6) Organic Solids	N	2) 2400 4) 2408, 2433, 2427, 2409
			Neutralization	1) Aqueous Liquids 2) Organic Liquids	Y	2) 2408, 2433, 3427, 2409
			Stabilization	1) Aqueous Liquids 2) Inorganic Sludges/Particulates 3) Organic Liquids 4) Organic Sludges/Particulates	Y	3) 2408, 2433, 2427, 2409
	Amalgamation Unit	Planned	Amalgamation	Liquid Mercury	N	2452
			Size Reduction	1) Cemented Solids 2) Elemental Lead 3) Heterogeneous Debris 4) Inorganic Debris	N	2) 2407
	Neutralization Unit	Planned	Neutralization	1) Aqueous Liquids 2) Organic Liquids	N	2) 2408, 2433, 2427, 2409

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
	Stabilization Unit	Existing, but currently not being used	Stabilization	1) Aqueous Liquids 2) Cemented Solids 3) Heterogeneous Debris 4) Inorganic Debris 5) Inorganic Sludges/Particulates 6) Inorganic Solids 7) Organic Liquids 8) Organic Sludges/Particulates 9) Soil w/<50% Debris 10) Soils	N	7) 2408, 2433, 2427, 2409
	Carbon Adsorption Unit	Planned/under construction	Carbon Adsorption	1) Aqueous Liquids 2) Organic Liquids	N	2) 2408, 2433, 2427, 2409
	Centrifugation Unit	Planned/under construction	Centrifugation	1) Aqueous Liquids 2) Organic Liquids	N	2) 2408, 2433, 2427, 2409
	Cold Vapor Evaporation Unit	Planned/under construction	Evaporation	1) Aqueous Liquids 2) Organic Liquids	N	2) 2408, 2433, 2427, 2409
	Portable Blending Unit	Planned/under construction	Neutralization	1) Aqueous Liquids 2) Organic Liquids	N	2) 2433, 2427, 2409
	Tank Blending Unit	Planned/under construction		1) Aqueous Liquids 2) Organic Liquids	N	2) 2408, 2433, 2427, 2409
Los Alamos National Laboratory	Liquid Feed System	Existing, but currently not being used	Incineration	1) Aqueous Liquids 2) Lab Packs w/Metals 3) Lab Packs w/o Metals 4) Organic Liquids	Y	3) 2400 4) 2408, 2433, 2427, 2409
			Incineration	1) Inorganic Sludges/Particulates 2) Inorganic Sludges/Particulates 3) Lab Packs w/Metals 4) Lab Packs w/o Metals	Y	4) 2400

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
	Detox Skid	Planned/under construction	Chemical Oxidation	1) Aqueous Liquids 2) Organic Liquids 3) Reactive Metals	Y	2) 2408, 2433, 2427, 2409
	Lead Decontamination Trailer	Currently in use	Lead Decon/Recycle	Elemental Lead	N	2407
	Scintillation Vial Crusher	Currently in use	Crushing	1) Aqueous Liquids 2) Organic Liquids	Y	2) 2408, 2433, 2427, 2409
	Waste Immobilization Facility		Vitrification	1) Beryllium Dust 2) Elemental Lead 3) Inorganic Sludges/Particulates 4) Inorganic Solids 5) Organic Sludges/Particulates 6) Reactive Metals 7) Soil w/ <50% Debris 8) Soils		1) 2407 2) 2407
Mound Facility	Mound Glass Melter	Existing, but currently not being used		1) Aqueous Liquids 2) Cemented Solids 3) Inorganic Sludges/Particulates 4) Organic Debris 5) Organic Liquids	N	5) 2408, 2433, 2427, 2409
	Non-Radiological Waste Treatment Plant	Existing, but currently not being used	Waste Water	1) Aqueous Liquids 2) Organic Liquids	Y	2) 2408, 2433, 2427, 2409
	Waste Staging	Currently in use	Bulking	1) Lab Packs w/Metals 2) Lab Packs w/o Metals		2) 2400
			Neutralization	1) Aqueous Liquids 2) Inorganic Sludges/Particulates 3) Organic Liquids 4) Organic Sludges/particulates		3) 2408, 2433, 2427, 2409
	K-25 Site TSCA Incinerator	Currently in Use	Incineration	Aqueous Liquids	N	2403

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
Oak Ridge National Lab	Liquid Low-Level Waste Evaporation Facility	Currently in Use	Evaporation	1)Aqueous Liquids 2) Organic Liquids	Y	2)2408,2433,2427,2409
			Ion Exchange	1)Aqueous Liquids 2) Organic Liquids	Y	2)2408,2433,2427,2409
	Process Waste Treatment Plant	This facility is not designed for mixed waste treatment.	Waste Water	1)Aqueous Liquids 2) Organic Liquids	Y	2)2408,2433,2427,2409
Oak Ridge Y-12 Plant	Biodenitrification Unit	Currently in Use	Biodegradation	1)Aqueous Liquids 2) Organic Liquids 3)Organic Sludges/Particulates	N	2)2408,2433,2427,2409
			Distillation	1)Aqueous Liquids 2) Organic Liquids	N	2)2408,2433,2427,2409
	Cyanide Treatment Facility	Currently in Use	Chemical Oxidation	1)Aqueous Liquids 2) Organic Liquids 3)Reactive Metals	N	2)2408,2433,2427,2409
	Disposal Area Remedial Actions Liquid Storage Treatment	Currently in Use	Oil/Water Separation	1)Aqueous Liquids 2) Organic Liquids	N	2)2408,2433,2427,2409
	Oak Ridge Reservation Mixed Waste Treatment Facility	Planned, Under Construction	Decontamination	1)Elemental Lead (activated and non-activated) 2)Heterogeneous Debris 3)Inorganic Debris 4)Inorganic Solids 5)Organic Debris 6)Organic Solids	N	1)2407
			Incineration	1)Aqueous Liquids 2)Cemented Solids 3)Lab Packs with Metals 4)Lab Packs without Metals 5)Organic Debris 6)Organic Liquids 7)Organic Sludges/Particulates 8)Organic Solids	N	4)2400 6)2408,2433,2427,2409

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
			Stabilization	1)Aqueous Liquids 2)Beryllium Dust 3)Cemented Solids 4)Heterogeneous Debris 5)Inorganic Debris 6)Inorganic Solids 7)Organic Sludges/Particulates 8)Organic Solids 9)Soil with <50% Debris 10)Soils	N	2)2407 3)2407
	Plating Rinsewater Treatment Facility	Currently in Use	Cyanide Destruction	1)Aqueous Liquids 2)Organic Liquids	N	2)2408,2433,2427,2409
			Filtration	1)Aqueous Liquids 2)Organic Liquids	N	2)2408,2433,2427,2409
			Neutralization	1)Aqueous Liquids 2)Organic Liquids	N	2)2408,2433,2427,2409
Paducah Gaseous Diffusion Plant	C-400-C Evaporator	Currently in Use	Evaporation	1)Aqueous Liquids 2)Organic Liquids	N	2)2408,2433,2427,2409
	X-622 Groundwater Treatment Facility	Currently in Use	Carbon Adsorption	1)Aqueous Liquids 2)Organic Liquids	N	2)2408,2433,2427,2409
			Neutralization	1)Aqueous Liquids 2)Organic Liquids	N	2)2408,2433,2427,2409

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
			Unknown	1)Beryllium Dust 2)Calcine Solids 3)Inorganic Sludges/Particulates 4)Inorganic Solids 5)Lab Packs with Metals 6)Organic Sludges/Particulates 7)Organic Solids 8)Soil with <50% Debris 9)Soils	N	1)2407
Sandia National Lab - New Mexico	Radioactive and Mixed Waste Management Facility	Planned, Under Construction	?	1)Aqueous Liquids 2)Batteries 3)Cemented Solids 4)Elemental Lead (activated and non-activated) 5)Heterogeneous Debris 6)Inorganic Debris	N	4)2407
Savannah River Site	CIF Ashcrete	Planned, Under Construction	Stabilization	1)Aqueous Liquids 2)Beryllium Dust	N	2)2407
	CID Incinerator - Solid Feed System	Planned, Under Construction	Incineration	1)Aqueous Liquids 2)Inorganic Sludges/Particulates 3)Organic Debris 4)Organic Liquids 5)Reactive Metals	N	4)2408,2433,2427,2409
	Macroencapsulation Unit - SRS	Planned, Under Construction	Macroencapsulation	1)Elemental Lead (activates and non-activated) 2)Heterogeneous Debris 3)Inorganic Debris 4)Inorganic Solids 5)Organic Debris 6)Organic Solids	N	1)2407

SITE	SYSTEM	STATUS	TECHNOLOGY	TREAT GROUPS	TRU(Y/N)	LLNL IMWIR#
	Transuranic Waste Facility	Planned, Under Construction	Sorting & Repackaging	1)Inorganic Sludges/Particulates 2)Organic Debris 3)Organic Liquids 4)Soils with <50% Debris	Y	3)2408,2433,2427,2409
	Z-Area Saltstone Facility	Currently in Use	Stabilization	1)Aqueous Liquids 2)Inorganic Debris	N	
Scientific Ecology Group - Oak Ridge, TN	Scientific Ecology Group	Operation, Commercial	?	1)Beryllium Dust 2)Calcine Solids 3)Cemented Solids 4)Inorganic Sludges/Particulates 5)Inorganic Solids 6)Lab Packs with Metals 7)Organic Sludges/Particulates 8)Organic Solids 9)Soil with <50% Debris 10)Soils	N	1)2407
			Incineration/Thermal	1)Organic Debris 2)Organic Liquids 3)Organic Sludges/Particulates 4)Organic Solids	N	2)2408,2433,2427,2409

APPENDIX 3.6

RESERVED

Appendix 4.1

“Lawrence Livermore National Laboratory TRU WASTE INVENTORY 5/11/93”

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85000038TRU	12/18/92	625-B								
LL85000038TRU			332	drum	---					
LL85000038TRU								Am-241	1.50E+00	4.32E-01
LL85000038TRU								Pu-238	2.54E-01	1.47E-02
LL85000038TRU								Pu-238	2.60E-01	1.50E-02
LL85000038TRU								Pu-239	1.41E+00	1.76E+01
LL85000038TRU								Pu-240	8.92E-01	3.88E+00
LL85000038TRU								Pu-241	2.73E+01	2.63E-01
LL85000038TRU								Pu-242	3.82E-04	9.62E-02
LL85000043TRU		625-B								
LL85000043TRU			332	drum	---					
LL85000043TRU								Am-241	4.99E-02	1.44E-02
LL85000043TRU								Pu-238	1.97E-02	1.14E-03
LL85000043TRU								Pu-239	4.19E-01	6.66E+00
LL85000043TRU								Pu-240	9.67E-02	4.20E-01
LL85000043TRU								Pu-241	2.82E+00	2.71E-02
LL85000043TRU								Pu-242	1.13E-05	2.85E-03
LL85000279TRU		625-B								
LL85000279TRU			332	drum	---					
LL85000279TRU								Am-241	8.53E-02	2.46E-02
LL85000279TRU								Pu-238	1.45E-02	8.36E-04
LL85000279TRU								Pu-239	6.29E-02	1.00E+00
LL85000279TRU								Pu-240	5.08E-02	2.21E-01
LL85000279TRU								Pu-241	1.55E+00	1.49E-02
LL85000279TRU								Pu-242	2.17E-05	5.47E-03
LL85000284TRU		625-B								
LL85000284TRU			332	drum	---					
LL85000284TRU								Am-241	3.65E-02	1.05E-02
LL85000284TRU								Pu-238	1.44E-02	8.33E-04
LL85000284TRU								Pu-239	3.06E-01	4.86E+00
LL85000284TRU								Pu-240	7.06E-02	3.07E-01
LL85000284TRU								Pu-241	2.06E+00	1.98E-02
LL85000284TRU								Pu-242	8.26E-03	2.08E-03
LL85000298TRU		625-B								
LL85000298TRU			332	drum	---					
LL85000298TRU								Am-241	2.94E-02	8.47E-03
LL85000298TRU								Pu-238	1.16E-02	6.71E-04
LL85000298TRU								Pu-239	2.47E-01	3.92E+00
LL85000298TRU								Pu-240	5.69E-02	2.47E-01
LL85000298TRU								Pu-241	1.66E+00	1.60E-02
LL85000298TRU								Pu-242	6.66E-06	1.68E-03
LL85000316TRU		625-B								
LL85000316TRU			332	drum	---					
LL85000316TRU								Am-241	1.17E-01	3.38E-02
LL85000316TRU								Pu-238	1.99E-02	1.15E-03
LL85000316TRU								Pu-239	8.64E-02	1.37E+00
LL85000316TRU								Pu-240	6.97E-02	3.03E-01
LL85000316TRU								Pu-241	2.13E+00	2.05E-02
LL85000316TRU								Pu-242	2.98E-05	7.51E-03
LL85000321TRU		625-B								
LL85000321TRU			332	drum	---	Pb	16.34E+03 gm			
LL85000321TRU								Am-241	1.90E-02	5.49E-03
LL85000321TRU								Pu-238	7.52E-03	4.35E-04
LL85000321TRU								Pu-239	1.60E-01	2.54E+00
LL85000321TRU								Pu-240	3.69E-02	1.60E-01
LL85000321TRU								Pu-241	1.08E+00	1.04E-02
LL85000321TRU								Pu-242	4.32E-06	1.09E-03
LL85000321TRU								U-238	4.76E-06	1.40E+01
LL85000335TRU		625-B								
LL85000335TRU			332	drum	---					
LL85000335TRU								Am-241	8.76E-01	2.52E-01
LL85000335TRU								Pu-238	1.48E-01	8.58E-03
LL85000335TRU								Pu-239	6.45E-01	1.03E+01
LL85000335TRU								Pu-240	5.21E-01	2.26E+00
LL85000335TRU								Pu-241	1.59E+01	1.53E-01
LL85000335TRU								Pu-242	2.23E-04	5.61E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85000340TRU		625-B								
LL85000340TRU			332	drum	---					
LL85000340TRU								Am-241	5.08E-01	1.46E-01
LL85000340TRU								Pu-238	8.60E-02	4.97E-03
LL85000340TRU								Pu-239	3.74E-01	5.95E+00
LL85000340TRU								Pu-240	3.02E-01	1.31E+00
LL85000340TRU								Pu-241	9.25E+00	8.89E-02
LL85000340TRU								Pu-242	1.29E-04	3.26E-02
LL85000364TRU		625-B								
LL85000364TRU			332	drum	---					
LL85000364TRU								Am-241	3.59E-03	1.04E-03
LL85000364TRU								Pu-238	1.42E-03	8.20E-05
LL85000364TRU								Pu-239	3.01E-02	4.79E-01
LL85000364TRU								Pu-240	6.95E-03	3.02E-02
LL85000364TRU								Pu-241	2.03E-01	1.95E-03
LL85000364TRU								Pu-242	8.14E-07	2.05E-04
LL85000378TRU		625-B								
LL85000378TRU			332	drum	---					
LL85000378TRU								Am-241	8.62E-03	2.49E-03
LL85000378TRU								Am-241	3.47E-01	1.00E-01
LL85000378TRU								Pu-238	3.41E-03	1.97E-04
LL85000378TRU								Pu-239	7.23E-02	1.15E+00
LL85000378TRU								Pu-240	1.67E-02	7.26E-02
LL85000378TRU								Pu-241	4.88E-01	4.69E-03
LL85000378TRU								Pu-242	1.95E-06	4.92E-04
LL85000401TRU		612-1B								
LL85000401TRU			332	box	54x52x87					
LL85000401TRU								Am-241	4.93E-01	1.42E-01
LL85000401TRU								Pu-238	9.57E-02	5.53E-03
LL85000401TRU								Pu-239	7.14E-01	1.14E+01
LL85000401TRU								Pu-240	3.55E-01	1.54E+00
LL85000401TRU								Pu-241	1.07E+01	1.03E-01
LL85000401TRU								Pu-242	1.24E-04	3.12E-02
LL85000420TRU		625-B								
LL85000420TRU			332	drum	---					
LL85000420TRU								Am-241	3.79E-02	1.09E-02
LL85000420TRU								Am-241	1.15E-01	3.30E-02
LL85000420TRU								Pu-238	1.50E-02	8.65E-04
LL85000420TRU								Pu-238	1.21E-01	7.00E-03
LL85000420TRU								Pu-239	3.18E-01	5.05E+00
LL85000420TRU								Pu-240	7.33E-02	3.19E-01
LL85000420TRU								Pu-241	2.14E+00	2.06E-02
LL85000420TRU								Pu-241	2.39E+01	2.30E-01
LL85000420TRU								Pu-242	8.58E-06	2.16E-03
LL85000439TRU		625-B								
LL85000439TRU			332	drum	---					
LL85000439TRU								Am-241	2.61E-02	7.52E-03
LL85000439TRU								Pu-238	1.03E-02	5.96E-04
LL85000439TRU								Pu-239	2.19E-01	3.48E+00
LL85000439TRU								Pu-240	5.05E-02	2.20E-01
LL85000439TRU								Pu-241	1.48E+00	1.42E-02
LL85000439TRU								Pu-242	5.91E-06	1.49E-03
LL85000444TRU		625-B								
LL85000444TRU			332	drum	---					
LL85000444TRU								Am-241	2.17E-01	6.26E-02
LL85000444TRU								Pu-238	4.21E-02	2.44E-03
LL85000444TRU								Pu-239	3.14E-01	5.00E+00
LL85000444TRU								Pu-240	1.56E-01	6.79E-01
LL85000444TRU								Pu-241	4.73E+00	4.55E-02
LL85000444TRU								Pu-242	5.46E-05	1.37E-02
LL85000458TRU		612-1B								
LL85000458TRU			332	box	54x52x87					
LL85000458TRU								Am-241	1.27E-02	3.67E-03
LL85000458TRU								Pu-238	5.03E-03	2.91E-04
LL85000458TRU								Pu-239	1.07E-01	1.70E+00
LL85000458TRU								Pu-240	2.47E-02	1.07E-01
LL85000458TRU								Pu-241	7.21E-01	6.93E-03
LL85000458TRU								Pu-242	2.89E-06	7.2E-04

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85000463TRU		612-1B								
LL85000463TRU			332	box	54x52x87					
LL85000463TRU								Am-241	1.73E-03	4.99E-04
LL85000463TRU								Pu-238	6.84E-04	3.95E-05
LL85000463TRU								Pu-239	1.45E-02	2.31E-01
LL85000463TRU								Pu-240	3.35E-03	1.46E-02
LL85000463TRU								Pu-241	9.79E-02	9.42E-04
LL85000463TRU								Pu-242	3.92E-07	9.89E-05
LL85000482TRU	9/4/92	625-B								
LL85000482TRU			332	drum	--					
LL85000482TRU								Am-241	6.08E-01	1.75E-01
LL85000482TRU								Pu-238	1.03E-01	5.96E-03
LL85000482TRU								Pu-239	4.48E-01	7.13E+00
LL85000482TRU								Pu-240	3.62E-01	1.57E+00
LL85000482TRU								Pu-241	1.11E+01	1.07E-01
LL85000482TRU								Pu-242	1.55E-04	3.90E-02
LL85000496TRU	2/12/93	625-B								
LL85000496TRU			332	drum	--					
LL85000496TRU								Am-241	7.34E-02	2.12E-02
LL85000496TRU								Pu-238	2.90E-02	1.68E-03
LL85000496TRU								Pu-239	6.16E-01	9.79E+00
LL85000496TRU								Pu-240	1.42E-01	6.18E-01
LL85000496TRU								Pu-241	4.15E+00	3.99E-02
LL85000496TRU								Pu-242	1.66E-05	4.19E-03
LL85000509TRU		625-B								
LL85000509TRU			332	drum	--					
LL85000509TRU								Am-241	1.12E-01	3.24E-02
LL85000509TRU								Pu-238	4.44E-02	2.57E-03
LL85000509TRU								Pu-239	9.44E-01	1.50E+01
LL85000509TRU								Pu-240	2.18E-01	9.47E-01
LL85000509TRU								Pu-241	6.36E+00	6.11E-02
LL85000509TRU								Pu-242	2.55E-05	6.42E-03
LL85000528TRU	9/24/92	625-B								
LL85000528TRU			332	drum	--					
LL85000528TRU								Am-241	6.94E-02	2.00E-02
LL85000528TRU								Pu-238	2.74E-02	1.58E-03
LL85000528TRU								Pu-239	5.82E-01	9.26E+00
LL85000528TRU								Pu-240	1.34E-01	5.84E-01
LL85000528TRU								Pu-241	3.92E+00	3.77E-02
LL85000528TRU								Pu-242	1.57E-05	3.96E-03
LL85000533TRU		625-B								
LL85000533TRU			332	drum	--	TCE	10.00E-05 ltr			
LL85000533TRU								Am-241	9.10E-02	2.62E-02
LL85000533TRU								Pu-238	3.59E-02	2.08E-03
LL85000533TRU								Pu-239	7.63E-01	1.21E+01
LL85000533TRU								Pu-240	1.76E-01	7.66E-01
LL85000533TRU								Pu-241	5.14E+00	4.94E-02
LL85000533TRU								Pu-242	2.06E-05	5.19E-03
LL85000547TRU	8/26/92	625-B								
LL85000547TRU			332	drum	--					
LL85000547TRU								Am-241	1.58E-03	4.55E-04
LL85000547TRU								Pu-238	6.23E-04	3.60E-05
LL85000547TRU								Pu-239	1.32E-02	2.10E-01
LL85000547TRU								Pu-240	3.05E-03	1.33E-02
LL85000547TRU								Pu-241	8.92E-02	8.58E-04
LL85000547TRU								Pu-242	3.57E-07	9.00E-05
LL85000552TRU		625-B								
LL85000552TRU			234	drum	--					
LL85000552TRU								Am-241	2.61E-04	7.51E-05
LL85000552TRU								Pu-238	5.06E-05	2.93E-06
LL85000552TRU								Pu-239	3.77E-04	6.00E-03
LL85000552TRU								Pu-240	1.88E-04	8.16E-04
LL85000552TRU								Pu-241	5.68E-03	5.46E-05
LL85000552TRU								Pu-242	6.55E-08	1.65E-05

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85000571TRU		625-B								
LL85000571TRU			332	drum	---					
LL85000571TRU								Am-241	1.39E-01	3.99E-02
LL85000571TRU								Pu-238	5.47E-02	3.16E-03
LL85000571TRU								Pu-239	1.16E+00	1.85E+01
LL85000571TRU								Pu-240	2.68E-01	1.17E+00
LL85000571TRU								Pu-241	7.83E+00	7.53E-02
LL85000571TRU								Pu-242	3.14E-05	7.91E-03
LL85000585TRU	5/15/92	625-B								
LL85000585TRU			332	drum	---					
LL85000585TRU								Am-241	1.37E-01	3.94E-02
LL85000585TRU								Pu-238	5.40E-02	3.12E-03
LL85000585TRU								Pu-239	1.15E+00	1.82E+01
LL85000585TRU								Pu-240	2.65E-01	1.15E+00
LL85000585TRU								Pu-241	7.72E+00	7.43E-02
LL85000585TRU								Pu-242	3.10E-05	7.80E-03
LL85000590TRU	2/12/93	625-B								
LL85000590TRU			332	drum	---					
LL85000590TRU								Am-241	1.08E-01	3.10E-02
LL85000590TRU								Pu-238	4.25E-02	2.46E-03
LL85000590TRU								Pu-239	9.03E-01	1.44E+01
LL85000590TRU								Pu-240	2.08E-01	9.06E-01
LL85000590TRU								Pu-241	6.08E+00	5.85E-02
LL85000590TRU								Pu-242	2.44E-05	6.14E-03
LL85000613TRU	11/25/92	625-B								
LL85000613TRU			332	drum	---	LEAD	3.314 gm			
LL85000613TRU								Am-241	2.83E-01	8.15E-02
LL85000613TRU								Pu-238	4.79E-02	2.77E-03
LL85000613TRU								Pu-239	2.08E-01	3.31E+00
LL85000613TRU								Pu-240	1.68E-01	7.31E-01
LL85000613TRU								Pu-241	5.15E+00	4.95E-02
LL85000613TRU								Pu-242	7.20E-05	1.81E-02
LL85000632TRU	9/4/92	625-B								
LL85000632TRU			332	drum	---					
LL85000632TRU								Am-241	1.20E+00	3.45E-01
LL85000632TRU								Pu-238	2.03E-01	1.17E-02
LL85000632TRU								Pu-239	8.82E-01	1.40E+01
LL85000632TRU								Pu-240	7.12E-01	3.09E+00
LL85000632TRU								Pu-241	2.18E+01	2.10E-01
LL85000632TRU								Pu-242	3.05E-04	7.67E-02
LL85000646TRU	2/12/93	625-B								
LL85000646TRU			332	drum	---					
LL85000646TRU								Am-241	5.12E-02	1.48E-02
LL85000646TRU								Pu-238	2.02E-02	1.17E-03
LL85000646TRU								Pu-239	4.30E-01	6.83E+00
LL85000646TRU								Pu-240	9.92E-02	4.31E-01
LL85000646TRU								Pu-241	2.90E+00	2.79E-02
LL85000646TRU								Pu-242	1.16E-05	2.92E-03
LL85000670TRU	5/21/93	625-B								
LL85000670TRU			332	drum	---					
LL85000670TRU								Am-241	1.29E+00	3.72E-01
LL85000670TRU								Pu-238	2.19E-01	1.26E-02
LL85000670TRU								Pu-239	9.52E-01	1.51E+01
LL85000670TRU								Pu-240	7.68E-01	3.34E+00
LL85000670TRU								Pu-241	2.35E+01	2.26E-01
LL85000670TRU								Pu-242	3.29E-04	8.28E-02
LL85001151TRU		612-1B								
LL85001151TRU			332	SWB	---					
LL85001151TRU								Am-241	5.12E-01	1.48E-01
LL85001151TRU								Pu-238	8.68E-02	5.01E-03
LL85001151TRU								Pu-239	3.77E-01	6.00E+00
LL85001151TRU								Pu-240	3.05E-01	1.32E+00
LL85001151TRU								Pu-241	9.32E+00	8.97E-02
LL85001151TRU								Pu-242	1.30E-04	3.28E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85100014TRU		625-B								
LL85100014TRU			332	drum	--					
LL85100014TRU								Am-241	1.69E-01	4.87E-02
LL85100014TRU								Pu-238	3.28E-02	1.90E-03
LL85100014TRU								Pu-239	2.45E-01	3.89E+00
LL85100014TRU								Pu-240	1.22E-01	5.29E-01
LL85100014TRU								Pu-241	3.68E+00	3.54E-02
LL85100014TRU								Pu-242	4.25E-05	1.07E-02
LL85100028TRU		625-B								
LL85100028TRU			332	drum	--	bismuth	25.00E+00 gm			
LL85100028TRU						cadmium	62.50E-01 gm			
LL85100028TRU						lead	12.50E+00 gm			
LL85100028TRU						tin	62.50E-01 gm			
LL85100028TRU								Am-241	8.76E-02	2.52E-02
LL85100028TRU								Pu-238	1.48E-02	8.58E-04
LL85100028TRU								Pu-239	6.45E-02	1.03E+00
LL85100028TRU								Pu-240	5.21E-02	2.26E-01
LL85100028TRU								Pu-241	1.59E+00	1.53E-02
LL85100028TRU								Pu-242	2.23E-05	5.61E-03
LL85100132TRU		625-B								
LL85100132TRU			332	drum	--					
LL85100132TRU								Am-241	1.45E-02	4.17E-03
LL85100132TRU								Pu-238	5.72E-03	3.30E-04
LL85100132TRU								Pu-239	1.21E-01	1.93E+00
LL85100132TRU								Pu-240	2.80E-02	1.22E-01
LL85100132TRU								Pu-241	8.18E-01	7.87E-03
LL85100132TRU								Pu-242	3.28E-06	8.26E-04
LL85100269TRU		625-B								
LL85100269TRU			332	drum	--					
LL85100269TRU								Am-241	1.25E-01	3.61E-02
LL85100269TRU								Pu-238	4.94E-02	2.86E-03
LL85100269TRU								Pu-239	1.05E+00	1.67E+01
LL85100269TRU								Pu-240	2.42E-01	1.05E+00
LL85100269TRU								Pu-241	7.07E+00	6.80E-02
LL85100269TRU								Pu-242	2.83E-05	7.14E-03
LL85100274TRU		625-B								
LL85100274TRU			332	drum	--					
LL85100274TRU								Am-241	6.88E-02	1.98E-02
LL85100274TRU								Pu-238	2.72E-02	1.57E-03
LL85100274TRU								Pu-239	5.77E-01	9.18E+00
LL85100274TRU								Pu-240	1.33E-01	5.79E-01
LL85100274TRU								Pu-241	3.89E+00	3.74E-02
LL85100274TRU								Pu-242	1.56E-05	3.93E-03
LL85100288TRU		625-B								
LL85100288TRU			332	drum	--					
LL85100288TRU								Am-241	9.97E-02	2.87E-02
LL85100288TRU								Pu-238	2.00E-04	1.16E-05
LL85100288TRU								Pu-239	3.94E-02	2.28E-03
LL85100288TRU								Pu-240	8.37E-01	1.33E+01
LL85100288TRU								Pu-241	1.93E-01	8.40E-01
LL85100288TRU								Pu-242	5.64E+00	5.42E-02
LL85100288TRU								Pu-242	2.26E-05	5.69E-03
LL85100306TRU		625-B								
LL85100306TRU			332	drum	--					
LL85100306TRU								Am-241	4.24E-01	1.22E-01
LL85100306TRU								Pu-238	7.19E-02	4.15E-03
LL85100306TRU								Pu-239	3.13E-01	4.97E+00
LL85100306TRU								Pu-240	2.52E-01	1.10E+00
LL85100306TRU								Pu-241	7.72E+00	7.43E-02
LL85100306TRU								Pu-242	1.08E-04	2.72E-02

SERIAL #	REC. @ HMM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85100325TRU		625-B								
LL85100325TRU			332	drum	---					
LL85100325TRU								Am-241	4.50E-01	1.30E-01
LL85100325TRU								Pu-238	8.73E-02	5.05E-03
LL85100325TRU								Pu-239	6.51E-01	1.04E+01
LL85100325TRU								Pu-240	3.24E-01	1.41E+00
LL85100325TRU								Pu-241	9.80E+00	9.42E-02
LL85100325TRU								Pu-242	1.13E-04	2.85E-02
LL85100330TRU		625-B								
LL85100330TRU			332	drum	---	lead	47.41E-01 gm			
LL85100330TRU								Am-241	4.51E+00	1.30E+00
LL85100330TRU								Am-241	1.84E+01	5.31E+00
LL85100330TRU								Pu-238	2.40E-01	1.38E-02
LL85100330TRU								Pu-239	1.01E+00	1.60E+01
LL85100330TRU								Pu-240	8.12E-01	3.53E+00
LL85100330TRU								Pu-241	2.49E+01	2.39E-01
LL85100330TRU								Pu-242	3.47E-04	8.74E-02
LL85100349TRU		625-B								
LL85100349TRU			332	drum	---					
LL85100349TRU								Am-241	2.55E-01	7.35E-02
LL85100349TRU								Pu-238	4.32E-02	2.50E-03
LL85100349TRU								Pu-239	1.88E-01	2.99E+00
LL85100349TRU								Pu-240	1.52E-01	6.60E-01
LL85100349TRU								Pu-241	4.65E+00	4.47E-02
LL85100349TRU								Pu-242	6.49E-05	1.64E-02
LL85100354TRU		625-B								
LL85100354TRU			332	drum	---					
LL85100354TRU								Am-241	4.36E-01	1.26E-01
LL85100354TRU								Pu-238	8.46E-02	4.89E-03
LL85100354TRU								Pu-239	6.31E-01	1.00E+01
LL85100354TRU								Pu-240	3.14E-01	1.36E+00
LL85100354TRU								Pu-241	9.49E+00	9.13E-02
LL85100354TRU								Pu-242	1.10E-04	2.76E-02
LL85100368TRU		625-B								
LL85100368TRU			332	drum	---					
LL85100368TRU								Am-241	1.18E-01	3.39E-02
LL85100368TRU								Pu-238	4.64E-02	2.68E-03
LL85100368TRU								Pu-239	9.86E-01	1.57E+01
LL85100368TRU								Pu-240	2.28E-01	9.90E-01
LL85100368TRU								Pu-241	6.65E+00	6.39E-02
LL85100368TRU								Pu-242	2.66E-05	6.71E-03
LL85100405TRU		625-B								
LL85100405TRU			332	drum	---					
LL85100405TRU								Am-241	6.10E-03	1.76E-03
LL85100405TRU								Pu-238	2.41E-03	1.39E-04
LL85100405TRU								Pu-239	5.36E-02	3.10E-03
LL85100405TRU								Pu-239	5.11E-02	8.13E-01
LL85100405TRU								Pu-240	1.18E-02	5.13E-02
LL85100405TRU								Pu-241	3.45E-01	3.31E-03
LL85100405TRU								Pu-241	8.32E+00	8.00E-02
LL85100405TRU								Pu-242	1.38E-06	3.48E-04
LL85100410TRU		625-B								
LL85100410TRU			332	drum	---					
LL85100410TRU								Am-241	5.65E-01	1.63E-01
LL85100410TRU								Pu-238	9.58E-02	5.54E-03
LL85100410TRU								Pu-239	4.17E-01	6.63E+00
LL85100410TRU								Pu-240	3.36E-01	1.46E+00
LL85100410TRU								Pu-241	1.03E+01	9.90E-02
LL85100410TRU								Pu-242	1.44E-04	3.62E-02
LL85100429TRU		625-B								
LL85100429TRU			332	drum	---					
LL85100429TRU								Am-241	9.00E-02	2.59E-02
LL85100429TRU								Pu-238	3.55E-02	2.05E-03
LL85100429TRU								Pu-239	7.55E-01	1.20E+01
LL85100429TRU								Pu-240	1.74E-01	7.58E-01
LL85100429TRU								Pu-241	5.09E+00	4.89E-02
LL85100429TRU								Pu-242	2.04E-05	5.14E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85100434TRU		625-B					50.00E+00			
LL85100434TRU			332	drum	---	aluminum	gm			
LL85100434TRU						trichloroethane	gm			
LL85100434TRU						trichloroethylene	ltr			
LL85100434TRU								Am-241	2.15E-01	6.19E-02
LL85100434TRU								Pu-238	8.49E-02	4.91E-03
LL85100434TRU								Pu-239	1.80E+00	2.87E+01
LL85100434TRU								Pu-240	4.16E-01	1.81E+00
LL85100434TRU								Pu-241	1.22E+01	1.17E-01
LL85100434TRU								Pu-242	4.87E-05	1.23E-02
LL85100453TRU		612-1B								
LL85100453TRU			332	box	54x52x87					
LL85100453TRU								Am-241	1.36E-02	3.93E-03
LL85100453TRU								Pu-238	5.39E-03	3.12E-04
LL85100453TRU								Pu-239	1.14E-01	1.82E+00
LL85100453TRU								Pu-240	2.64E-02	1.15E-01
LL85100453TRU								Pu-241	7.72E-01	7.42E-03
LL85100453TRU								Pu-242	3.09E-06	7.79E-04
LL85100467TRU		612-1B								
LL85100467TRU			332	box	54x52x87					
LL85100467TRU								Am-241	1.57E-03	4.54E-04
LL85100467TRU								Pu-238	6.22E-04	3.60E-05
LL85100467TRU								Pu-239	1.32E-02	2.10E-01
LL85100467TRU								Pu-240	3.05E-03	1.33E-02
LL85100467TRU								Pu-241	8.90E-02	8.56E-04
LL85100467TRU								Pu-242	3.57E-07	8.99E-05
LL85100472TRU		612-1B								
LL85100472TRU			332	box	62x97x77					
LL85100472TRU								Am-241	2.97E-02	8.56E-03
LL85100472TRU								Pu-238	1.17E-02	6.78E-04
LL85100472TRU								Pu-239	2.49E-01	3.96E+00
LL85100472TRU								Pu-240	5.75E-02	2.50E-01
LL85100472TRU								Pu-241	1.68E+00	1.61E-02
LL85100472TRU								Pu-242	6.73E-06	1.69E-03
LL85100486TRU		625-B								
LL85100486TRU			332	drum	---					
LL85100486TRU								Am-241	9.30E-03	2.68E-03
LL85100486TRU								Pu-238	1.58E-03	9.11E-05
LL85100486TRU								Pu-239	6.86E-03	1.09E-01
LL85100486TRU								Pu-240	5.53E-03	2.41E-02
LL85100486TRU								Pu-241	1.69E-01	1.63E-03
LL85100486TRU								Pu-242	2.37E-06	5.96E-04
LL85100491TRU		625-B								
LL85100491TRU			332	drum	---					
LL85100491TRU								Am-241	1.51E-02	4.36E-03
LL85100491TRU								Pu-238	5.97E-03	3.45E-04
LL85100491TRU								Pu-239	1.27E-01	2.02E+00
LL85100491TRU								Pu-240	2.93E-02	1.27E-01
LL85100491TRU								Pu-241	8.55E-01	8.22E-03
LL85100491TRU								Pu-242	3.43E-06	8.63E-04
LL85100504TRU		625-B								
LL85100504TRU			332	drum	---					
LL85100504TRU								Am-241	4.37E-02	1.26E-02
LL85100504TRU								Pu-238	1.73E-02	9.97E-04
LL85100504TRU								Pu-239	3.66E-01	5.83E+00
LL85100504TRU								Pu-240	8.46E-02	3.68E-01
LL85100504TRU								Pu-241	2.47E+00	2.37E-02
LL85100504TRU								Pu-242	9.90E-06	2.49E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85100523TRU		625-B								
LL85100523TRU			332	drum	---					
LL85100523TRU								Am-241	2.14E-02	6.16E-03
LL85100523TRU								Pu-238	8.43E-03	4.88E-04
LL85100523TRU								Pu-238	3.46E-02	2.00E-03
LL85100523TRU								Pu-239	1.79E-01	2.85E+00
LL85100523TRU								Pu-240	4.14E-02	1.80E-01
LL85100523TRU								Pu-241	1.21E+00	1.16E-02
LL85100523TRU								Pu-242	4.84E-06	1.22E-03
LL85100537TRU		625-B								
LL85100537TRU			332	drum	---					
LL85100537TRU								Am-241	2.75E-03	7.93E-04
LL85100537TRU								Pu-238	1.09E-03	6.28E-05
LL85100537TRU								Pu-239	2.31E-02	3.67E-01
LL85100537TRU								Pu-240	5.33E-03	2.32E-02
LL85100537TRU								Pu-241	1.56E-01	1.50E-03
LL85100537TRU								Pu-242	6.24E-07	1.57E-04
LL85100542TRU						FINE PARTICLES OF Cm-244	53.00E-03 gm			
LL85100542TRU		625-B								
LL85100542TRU			251	drum	---	ASBESTOS	90.70E+01 gm			
LL85100542TRU								Cm-244	4.30E+00	5.26E-02
LL85100561TRU	5/15/92	625-B								
LL85100561TRU			332	drum	---					
LL85100561TRU								Am-241	1.61E-01	4.63E-02
LL85100561TRU								Pu-238	2.72E-02	1.57E-03
LL85100561TRU								Pu-239	1.18E-01	1.88E+00
LL85100561TRU								Pu-240	9.55E-02	4.15E-01
LL85100561TRU								Pu-241	2.92E+00	2.81E-02
LL85100561TRU								Pu-242	4.09E-05	1.03E-02
LL85100575TRU		625-B								
LL85100575TRU			251	drum	---	2 hepa filters w/asbestos	90.72E+01 gm			
LL85100575TRU								Pu-238	1.20E-01	6.94E-03
LL85100580TRU	5/14/93	625-B								
LL85100580TRU			332	drum	---					
LL85100580TRU								Am-241	1.06E+00	3.06E-01
LL85100580TRU								Pu-238	1.80E-01	1.04E-02
LL85100580TRU								Pu-239	7.83E-01	1.25E+01
LL85100580TRU								Pu-240	6.32E-01	2.75E+00
LL85100580TRU								Pu-241	1.93E+01	1.86E-01
LL85100580TRU								Pu-242	2.70E-04	6.81E-02
LL85100599TRU		625-B								
LL85100599TRU			332	drum	---	Be	11.70E+01 gm			
LL85100599TRU								Am-241	6.76E-02	1.95E-02
LL85100599TRU								Pu-238	2.67E-02	1.54E-03
LL85100599TRU								Pu-239	5.67E-01	9.01E+00
LL85100599TRU								Pu-240	1.31E-01	5.69E-01
LL85100599TRU								Pu-241	3.82E+00	3.67E-02
LL85100599TRU								Pu-242	1.53E-05	3.86E-03
LL85100603TRU	5/15/92	625-B								
LL85100603TRU			332	drum	---					
LL85100603TRU								Am-241	9.43E-02	2.72E-02
LL85100603TRU								Pu-238	3.73E-02	2.15E-03
LL85100603TRU								Pu-239	7.91E-01	1.26E+01
LL85100603TRU								Pu-240	1.83E-01	7.94E-01
LL85100603TRU								Pu-241	5.33E+00	5.13E-02
LL85100603TRU								Pu-242	2.14E-05	5.38E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85100617TRU	5/14/93	625-B								
LL85100617TRU			332	drum	---					
LL85100617TRU								Am-241	4.09E-01	1.18E-01
LL85100617TRU								Pu-238	7.94E-02	4.59E-03
LL85100617TRU								Pu-239	5.92E-01	9.42E+00
LL85100617TRU								Pu-240	2.95E-01	1.28E+00
LL85100617TRU								Pu-241	8.91E+00	8.57E-02
LL85100617TRU								Pu-242	1.03E-04	2.59E-02
LL85100622TRU	9/4/92	625-B								
LL85100622TRU			332	drum	--					
LL85100622TRU								Am-241	2.07E-03	5.97E-04
LL85100622TRU								Pu-238	8.17E-04	4.72E-05
LL85100622TRU								Pu-239	1.74E-02	2.76E-01
LL85100622TRU								Pu-240	4.01E-03	1.74E-02
LL85100622TRU								Pu-241	1.17E-01	1.13E-03
LL85100622TRU								Pu-242	4.69E-07	1.18E-04
LL85100636TRU	10/23/92	625-B								
LL85100636TRU			332	drum	--					
LL85100636TRU								Am-241	1.85E-02	5.33E-03
LL85100636TRU								Pu-238	7.30E-03	4.22E-04
LL85100636TRU								Pu-239	1.55E-01	2.46E+00
LL85100636TRU								Pu-240	3.58E-02	1.56E-01
LL85100636TRU								Pu-241	1.04E+00	1.00E-02
LL85100636TRU								Pu-242	4.19E-06	1.05E-03
LL85100641TRU	10/23/92	625-B								
LL85100641TRU			332	drum	--					
LL85100641TRU								Am-241	4.35E-01	1.25E-01
LL85100641TRU								Pu-238	8.43E-02	4.87E-03
LL85100641TRU								Pu-239	6.29E-01	1.00E+01
LL85100641TRU								Pu-240	3.13E-01	1.36E+00
LL85100641TRU								Pu-241	9.46E+00	9.10E-02
LL85100641TRU								Pu-242	1.09E-04	2.75E-02
LL85100655TRU	2/12/93	625-B								
LL85100655TRU			332	drum	--					
LL85100655TRU								Am-241	1.16E-01	3.35E-02
LL85100655TRU								Pu-238	4.59E-02	2.65E-03
LL85100655TRU								Pu-239	9.75E-01	1.55E+01
LL85100655TRU								Pu-240	2.25E-01	9.78E-01
LL85100655TRU								Pu-241	6.57E+00	6.32E-02
LL85100655TRU								Pu-242	2.63E-05	6.63E-03
LL85100679TRU	5/21/93	625-B								
LL85100679TRU			332	drum	--					
LL85100679TRU								Am-241	5.74E-01	1.65E-01
LL85100679TRU								Pu-238	9.73E-02	5.62E-03
LL85100679TRU								Pu-239	4.23E-01	6.73E+00
LL85100679TRU								Pu-240	3.42E-01	1.49E+00
LL85100679TRU								Pu-241	1.05E+01	1.01E-01
LL85100679TRU								Pu-242	1.46E-04	3.68E-02
LL85101179TRU	12/18/92	625-B								
LL85101179TRU			332	drum	--					
LL85101179TRU								Am-241	3.18E-02	9.15E-03
LL85101179TRU								Pu-238	1.25E-02	7.25E-04
LL85101179TRU								Pu-239	2.66E-01	4.24E+00
LL85101179TRU								Pu-240	6.15E-02	2.67E-01
LL85101179TRU								Pu-241	1.80E+00	1.73E-02
LL85101179TRU								Pu-242	7.20E-03	1.81E-03
LL85101184TRU	5/21/93	625-B								
LL85101184TRU			332	drum	--					
LL85101184TRU								Am-241	7.47E-01	2.15E-01
LL85101184TRU								Pu-238	1.27E-01	7.32E-03
LL85101184TRU								Pu-239	5.51E-01	8.76E+00
LL85101184TRU								Pu-240	4.45E-01	1.93E+00
LL85101184TRU								Pu-241	1.36E+01	1.31E-01
LL85101184TRU								Pu-242	1.90E-04	4.79E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85200037TRU	4/30/93	625-B								
LL85200037TRU			332	drum	---					
LL85200037TRU								Am-241	8.50E-02	2.45E-02
LL85200037TRU								Pu-238	3.36E-02	1.94E-03
LL85200037TRU								Pu-239	7.13E-01	1.13E+01
LL85200037TRU								Pu-240	1.65E-01	7.15E-01
LL85200037TRU								Pu-241	4.80E+00	4.62E-02
LL85200037TRU								Pu-242	1.93E-05	4.85E-03
LL85200056TRU		625-B								
LL85200056TRU			332	drum	---					
LL85200056TRU								Am-241	7.57E-02	2.18E-02
LL85200056TRU								Pu-238	2.99E-02	1.73E-03
LL85200056TRU								Pu-239	6.35E-01	1.01E+01
LL85200056TRU								Pu-240	1.47E-01	6.37E-01
LL85200056TRU								Pu-241	4.28E+00	4.11E-02
LL85200056TRU								Pu-242	1.71E-05	4.32E-03
LL85200264TRU		625-B								
LL85200264TRU			332	drum	---					
LL85200264TRU								Am-241	3.11E-01	8.95E-02
LL85200264TRU								Pu-238	5.26E-02	3.04E-03
LL85200264TRU								Pu-239	2.29E-01	3.64E+00
LL85200264TRU								Pu-240	1.85E-01	8.03E-01
LL85200264TRU								Pu-241	5.66E+00	5.44E-02
LL85200264TRU								Pu-242	7.90E-05	1.99E-02
LL85200278TRU		625-B								
LL85200278TRU			332	drum	---					
LL85200278TRU								Am-241	5.87E-02	1.69E-02
LL85200278TRU								Pu-238	1.14E-02	6.58E-04
LL85200278TRU								Pu-239	8.49E-02	1.35E+00
LL85200278TRU								Pu-240	4.22E-02	1.84E-01
LL85200278TRU								Pu-241	1.28E+00	1.23E-02
LL85200278TRU								Pu-242	1.47E-05	3.71E-03
LL85200297TRU		625-B								
LL85200297TRU			332	drum	---					
LL85200297TRU								Am-241	2.42E-02	6.98E-03
LL85200297TRU								Pu-238	9.56E-03	5.53E-04
LL85200297TRU								Pu-239	2.03E-01	3.23E+00
LL85200297TRU								Pu-240	4.69E-02	2.04E-01
LL85200297TRU								Pu-241	1.37E+00	1.32E-02
LL85200297TRU								Pu-242	5.48E-06	1.38E-03
LL85200301TRU		625-B								
LL85200301TRU			251	drum	---					
LL85200301TRU								Am-241	6.00E-02	1.73E-02
LL85200301TRU								Cm-244	3.60E+00	4.40E-02
LL85200320TRU		625-B								
LL85200320TRU			332	drum	---	lead	45.00E+00 gm			
LL85200320TRU								Am-241	6.07E-01	1.75E-01
LL85200320TRU								Pu-238	1.03E-01	5.94E-03
LL85200320TRU								Pu-239	4.47E-01	7.11E+00
LL85200320TRU								Pu-240	3.61E-01	1.57E+00
LL85200320TRU								Pu-241	1.11E+01	1.06E-01
LL85200320TRU								Pu-242	1.54E-04	3.89E-02
LL85200382TRU		625-B								
LL85200382TRU			332	drum	---					
LL85200382TRU								Am-241	6.32E-02	1.82E-02
LL85200382TRU								Pu-238	2.50E-02	1.44E-03
LL85200382TRU								Pu-239	5.30E-01	8.43E+00
LL85200382TRU								Pu-240	1.22E-01	5.32E-01
LL85200382TRU								Pu-241	3.57E+00	3.44E-02
LL85200382TRU								Pu-242	1.43E-05	3.61E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85200396TRU		625-B					32.00E+00			
LL85200396TRU			332	drum	---	*lead	gm			
LL85200396TRU								Am-241	4.92E-02	1.42E-02
LL85200396TRU								Pu-238	1.94E-02	1.12E-03
LL85200396TRU								Pu-239	4.13E-01	6.57E+00
LL85200396TRU								Pu-240	9.53E-02	4.14E-01
LL85200396TRU								Pu-241	2.78E+00	2.68E-02
LL85200396TRU								Pu-242	1.12E-05	2.81E-03
LL85200400TRU		625-B					11.34E+01			
LL85200400TRU			332	drum	---	Pb(lead)	gm			
LL85200400TRU								Am-241	6.19E-02	1.79E-02
LL85200400TRU								Pu-238	2.45E-02	1.41E-03
LL85200400TRU								Pu-239	5.20E-01	8.26E+00
LL85200400TRU								Pu-240	1.20E-01	5.21E-01
LL85200400TRU								Pu-241	3.50E+00	3.37E-02
LL85200400TRU								Pu-242	1.40E-05	3.54E-03
LL85200419TRU		625-B								
LL85200419TRU			332	drum	---					
LL85200419TRU								Am-241	1.16E+00	3.35E-01
LL85200419TRU								Pu-238	1.97E-01	1.14E-02
LL85200419TRU								Pu-239	8.56E-01	1.36E+01
LL85200419TRU								Pu-240	6.91E-01	3.00E+00
LL85200419TRU								Pu-241	2.12E+01	2.03E-01
LL85200419TRU								Pu-242	2.96E-04	7.45E-02
LL85200424TRU		625-B								
LL85200424TRU			332	drum	---					
LL85200424TRU								Am-241	3.37E-02	9.70E-03
LL85200424TRU								Pu-238	1.33E-02	7.68E-04
LL85200424TRU								Pu-239	2.82E-01	4.49E+00
LL85200424TRU								Pu-240	6.51E-02	2.83E-01
LL85200424TRU								Pu-241	1.90E+00	1.83E-02
LL85200424TRU								Pu-242	7.62E-06	1.92E-03
LL85200438TRU		625-B								
LL85200438TRU			332	drum	---					
LL85200438TRU								Am-241	8.79E-02	2.53E-02
LL85200438TRU								Pu-238	1.49E-02	8.61E-04
LL85200438TRU								Pu-239	6.48E-02	1.03E+00
LL85200438TRU								Pu-240	5.23E-02	2.27E-01
LL85200438TRU								Pu-241	1.60E+00	1.54E-02
LL85200438TRU								Pu-242	2.24E-05	5.64E-03
LL85200457TRU		612-1B								
LL85200457TRU			332	box	54x52x87					
LL85200457TRU								Am-241	1.98E-02	5.69E-03
LL85200457TRU								Pu-238	7.80E-03	4.51E-04
LL85200457TRU								Pu-239	1.66E-01	2.64E+00
LL85200457TRU								Pu-240	3.83E-02	1.66E-01
LL85200457TRU								Pu-241	1.12E+00	1.07E-02
LL85200457TRU								Pu-242	4.48E-06	1.13E-03
LL85200462TRU		612-1B								
LL85200462TRU			332	box	54x52x87					
LL85200462TRU								Am-241	5.25E-04	1.51E-04
LL85200462TRU								Pu-238	2.07E-04	1.20E-05
LL85200462TRU								Pu-239	4.40E-03	7.00E-02
LL85200462TRU								Pu-240	1.02E-03	4.42E-03
LL85200462TRU								Pu-241	2.97E-02	2.85E-04
LL85200462TRU								Pu-242	1.19E-07	3.00E-05
LL85200495TRU	9/24/92	625-B								
LL85200495TRU			332	drum	---					
LL85200495TRU								Am-241	1.15E-01	3.33E-02
LL85200495TRU								Pu-238	1.96E-02	1.13E-03
LL85200495TRU								Pu-239	8.51E-02	1.35E+00
LL85200495TRU								Pu-240	6.87E-02	2.99E-01
LL85200495TRU								Pu-241	2.10E+00	2.02E-02
LL85200495TRU								Pu-242	2.94E-05	7.40E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85200508TRU	5/15/92	625-B								
LL85200508TRU			332	drum	---					
LL85200508TRU								Am-241	2.35E-02	6.77E-03
LL85200508TRU								Am-241	1.42E-01	4.10E-02
LL85200508TRU								Pu-238	9.28E-03	5.37E-04
LL85200508TRU								Pu-238	8.65E-02	5.00E-03
LL85200508TRU								Pu-239	1.97E-01	3.13E+00
LL85200508TRU								Pu-240	4.55E-02	1.98E-01
LL85200508TRU								Pu-241	1.33E+00	1.28E-02
LL85200508TRU								Pu-242	5.32E-06	1.34E-03
LL85200513TRU		625-B								
LL85200513TRU			332	drum	---					
LL85200513TRU								Am-241	3.21E-01	9.25E-02
LL85200513TRU								Pu-238	5.44E-02	3.14E-03
LL85200513TRU								Pu-239	2.37E-01	3.76E+00
LL85200513TRU								Pu-240	1.91E-01	8.30E-01
LL85200513TRU								Pu-241	5.84E+00	5.62E-02
LL85200513TRU								Pu-242	8.17E-05	2.06E-02
LL85200527TRU	8/26/92	625-B								
LL85200527TRU			332	drum	---					
LL85200527TRU								Am-241	3.62E-01	1.04E-01
LL85200527TRU								Pu-238	6.13E-02	3.54E-03
LL85200527TRU								Pu-239	2.67E-01	4.24E+00
LL85200527TRU								Pu-240	2.15E-01	9.35E-01
LL85200527TRU								Pu-241	6.59E+00	6.33E-02
LL85200527TRU								Pu-242	9.20E-05	2.32E-02
LL85200546TRU	5/21/93	625-B								
LL85200546TRU			332	drum	---					
LL85200546TRU								Am-241	4.96E-02	1.43E-02
LL85200546TRU								Pu-238	1.96E-02	1.13E-03
LL85200546TRU								Pu-239	4.16E-01	6.62E+00
LL85200546TRU								Pu-240	9.61E-02	4.18E-01
LL85200546TRU								Pu-241	2.81E+00	2.70E-02
LL85200546TRU								Pu-242	1.12E-05	2.83E-03
LL85200565TRU		233 WAA								
LL85200565TRU			251	drum	---	nickel	20.00E+01 gm			
LL85200565TRU								Am-241	1.40E+00	4.03E-01
LL85200565TRU								Am-242m	7.60E-05	7.73E-06
LL85200565TRU								Am-243	1.50E-03	7.43E-03
LL85200565TRU								Cf-249	2.50E-04	6.04E-05
LL85200565TRU								Cm-244	1.29E+01	1.58E-01
LL85200565TRU								Pu-238	1.40E-01	8.09E-03
LL85200565TRU								Pu-239	3.10E-02	4.93E-01
LL85200570TRU		625-B								
LL85200570TRU			332	drum	---	asbestos	22.72E+01 gm			
LL85200570TRU						lead	20.00E+03 gm			
LL85200570TRU								Am-241	1.02E+00	2.95E-01
LL85200570TRU								Pu-238	1.73E-02	1.00E-03
LL85200570TRU								Pu-238	1.74E-01	1.00E-02
LL85200570TRU								Pu-239	7.55E-01	1.20E+01
LL85200570TRU								Pu-240	6.09E-01	2.65E+00
LL85200570TRU								Pu-241	1.87E+01	1.79E-01
LL85200570TRU								Pu-242	2.61E-04	6.57E-02

SERIAL #	REC. @ HMM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85200589TRU	11/6/92	625-B					21.54E+03			
LL85200589TRU			332	drum	---	LEAD	gm			
LL85200589TRU						OIL	gm			
LL85200589TRU						PHOSPHORUS	gm			
LL85200589TRU						TCE	ltr			
LL85200589TRU								Am-241	1.07E-01	3.07E-02
LL85200589TRU								Pu-238	4.21E-02	2.43E-03
LL85200589TRU								Pu-239	8.94E-01	1.42E+01
LL85200589TRU								Pu-240	2.06E-01	8.97E-01
LL85200589TRU								Pu-241	6.02E+00	5.79E-02
LL85200589TRU								Pu-242	2.41E-05	6.08E-03
LL85200594TRU		625-B								
LL85200594TRU			332	drum	--	M P OIL	ltr			
LL85200594TRU						TCE	ltr			
LL85200594TRU								Am-241	9.80E-04	2.82E-04
LL85200594TRU								Am-241	4.51E+00	1.30E+00
LL85200594TRU								Pu-238	3.87E-04	2.24E-05
LL85200594TRU								Pu-239	8.22E-03	1.31E-01
LL85200594TRU								Pu-240	1.90E-03	8.25E-03
LL85200594TRU								Pu-241	5.54E-02	5.33E-04
LL85200594TRU								Pu-242	2.22E-07	5.59E-05
LL85200607TRU	9/4/92	625-B								
LL85200607TRU			332	drum	--					
LL85200607TRU								Am-241	5.87E-01	1.69E-01
LL85200607TRU								Pu-238	9.95E-02	5.75E-03
LL85200607TRU								Pu-239	4.33E-01	6.88E+00
LL85200607TRU								Pu-240	3.49E-01	1.52E+00
LL85200607TRU								Pu-241	1.07E+01	1.03E-01
LL85200607TRU								Pu-242	1.49E-04	3.77E-02
LL85200626TRU	9/4/92	625-B								
LL85200626TRU			332	drum	--					
LL85200626TRU								Am-241	3.97E-03	1.15E-03
LL85200626TRU								Pu-238	1.57E-03	9.07E-05
LL85200626TRU								Pu-239	3.33E-02	5.30E-01
LL85200626TRU								Pu-240	7.70E-03	3.35E-02
LL85200626TRU								Pu-241	2.25E-01	2.16E-03
LL85200626TRU								Pu-242	9.01E-07	2.27E-04
LL85200631TRU	9/4/92	625-B								
LL85200631TRU			332	drum	--					
LL85200631TRU								Am-241	1.18E-01	3.40E-02
LL85200631TRU								Pu-238	4.65E-02	2.69E-03
LL85200631TRU								Pu-239	9.88E-01	1.57E+01
LL85200631TRU								Pu-240	2.28E-01	9.92E-01
LL85200631TRU								Pu-241	6.66E+00	6.40E-02
LL85200631TRU								Pu-242	2.67E-05	6.72E-03
LL85200645TRU	10/23/92	625-B								
LL85200645TRU			332	drum	--					
LL85200645TRU								Am-241	8.62E-02	2.49E-02
LL85200645TRU								Pu-238	3.41E-02	1.97E-03
LL85200645TRU								Pu-239	7.23E-01	1.15E+01
LL85200645TRU								Pu-240	1.67E-01	7.26E-01
LL85200645TRU								Pu-241	4.88E+00	4.69E-02
LL85200645TRU								Pu-242	1.95E-05	4.92E-03
LL85200674TRU	5/7/93	612-100								
LL85200674TRU			332	drum	--					
LL85200674TRU								Am-241	9.32E-02	2.69E-02
LL85200674TRU								Pu-238	3.68E-02	2.13E-03
LL85200674TRU								Pu-239	7.82E-01	1.24E+01
LL85200674TRU								Pu-240	1.80E-01	7.85E-01
LL85200674TRU								Pu-241	5.27E+00	5.07E-02
LL85200674TRU								Pu-242	2.11E-05	5.32E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85201169TRU		612-1B					17.38E+01 gm			
LL85201169TRU			332	SWB	---	H2SO4		Am-241	1.99E-02	5.74E-03
LL85201169TRU								Pu-238	7.87E-03	4.55E-04
LL85201169TRU								Pu-239	1.67E-01	2.66E+00
LL85201169TRU								Pu-240	3.86E-02	1.68E-01
LL85201169TRU								Pu-241	1.13E+00	1.08E-02
LL85201169TRU								Pu-242	4.52E-06	1.14E-03
LL85201174TRU	4/30/93	625-B								
LL85201174TRU			332	drum	---			Am-241	1.02E+00	2.94E-01
LL85201174TRU								Pu-238	1.73E-01	9.98E-03
LL85201174TRU								Pu-239	7.51E-01	1.19E+01
LL85201174TRU								Pu-240	6.06E-01	2.64E+00
LL85201174TRU								Pu-241	1.86E+01	1.78E-01
LL85201174TRU								Pu-242	2.59E-04	6.53E-02
LL85300046TRU		625-B								
LL85300046TRU			332	drum	---	lead	40.00E+02 gm	Am-241	3.03E-01	8.74E-02
LL85300046TRU								Pu-238	5.89E-02	3.40E-03
LL85300046TRU								Pu-239	4.39E-01	6.98E+00
LL85300046TRU								Pu-240	2.18E-01	9.49E-01
LL85300046TRU								Pu-241	6.61E+00	6.35E-02
LL85300046TRU								Pu-242	7.62E-05	1.92E-02
LL85300126TRU		233 WAA								
LL85300126TRU			233	drum	---			Pu-238	4.57E+01	2.64E+00
LL85300268TRU		625-B								
LL85300268TRU			332	drum	---	lead (hammer)	91.00E+03 gm	Am-241	5.98E-03	1.72E-03
LL85300268TRU								Pu-238	2.36E-03	1.36E-04
LL85300268TRU								Pu-239	1.04E-01	6.00E-03
LL85300268TRU								Pu-240	5.01E-02	7.97E-01
LL85300268TRU								Pu-241	1.16E-02	5.03E-02
LL85300268TRU								Pu-242	3.38E-01	3.25E-03
LL85300268TRU								Pu-242	1.35E-06	3.41E-04
LL85300273TRU		625-B								
LL85300273TRU			332	drum	---			Am-241	8.53E-02	2.46E-02
LL85300273TRU								Pu-238	1.45E-02	8.36E-04
LL85300273TRU								Pu-239	6.29E-02	1.00E+00
LL85300273TRU								Pu-240	5.08E-02	2.21E-01
LL85300273TRU								Pu-241	1.55E+00	1.49E-02
LL85300273TRU								Pu-242	2.17E-05	5.47E-03
LL85300287TRU		625-B								
LL85300287TRU			332	drum	---			Am-241	5.91E-01	1.70E-01
LL85300287TRU								Pu-238	1.00E-01	5.79E-03
LL85300287TRU								Pu-239	4.36E-01	6.93E+00
LL85300287TRU								Pu-240	3.52E-01	1.53E+00
LL85300287TRU								Pu-241	1.08E+01	1.04E-01
LL85300287TRU								Pu-242	1.51E-04	3.79E-02
LL85300310TRU		625-B								
LL85300310TRU			234	drum	---			Am-241	8.69E-03	2.51E-03
LL85300310TRU								Pu-238	1.69E-03	9.75E-05
LL85300310TRU								Pu-239	1.26E-02	2.00E-01
LL85300310TRU								Pu-240	6.25E-03	2.72E-02
LL85300310TRU								Pu-241	1.89E-01	1.82E-03
LL85300310TRU								Pu-242	2.18E-06	5.50E-04

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85300329TRU		625-B								
LL85300329TRU			332	drum	---					
LL85300329TRU								Am-241	4.61E-01	1.33E-01
LL85300329TRU								Pu-238	7.81E-02	4.51E-03
LL85300329TRU								Pu-239	3.40E-01	5.40E+00
LL85300329TRU								Pu-240	2.74E-01	1.19E+00
LL85300329TRU								Pu-241	8.39E+00	8.07E-02
LL85300329TRU								Pu-242	1.17E-04	2.95E-02
LL85300334TRU		625-B								
LL85300334TRU			332	drum	---					
LL85300334TRU								Am-241	3.24E-03	9.34E-04
LL85300334TRU								Am-241	6.69E-02	1.93E-02
LL85300334TRU								Am-241	1.00E-01	2.88E-02
LL85300334TRU								Pu-238	2.64E-02	1.53E-03
LL85300334TRU								Pu-239	5.61E-01	8.92E+00
LL85300334TRU								Pu-240	1.30E-01	5.63E-01
LL85300334TRU								Pu-241	3.78E+00	3.64E-02
LL85300334TRU								Pu-242	1.52E-05	3.82E-03
LL85300334TRU								U-238	1.21E-05	3.55E+01
LL85300334TRU								U-238	1.70E-04	5.00E+02
LL85300348TRU		625-B								
LL85300348TRU			332	drum	---					
LL85300348TRU								Am-241	1.01E-01	2.91E-02
LL85300348TRU								Pu-238	3.98E-02	2.30E-03
LL85300348TRU								Pu-239	8.46E-01	1.35E+01
LL85300348TRU								Pu-240	1.95E-01	8.49E-01
LL85300348TRU								Pu-241	5.70E+00	5.48E-02
LL85300348TRU								Pu-242	2.29E-05	5.76E-03
LL85300409TRU		625-B								
LL85300409TRU			332	drum	---					
LL85300409TRU								Am-241	1.40E-01	4.03E-02
LL85300409TRU								Pu-238	5.52E-02	3.19E-03
LL85300409TRU								Pu-239	1.17E+00	1.86E+01
LL85300409TRU								Pu-240	2.71E-01	1.18E+00
LL85300409TRU								Pu-241	7.90E+00	7.60E-02
LL85300409TRU								Pu-242	3.17E-05	7.98E-03
LL85300414TRU		625-B								
LL85300414TRU			332	drum	---					
LL85300414TRU								Am-241	4.33E-01	1.25E-01
LL85300414TRU								Pu-238	7.34E-02	4.24E-03
LL85300414TRU								Pu-239	3.19E-01	5.08E+00
LL85300414TRU								Pu-240	2.58E-01	1.12E+00
LL85300414TRU								Pu-241	7.89E+00	7.59E-02
LL85300414TRU								Pu-242	1.10E-04	2.78E-02
LL85300428TRU		625-B								
LL85300428TRU			332	drum	---					
LL85300428TRU								Am-241	3.79E-02	1.09E-02
LL85300428TRU								Pu-238	6.42E-03	3.71E-04
LL85300428TRU								Pu-239	2.79E-02	4.44E-01
LL85300428TRU								Pu-240	2.25E-02	9.80E-02
LL85300428TRU								Pu-241	6.90E-01	6.63E-03
LL85300428TRU								Pu-242	9.64E-06	2.43E-03
LL85300433TRU		625-B								
LL85300433TRU			332	drum	---					
LL85300433TRU								Am-241	9.46E-02	2.73E-02
LL85300433TRU								Pu-238	3.73E-02	2.16E-03
LL85300433TRU								Pu-239	7.93E-01	1.26E+01
LL85300433TRU								Pu-240	1.83E-01	7.96E-01
LL85300433TRU								Pu-241	5.35E+00	5.14E-02
LL85300433TRU								Pu-242	2.14E-05	5.40E-03
LL85300447TRU	5/15/92	625-B								
LL85300447TRU			332	drum	---					
LL85300447TRU								Am-241	1.14E-02	3.27E-03
LL85300447TRU								Am-241	2.08E-02	6.00E-03
LL85300447TRU								Pu-238	4.49E-03	2.59E-04
LL85300447TRU								Pu-238	7.09E-02	4.10E-03
LL85300447TRU								Pu-239	9.53E-02	1.52E+00
LL85300447TRU								Pu-240	2.20E-02	9.56E-02

SERIAL #	REC @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85300447TRU								Pu-241	6.42E-01	6.18E-03
LL85300447TRU								Pu-242	2.57E-06	6.48E-04
LL85300447TRU								U-238	5.10E-05	1.50E+02
LL85300452TRU		612-1B								
LL85300452TRU			332	box	54x52x87					
LL85300452TRU								Am-241	1.50E-03	4.32E-04
LL85300452TRU								Pu-238	5.78E-04	3.34E-05
LL85300452TRU								Pu-239	1.26E-02	2.00E-01
LL85300452TRU								Pu-240	2.90E-03	1.26E-02
LL85300452TRU								Pu-241	8.47E-02	8.14E-04
LL85300452TRU								Pu-242	3.39E-07	8.54E-05
LL85300466TRU		612-1B								
LL85300466TRU			332	box	54x52x87					
LL85300466TRU								Am-241	2.10E-03	6.05E-04
LL85300466TRU								Pu-238	8.09E-04	4.68E-05
LL85300466TRU								Pu-239	1.76E-02	2.80E-01
LL85300466TRU								Pu-240	4.06E-03	1.77E-02
LL85300466TRU								Pu-241	1.19E-01	1.14E-03
LL85300466TRU								Pu-242	4.75E-07	1.20E-04
LL85300471TRU		612-1B								
LL85300471TRU			332	box	72x84x90					
LL85300471TRU								Am-241	1.05E-01	3.02E-02
LL85300471TRU								Pu-238	4.14E-02	2.39E-03
LL85300471TRU								Pu-239	8.79E-01	1.40E+01
LL85300471TRU								Pu-240	2.03E-01	8.83E-01
LL85300471TRU								Pu-241	5.93E+00	5.70E-02
LL85300471TRU								Pu-242	2.38E-05	5.98E-03
LL85300485TRU		625-B								
LL85300485TRU			332	drum	—					
LL85300485TRU								Am-241	6.88E-02	1.98E-02
LL85300485TRU								Pu-238	2.72E-02	1.57E-03
LL85300485TRU								Pu-239	5.77E-01	9.18E+00
LL85300485TRU								Pu-240	1.33E-01	5.80E-01
LL85300485TRU								Pu-241	3.89E+00	3.74E-02
LL85300485TRU								Pu-242	1.56E-05	3.93E-03
LL85300490TRU		625-B								
LL85300490TRU			332	drum	—					
LL85300490TRU								Am-241	1.17E-03	3.37E-04
LL85300490TRU								Pu-238	4.62E-04	2.67E-05
LL85300490TRU								Pu-239	9.81E-03	1.56E-01
LL85300490TRU								Pu-240	2.27E-03	9.85E-03
LL85300490TRU								Pu-241	6.61E-02	6.36E-04
LL85300490TRU								Pu-242	2.65E-07	6.68E-05
LL85300503TRU	3/26/93	625-B								
LL85300503TRU			332	drum	—					
LL85300503TRU								Am-241	1.66E-02	4.79E-03
LL85300503TRU								Pu-238	6.56E-03	3.79E-04
LL85300503TRU								Pu-239	1.39E-01	2.22E+00
LL85300503TRU								Pu-240	3.22E-02	1.40E-01
LL85300503TRU								Pu-241	9.39E-01	9.03E-03
LL85300503TRU								Pu-242	3.76E-06	9.48E-04
LL85300522TRU		625-B								
LL85300522TRU			332	drum	—					
LL85300522TRU								Am-241	5.36E-02	1.55E-02
LL85300522TRU								Pu-238	9.09E-03	5.25E-04
LL85300522TRU								Pu-239	3.95E-02	6.29E-01
LL85300522TRU								Pu-240	3.19E-02	1.39E-01
LL85300522TRU								Pu-241	9.77E-01	9.39E-03
LL85300522TRU								Pu-242	1.37E-05	3.44E-03
LL85300555TRU		625-B								
LL85300555TRU			332	drum	—					
LL85300555TRU								Am-241	9.45E-02	2.72E-02
LL85300555TRU								Pu-238	1.60E-02	9.25E-04
LL85300555TRU								Pu-239	6.96E-02	1.11E+00
LL85300555TRU								Pu-240	5.62E-02	2.44E-01
LL85300555TRU								Pu-241	1.72E+00	1.65E-02
LL85300555TRU								Pu-242	2.40E-05	6.06E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85300560TRU	9/24/92	625-B								
LL85300560TRU			332	drum	--					
LL85300560TRU								Am-241	4.12E-02	1.19E-02
LL85300560TRU								Np-237	5.85E-05	8.20E-02
LL85300560TRU								Pu-238	2.27E-03	1.31E-04
LL85300560TRU								Pu-239	5.54E-02	8.80E-01
LL85300560TRU								Pu-240	6.84E-02	2.97E-01
LL85300560TRU								Pu-241	5.27E-01	5.07E-03
LL85300560TRU								Pu-242	8.54E-07	2.15E-04
LL85300560TRU								U-235	2.44E-06	1.11E+00
LL85300560TRU								U-238	1.27E-05	3.73E+01
LL85300584TRU	5/15/92	625-B								
LL85300584TRU			332	drum	--					
LL85300584TRU								Am-241	2.95E-01	8.51E-02
LL85300584TRU								Pu-238	5.00E-02	2.89E-03
LL85300584TRU								Pu-239	2.18E-01	3.46E+00
LL85300584TRU								Pu-240	1.76E-01	7.64E-01
LL85300584TRU								Pu-241	5.38E+00	5.17E-02
LL85300584TRU								Pu-242	7.52E-05	1.89E-02
LL85300598TRU		625-B								
LL85300598TRU			332	drum	--					
LL85300598TRU								Am-241	5.33E-02	1.54E-02
LL85300598TRU								Pu-238	2.11E-02	1.22E-03
LL85300598TRU								Pu-239	4.47E-01	7.11E+00
LL85300598TRU								Pu-240	1.03E-01	4.49E-01
LL85300598TRU								Pu-241	3.02E+00	2.90E-02
LL85300598TRU								Pu-242	1.21E-05	3.04E-03
LL85300616TRU	9/4/92	625-B								
LL85300616TRU			332	drum	--					
LL85300616TRU								Am-241	5.97E-03	1.72E-03
LL85300616TRU								Pu-238	2.36E-03	1.36E-04
LL85300616TRU								Pu-239	5.01E-02	7.96E-01
LL85300616TRU								Pu-240	1.16E-02	5.02E-02
LL85300616TRU								Pu-241	3.37E-01	3.24E-03
LL85300616TRU								Pu-242	1.35E-06	3.41E-04
LL85300621TRU	9/4/92	625-B								
LL85300621TRU			332	drum	--					
LL85300621TRU								Am-241	1.08E+00	3.11E-01
LL85300621TRU								Pu-238	1.83E-01	1.06E-02
LL85300621TRU								Pu-239	7.96E-01	1.27E+01
LL85300621TRU								Pu-240	6.43E-01	2.79E+00
LL85300621TRU								Pu-241	1.97E+01	1.89E-01
LL85300621TRU								Pu-242	2.75E-04	6.93E-02
LL85300635TRU	10/23/92	625-B								
LL85300635TRU			332	drum	--					
LL85300635TRU								Am-241	7.75E-01	2.23E-01
LL85300635TRU								Pu-238	1.31E-01	7.59E-03
LL85300635TRU								Pu-239	5.71E-01	9.08E+00
LL85300635TRU								Pu-240	4.61E-01	2.00E+00
LL85300635TRU								Pu-241	1.41E+01	1.36E-01
LL85300635TRU								Pu-242	1.97E-04	4.97E-02
LL85300640TRU	8/26/92	625-B								
LL85300640TRU			332	drum	--					
LL85300640TRU								Am-241	7.63E-02	2.20E-02
LL85300640TRU								Pu-238	3.01E-02	1.74E-03
LL85300640TRU								Pu-239	6.40E-01	1.02E+01
LL85300640TRU								Pu-240	1.48E-01	6.42E-01
LL85300640TRU								Pu-241	4.31E+00	4.15E-02
LL85300640TRU								Pu-242	1.73E-05	4.35E-03
LL85300659TRU	3/26/93	625-B								
LL85300659TRU			332	drum	--					
LL85300659TRU								Am-241	8.50E-02	2.45E-02
LL85300659TRU								Pu-238	3.36E-02	1.94E-03
LL85300659TRU								Pu-239	7.13E-01	1.13E+01
LL85300659TRU								Pu-240	1.65E-01	7.15E-01
LL85300659TRU								Pu-241	4.80E+00	4.62E-02
LL85300659TRU								Pu-242	1.93E-05	4.85E-03

SERIAL #	REC @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85400036TRU	9/4/92	625-B								
LL85400036TRU			332	drum	---					
LL85400036TRU								Am-241	2.77E-01	7.99E-02
LL85400036TRU								Pu-238	4.70E-02	2.71E-03
LL85400036TRU								Pu-239	2.04E-01	3.25E+00
LL85400036TRU								Pu-240	1.65E-01	7.17E-01
LL85400036TRU								Pu-241	5.05E+00	4.85E-02
LL85400036TRU								Pu-242	7.05E-05	1.78E-02
LL85400263TRU		625-B								
LL85400263TRU			332	drum	---					
LL85400263TRU								Am-241	4.65E-01	1.34E-01
LL85400263TRU								Pu-238	7.88E-02	4.56E-03
LL85400263TRU								Pu-239	3.43E-01	5.45E+00
LL85400263TRU								Pu-240	2.77E-01	1.20E+00
LL85400263TRU								Pu-241	8.47E+00	8.15E-02
LL85400263TRU								Pu-242	1.18E-04	2.98E-02
LL85400300TRU		233 WAA								
LL85400300TRU			251	drum	---					
LL85400300TRU								Am-241	2.70E-01	7.78E-02
LL85400300TRU								Am-242m	3.40E-04	3.46E-05
LL85400300TRU								Cm-244	6.50E+00	7.95E-02
LL85400300TRU								Pu-238	7.30E-04	4.22E-05
LL85400300TRU								Pu-239	6.40E-02	1.02E+00
LL85400319TRU		625-B								
LL85400319TRU			332	drum	---					
LL85400319TRU								Am-241	2.22E-02	6.39E-03
LL85400319TRU								Pu-238	3.76E-03	2.17E-04
LL85400319TRU								Pu-239	1.64E-02	2.60E-01
LL85400319TRU								Pu-240	1.32E-02	5.74E-02
LL85400319TRU								Pu-241	4.04E-01	3.89E-03
LL85400319TRU								Pu-242	5.65E-06	1.42E-03
LL85400324TRU		625-B								
LL85400324TRU			332	drum	---					
LL85400324TRU								Am-241	4.09E-01	1.18E-01
LL85400324TRU								Pu-238	6.93E-02	4.01E-03
LL85400324TRU								Pu-239	3.02E-01	4.79E+00
LL85400324TRU								Pu-240	2.43E-01	1.06E+00
LL85400324TRU								Pu-241	7.45E+00	7.16E-02
LL85400324TRU								Pu-242	1.04E-04	2.62E-02
LL85400343TRU		625-B								
LL85400343TRU			332	drum	---					
LL85400343TRU								Am-241	1.84E-02	5.30E-03
LL85400343TRU								Pu-238	7.26E-03	4.19E-04
LL85400343TRU								Pu-239	1.54E-01	2.45E+00
LL85400343TRU								Pu-240	3.56E-02	1.55E-01
LL85400343TRU								Pu-241	1.04E+00	9.99E-03
LL85400343TRU								Pu-242	4.16E-06	1.05E-03
LL85400357TRU		625-B								
LL85400357TRU			251	drum	---					
LL85400357TRU								Am-241	7.80E-01	2.25E-01
LL85400357TRU								Am-243	4.80E-05	2.38E-04
LL85400357TRU								Cm-244	1.50E-01	1.83E-03
LL85400357TRU								Pu-238	2.10E-01	1.21E-02
LL85400357TRU								Pu-239	3.00E-04	4.77E-03
LL85400404TRU		612-1B								
LL85400404TRU			332	box	54x52x87					
LL85400404TRU								Am-241	1.16E-01	3.34E-02
LL85400404TRU								Pu-238	4.46E-02	2.58E-03
LL85400404TRU								Pu-239	9.72E-01	1.55E+01
LL85400404TRU								Pu-240	2.24E-01	9.75E-01
LL85400404TRU								Pu-241	6.54E+00	6.29E-02
LL85400404TRU								Pu-242	2.62E-05	6.60E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85400418TRU		625-B								
LL85400418TRU			332	drum	---					
LL85400418TRU								Am-241	8.21E-02	2.37E-02
LL85400418TRU								Pu-238	3.24E-02	1.87E-03
LL85400418TRU								Pu-239	6.89E-01	1.10E+01
LL85400418TRU								Pu-240	1.59E-01	6.91E-01
LL85400418TRU								Pu-241	4.64E+00	4.46E-02
LL85400418TRU								Pu-242	1.86E-05	4.69E-03
LL85400423TRU		625-B								
LL85400423TRU			332	drum	---					
LL85400423TRU								Am-241	3.71E-02	1.07E-02
LL85400423TRU								Pu-238	1.46E-02	8.46E-04
LL85400423TRU								Pu-239	3.11E-01	4.94E+00
LL85400423TRU								Pu-240	7.18E-02	3.12E-01
LL85400423TRU								Pu-241	2.10E+00	2.02E-02
LL85400423TRU								Pu-242	8.40E-06	2.12E-03
LL85400437TRU		625-B								
LL85400437TRU			332	drum	---					
LL85400437TRU								Am-241	7.39E-02	2.13E-02
LL85400437TRU								Pu-238	2.92E-02	1.69E-03
LL85400437TRU								Pu-239	6.20E-01	9.86E+00
LL85400437TRU								Pu-240	1.43E-01	6.22E-01
LL85400437TRU								Pu-241	4.18E+00	4.02E-02
LL85400437TRU								Pu-242	1.67E-05	4.22E-03
LL85400456TRU		612-1B								
LL85400456TRU			332	box	54x52x87					
LL85400456TRU								Am-241	3.39E-03	9.76E-04
LL85400456TRU								Pu-238	1.31E-03	7.55E-05
LL85400456TRU								Pu-239	2.84E-02	4.52E-01
LL85400456TRU								Pu-240	6.56E-03	2.85E-02
LL85400456TRU								Pu-241	1.91E-01	1.84E-03
LL85400456TRU								Pu-242	7.66E-07	1.93E-04
LL85400461TRU		612-1B								
LL85400461TRU			332	box	54x52x87					
LL85400461TRU								Am-241	8.24E-04	2.38E-04
LL85400461TRU								Pu-238	3.18E-04	1.84E-05
LL85400461TRU								Pu-239	6.92E-03	1.10E-01
LL85400461TRU								Pu-240	1.60E-03	6.94E-03
LL85400461TRU								Pu-241	4.66E-02	4.48E-04
LL85400461TRU								Pu-242	1.86E-07	4.70E-05
LL85400475TRU		612-1B								
LL85400475TRU			332	box	67x85x89					
LL85400475TRU								Am-241	9.38E-02	2.70E-02
LL85400475TRU								Pu-238	1.82E-02	1.05E-03
LL85400475TRU								Pu-239	1.36E-01	2.16E+00
LL85400475TRU								Pu-240	6.75E-02	2.94E-01
LL85400475TRU								Pu-241	2.04E+00	1.96E-02
LL85400475TRU								Pu-242	2.36E-05	5.94E-03
LL85400480TRU		625-B								
LL85400480TRU			332	drum	---					
LL85400480TRU								Am-241	4.52E-03	1.30E-03
LL85400480TRU								Pu-238	7.66E-04	4.43E-05
LL85400480TRU								Pu-239	3.33E-03	5.30E-02
LL85400480TRU								Pu-240	2.69E-03	1.17E-02
LL85400480TRU								Pu-241	8.24E-02	7.92E-04
LL85400480TRU								Pu-242	1.15E-06	2.90E-04
LL85400499TRU	5/15/92	625-B								
LL85400499TRU			332	drum	---					
LL85400499TRU								Am-241	6.96E-01	2.01E-01
LL85400499TRU								Pu-238	3.63E-06	2.10E-07
LL85400499TRU								Pu-239	1.18E-01	6.82E-03
LL85400499TRU								Pu-240	5.13E-01	8.16E+00
LL85400499TRU								Pu-241	4.14E-01	1.80E+00
LL85400499TRU								Pu-242	1.27E+01	1.22E-01
LL85400499TRU								Pu-242	1.77E-04	4.46E-02

SERIAL #	REC. @ HMM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85400507TRU	5/15/92	625-B								
LL85400507TRU			332	drum	---					
LL85400507TRU								Am-241	1.32E+00	3.80E-01
LL85400507TRU								Pu-238	2.23E-01	1.29E-02
LL85400507TRU								Pu-239	9.71E-01	1.54E+01
LL85400507TRU								Pu-240	7.84E-01	3.41E+00
LL85400507TRU								Pu-241	2.40E+01	2.31E-01
LL85400507TRU								Pu-242	3.35E-04	8.45E-02
LL85400512TRU	5/15/92	625-B								
LL85400512TRU			332	drum	---					
LL85400512TRU								Am-241	2.58E-03	7.43E-04
LL85400512TRU								Pu-238	1.02E-03	5.89E-05
LL85400512TRU								Pu-239	2.16E-02	3.44E-01
LL85400512TRU								Pu-240	4.99E-03	2.17E-02
LL85400512TRU								Pu-241	1.46E-01	1.40E-03
LL85400512TRU								Pu-242	5.84E-07	1.47E-04
LL85400526TRU	5/15/92	625-B								
LL85400526TRU			332	drum	---					
LL85400526TRU								Am-241	8.82E-02	2.54E-02
LL85400526TRU								Pu-238	1.50E-02	8.64E-04
LL85400526TRU								Pu-239	6.50E-02	1.03E+00
LL85400526TRU								Pu-240	5.25E-02	2.28E-01
LL85400526TRU								Pu-241	1.61E+00	1.55E-02
LL85400526TRU								Pu-242	2.25E-05	5.66E-03
LL85400531TRU		612-1B								
LL85400531TRU			332	box	55x77x92					
LL85400531TRU								Am-241	2.47E-03	7.13E-04
LL85400531TRU								Pu-238	9.77E-04	5.65E-05
LL85400531TRU								Pu-239	2.08E-02	3.30E-01
LL85400531TRU								Pu-240	4.79E-03	2.08E-02
LL85400531TRU								Pu-241	1.40E-01	1.35E-03
LL85400531TRU								Pu-242	5.61E-07	1.41E-04
LL85400545TRU	9/24/92	625-B								
LL85400545TRU			332	drum	---					
LL85400545TRU								Am-241	1.83E-02	5.27E-03
LL85400545TRU								Pu-238	3.55E-03	2.05E-04
LL85400545TRU								Pu-239	2.65E-02	4.21E-01
LL85400545TRU								Pu-240	1.32E-02	5.72E-02
LL85400545TRU								Pu-241	3.98E-01	3.83E-03
LL85400545TRU								Pu-242	4.60E-06	1.16E-03
LL85400550TRU		625-B								
LL85400550TRU			332	drum	---					
LL85400550TRU								Am-241	7.11E-02	2.05E-02
LL85400550TRU								Pu-238	2.81E-02	1.62E-03
LL85400550TRU								Pu-239	5.97E-01	9.49E+00
LL85400550TRU								Pu-240	1.38E-01	5.99E-01
LL85400550TRU								Pu-241	4.02E+00	3.87E-02
LL85400550TRU								Pu-242	1.61E-05	4.06E-03
LL85400569TRU	11/25/92	625-B								
LL85400569TRU			332	drum	---	TCE	1.44 lt			
LL85400569TRU						BERYLLIUM	25 gm			
LL85400569TRU						LEAD	300 gm			
LL85400569TRU								Am-241	1.16E-01	3.33E-02
LL85400569TRU								Pu-238	4.57E-02	2.64E-03
LL85400569TRU								Pu-239	9.70E-01	1.54E+01
LL85400569TRU								Pu-240	2.24E-01	9.73E-01
LL85400569TRU								Pu-241	6.54E+00	6.29E-02
LL85400569TRU								Pu-242	2.62E-05	6.60E-03
LL85400588TRU	9/4/92	625-B								
LL85400588TRU			332	drum	---					
LL85400588TRU								Am-241	1.87E-02	5.39E-03
LL85400588TRU								Pu-238	7.39E-03	4.27E-04
LL85400588TRU								Pu-239	1.57E-01	2.50E+00
LL85400588TRU								Pu-240	3.62E-02	1.58E-01
LL85400588TRU								Pu-241	1.06E+00	1.02E-02
LL85400588TRU								Pu-242	4.24E-06	1.07E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85400593TRU	5/14/93	625-B								
LL85400593TRU			332	drum	---					
LL85400593TRU								Am-241	5.49E-01	1.58E-01
LL85400593TRU								Pu-238	9.29E-02	5.37E-03
LL85400593TRU								Pu-239	4.04E-01	6.43E+00
LL85400593TRU								Pu-240	3.26E-01	1.42E+00
LL85400593TRU								Pu-241	9.99E+00	9.61E-02
LL85400593TRU								Pu-242	1.40E-04	3.52E-02
LL85400606TRU	5/14/93	625-B								
LL85400606TRU			332	drum	---					
LL85400606TRU								Am-241	7.99E-01	2.30E-01
LL85400606TRU								Pu-238	1.35E-01	7.83E-03
LL85400606TRU								Pu-239	5.89E-01	9.36E+00
LL85400606TRU								Pu-240	4.75E-01	2.07E+00
LL85400606TRU								Pu-241	1.46E+01	1.40E-01
LL85400606TRU								Pu-242	2.03E-04	5.12E-02
LL85400611TRU	5/15/92	625-B								
LL85400611TRU			332	drum	---					
LL85400611TRU								Am-241	1.41E-03	4.07E-04
LL85400611TRU								Pu-238	5.58E-04	3.22E-05
LL85400611TRU								Pu-239	1.18E-02	1.88E-01
LL85400611TRU								Pu-240	2.73E-03	1.19E-02
LL85400611TRU								Pu-241	7.98E-02	7.68E-04
LL85400611TRU								Pu-242	3.20E-07	8.06E-05
LL85400630TRU	9/24/92	625-B								
LL85400630TRU			332	drum	---					
LL85400630TRU								Am-241	6.92E-02	2.00E-02
LL85400630TRU								Pu-238	2.73E-02	1.58E-03
LL85400630TRU								Pu-239	5.81E-01	9.23E+00
LL85400630TRU								Pu-240	1.34E-01	5.83E-01
LL85400630TRU								Pu-241	3.91E+00	3.76E-02
LL85400630TRU								Pu-242	1.57E-05	3.95E-03
LL85400649TRU	3/26/93	625-B								
LL85400649TRU			332	drum	---					
LL85400649TRU								Am-241	2.09E-02	6.03E-03
LL85400649TRU								Pu-238	8.27E-03	4.78E-04
LL85400649TRU								Pu-239	1.73E-01	1.00E-02
LL85400649TRU								Pu-240	1.76E-01	2.79E+00
LL85400649TRU								Pu-241	4.05E-02	1.76E-01
LL85400649TRU								Pu-242	1.18E+00	1.14E-02
LL85400649TRU								Pu-242	4.74E-06	1.19E-03
LL85400673TRU	4/30/93	625-B								
LL85400673TRU			332	drum	---					
LL85400673TRU								Am-241	6.70E-02	1.93E-02
LL85400673TRU								Pu-238	2.64E-02	1.53E-03
LL85400673TRU								Pu-239	5.62E-01	8.93E+00
LL85400673TRU								Pu-240	1.30E-01	5.64E-01
LL85400673TRU								Pu-241	3.79E+00	3.64E-02
LL85400673TRU								Pu-242	1.52E-05	3.82E-03
LL85401173TRU	3/26/93	625-B								
LL85401173TRU			332	drum	---					
LL85401173TRU								Am-241	5.21E-03	1.50E-03
LL85401173TRU								Am-241	6.30E-02	1.82E-02
LL85401173TRU								Pu-238	2.49E-02	1.44E-03
LL85401173TRU								Pu-239	5.29E-01	8.41E+00
LL85401173TRU								Pu-240	1.22E-01	5.31E-01
LL85401173TRU								Pu-241	3.56E+00	3.43E-02
LL85401173TRU								Pu-242	1.43E-05	3.60E-03
LL85500026TRU		625-B								
LL85500026TRU			332	drum	---					
LL85500026TRU								Am-241	2.51E-02	7.23E-03
LL85500026TRU								Pu-238	9.90E-03	5.72E-04
LL85500026TRU								Pu-239	2.10E-01	3.34E+00
LL85500026TRU								Pu-240	4.86E-02	2.11E-01
LL85500026TRU								Pu-241	1.42E+00	1.36E-02
LL85500026TRU								Pu-242	5.68E-06	1.43E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85500125TRU		625-B					50.00E+00			
LL85500125TRU			251	drum	---	lead	gm			
LL85500125TRU								Am-241	7.13E-02	2.05E-02
LL85500125TRU								Am-243	5.18E-03	2.56E-02
LL85500125TRU								Cm-244	2.37E+00	2.90E-02
LL85500125TRU								Pu-238	1.31E-01	7.57E-03
LL85500125TRU								Pu-239	3.94E-04	6.26E-03
LL85500272TRU		625-B								
LL85500272TRU			332	drum	---					
LL85500272TRU								Am-241	6.04E-02	1.74E-02
LL85500272TRU								Pu-238	1.02E-02	5.92E-04
LL85500272TRU								Pu-239	4.45E-02	7.08E-01
LL85500272TRU								Pu-240	3.59E-02	1.56E-01
LL85500272TRU								Pu-241	1.10E+00	1.06E-02
LL85500272TRU								Pu-242	1.54E-05	3.87E-03
LL85500286TRU		625-B								
LL85500286TRU			332	drum	---					
LL85500286TRU								Am-241	7.27E-02	2.10E-02
LL85500286TRU								Np-237	7.13E-06	1.00E-02
LL85500286TRU								Pu-238	2.87E-02	1.66E-03
LL85500286TRU								Pu-239	6.10E-01	9.70E+00
LL85500286TRU								Pu-240	1.41E-01	6.12E-01
LL85500286TRU								Pu-241	4.11E+00	3.95E-02
LL85500286TRU								Pu-242	1.65E-05	4.15E-03
LL85500291TRU		625-B								
LL85500291TRU			332	drum	---					
LL85500291TRU								Am-241	1.34E+00	3.86E-01
LL85500291TRU								Pu-238	2.27E-01	1.31E-02
LL85500291TRU								Pu-239	9.88E-01	1.57E+01
LL85500291TRU								Pu-240	7.97E-01	3.46E+00
LL85500291TRU								Pu-241	2.44E+01	2.35E-01
LL85500291TRU								Pu-242	3.41E-04	8.59E-02
LL85500309TRU		625-B								
LL85500309TRU			332	drum	---					
LL85500309TRU								Am-241	2.23E-01	6.42E-02
LL85500309TRU								Pu-238	3.77E-02	2.18E-03
LL85500309TRU								Pu-239	1.64E-01	2.61E+00
LL85500309TRU								Pu-240	1.32E-01	5.76E-01
LL85500309TRU								Pu-241	4.06E+00	3.90E-02
LL85500309TRU								Pu-242	5.67E-05	1.43E-02
LL85500328TRU		625-B								
LL85500328TRU			332	drum	---					
LL85500328TRU								Am-241	1.12E-01	3.24E-02
LL85500328TRU								Pu-238	4.44E-02	2.57E-03
LL85500328TRU								Pu-239	9.44E-01	1.50E+01
LL85500328TRU								Pu-240	2.18E-01	9.47E-01
LL85500328TRU								Pu-241	6.36E+00	6.11E-02
LL85500328TRU								Pu-242	2.55E-05	6.42E-03
LL85500333TRU		625-B								
LL85500333TRU			332	drum	---					
LL85500333TRU								Am-241	5.12E-01	1.48E-01
LL85500333TRU								Pu-238	8.68E-02	5.01E-03
LL85500333TRU								Pu-239	3.77E-01	6.00E+00
LL85500333TRU								Pu-240	3.05E-01	1.32E+00
LL85500333TRU								Pu-241	9.32E+00	8.97E-02
LL85500333TRU								Pu-242	1.30E-04	3.28E-02
LL85500408TRU		625-B								
LL85500408TRU			332	drum	---					
LL85500408TRU								Am-241	3.15E-02	9.08E-03
LL85500408TRU								Pu-238	5.34E-03	3.08E-04
LL85500408TRU								Pu-239	2.32E-02	3.69E-01
LL85500408TRU								Pu-240	1.87E-02	8.14E-02
LL85500408TRU								Pu-241	5.73E-01	5.51E-03
LL85500408TRU								Pu-242	8.01E-06	2.02E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85500413TRU		625-B								
LL85500413TRU			332	drum	---					
LL85500413TRU								Am-241	3.81E-02	1.10E-02
LL85500413TRU								Am-241	1.04E-01	3.00E-02
LL85500413TRU								Pu-238	1.51E-02	8.70E-04
LL85500413TRU								Pu-238	3.46E-02	2.00E-03
LL85500413TRU								Pu-239	3.20E-01	5.08E+00
LL85500413TRU								Pu-240	7.38E-02	3.21E-01
LL85500413TRU								Pu-241	2.15E+00	2.07E-02
LL85500413TRU								Pu-242	8.64E-06	2.18E-03
LL85500427TRU		625-B								
LL85500427TRU			332	drum	---					
LL85500427TRU								Am-241	1.21E+00	3.47E-01
LL85500427TRU								Pu-238	2.04E-01	1.18E-02
LL85500427TRU								Pu-239	8.88E-01	1.41E+01
LL85500427TRU								Pu-240	7.17E-01	3.12E+00
LL85500427TRU								Pu-241	2.19E+01	2.11E-01
LL85500427TRU								Pu-242	3.07E-04	7.72E-02
LL85500432TRU		625-B								
LL85500432TRU			332	drum	---					
LL85500432TRU								Am-241	4.72E-02	1.36E-02
LL85500432TRU								Pu-238	1.86E-02	1.08E-03
LL85500432TRU								Pu-239	3.96E-01	6.30E+00
LL85500432TRU								Pu-240	9.14E-02	3.97E-01
LL85500432TRU								Pu-241	2.67E+00	2.57E-02
LL85500432TRU								Pu-242	1.07E-05	2.69E-03
LL85500446TRU		625-B								
LL85500446TRU			332	drum	---					
LL85500446TRU								Am-241	5.69E-02	1.64E-02
LL85500446TRU								Pu-238	2.25E-02	1.30E-03
LL85500446TRU								Pu-239	4.77E-01	7.59E+00
LL85500446TRU								Pu-240	1.10E-01	4.79E-01
LL85500446TRU								Pu-241	3.22E+00	3.09E-02
LL85500446TRU								Pu-242	1.29E-05	3.25E-03
LL85500451TRU		612-1B								
LL85500451TRU			332	box	54x52x87					
LL85500451TRU								Am-241	1.50E-03	4.32E-04
LL85500451TRU								Pu-238	5.78E-04	3.34E-05
LL85500451TRU								Pu-239	1.26E-02	2.00E-01
LL85500451TRU								Pu-240	2.90E-03	1.26E-02
LL85500451TRU								Pu-241	8.47E-02	8.14E-04
LL85500451TRU								Pu-242	3.39E-07	8.54E-05
LL85500465TRU		612-1B								
LL85500465TRU			332	box	54x52x87					
LL85500465TRU								Am-241	2.47E-03	7.13E-04
LL85500465TRU								Pu-238	9.53E-04	5.51E-05
LL85500465TRU								Pu-239	2.08E-02	3.30E-01
LL85500465TRU								Pu-240	4.79E-03	2.08E-02
LL85500465TRU								Pu-241	1.40E-01	1.34E-03
LL85500465TRU								Pu-242	5.59E-07	1.41E-04
LL85500470TRU		612-1B								
LL85500470TRU			332	box	67x85x89					
LL85500470TRU								Am-241	3.79E-02	1.09E-02
LL85500470TRU								Pu-238	7.36E-03	4.26E-04
LL85500470TRU								Pu-239	5.49E-02	8.73E-01
LL85500470TRU								Pu-240	2.73E-02	1.19E-01
LL85500470TRU								Pu-241	8.26E-01	7.94E-03
LL85500470TRU								Pu-242	9.53E-06	2.40E-03
LL85500489TRU		625-B								
LL85500489TRU			332	drum	---	TCE	30.00E-02 gm			
LL85500489TRU								Am-241	6.13E-02	1.77E-02
LL85500489TRU								Pu-238	2.42E-02	1.40E-03
LL85500489TRU								Pu-239	5.14E-01	8.18E+00
LL85500489TRU								Pu-240	1.19E-01	5.16E-01
LL85500489TRU								Pu-241	3.47E+00	3.33E-02
LL85500489TRU								Pu-242	1.39E-05	3.50E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85500494TRU		625-B								
LL85500494TRU			332	drum	---					
LL85500494TRU								Am-241	9.56E-03	2.75E-03
LL85500494TRU								Pu-238	1.62E-03	9.36E-05
LL85500494TRU								Pu-239	7.04E-03	1.12E-01
LL85500494TRU								Pu-240	5.69E-03	2.47E-02
LL85500494TRU								Pu-241	1.74E-01	1.67E-03
LL85500494TRU								Pu-242	2.43E-06	6.13E-04
LL85500502TRU	9/24/92	625-B								
LL85500502TRU			332	drum	---					
LL85500502TRU								Am-241	1.86E-03	5.36E-04
LL85500502TRU								Pu-238	7.34E-04	4.25E-05
LL85500502TRU								Pu-239	1.56E-02	2.48E-01
LL85500502TRU								Pu-240	3.60E-03	1.57E-02
LL85500502TRU								Pu-241	1.05E-01	1.01E-03
LL85500502TRU								Pu-242	4.21E-07	1.06E-04
LL85500516TRU		625-B								
LL85500516TRU			332	drum	---					
LL85500516TRU								Am-241	2.20E-02	6.35E-03
LL85500516TRU								Pu-238	8.71E-03	5.03E-04
LL85500516TRU								Pu-239	1.85E-01	2.94E+00
LL85500516TRU								Pu-240	4.27E-02	1.86E-01
LL85500516TRU								Pu-241	1.25E+00	1.20E-02
LL85500516TRU								Pu-242	5.00E-06	1.26E-03
LL85500521TRU	9/4/92	625-B								
LL85500521TRU			332	drum	---					
LL85500521TRU								Am-241	6.88E-02	1.98E-02
LL85500521TRU								Pu-238	2.72E-02	1.57E-03
LL85500521TRU								Pu-239	5.77E-01	9.18E+00
LL85500521TRU								Pu-240	1.33E-01	5.79E-01
LL85500521TRU								Pu-241	3.89E+00	3.74E-02
LL85500521TRU								Pu-242	1.56E-05	3.93E-03
LL85500559TRU		625-B								
LL85500559TRU			332	drum	---					
LL85500559TRU								Am-241	9.75E-02	2.81E-02
LL85500559TRU								Pu-238	3.85E-02	2.23E-03
LL85500559TRU								Pu-239	8.18E-01	1.30E+01
LL85500559TRU								Pu-240	1.89E-01	8.21E-01
LL85500559TRU								Pu-241	5.51E+00	5.30E-02
LL85500559TRU								Pu-242	2.21E-05	5.56E-03
LL85500583TRU		625-B								
LL85500583TRU			332	drum	---					
LL85500583TRU								Am-241	1.58E+00	4.54E-01
LL85500583TRU								Pu-238	2.67E-01	1.54E-02
LL85500583TRU								Pu-239	1.16E+00	1.85E+01
LL85500583TRU								Pu-240	9.38E-01	4.08E+00
LL85500583TRU								Pu-241	2.87E+01	2.76E-01
LL85500583TRU								Pu-242	4.01E-04	1.01E-01
LL85500597TRU	5/15/92	625-B								
LL85500597TRU			332	drum	---					
LL85500597TRU								Am-241	2.38E-02	6.86E-03
LL85500597TRU								Pu-238	9.40E-03	5.44E-04
LL85500597TRU								Pu-239	2.00E-01	3.18E+00
LL85500597TRU								Pu-240	4.61E-02	2.00E-01
LL85500597TRU								Pu-241	1.35E+00	1.29E-02
LL85500597TRU								Pu-242	5.39E-06	1.36E-03
LL85500601TRU	5/14/93	625-B								
LL85500601TRU			332	drum	---					
LL85500601TRU								Am-241	3.85E-01	1.11E-01
LL85500601TRU								Pu-238	7.48E-02	4.32E-03
LL85500601TRU								Pu-239	5.58E-01	8.87E+00
LL85500601TRU								Pu-240	2.77E-01	1.21E+00
LL85500601TRU								Pu-241	8.39E+00	8.07E-02
LL85500601TRU								Pu-242	9.69E-05	2.44E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85500644TRU	12/18/92	625-B								
LL85500644TRU			332	drum	---					
LL85500644TRU								Am-241	9.03E-02	2.60E-02
LL85500644TRU								Pu-238	3.57E-02	2.06E-03
LL85500644TRU								Pu-239	7.57E-01	1.20E+01
LL85500644TRU								Pu-240	1.25E-01	7.60E-01
LL85500644TRU								Pu-241	5.10E+00	4.91E-02
LL85500644TRU								Pu-242	2.05E-05	5.15E-03
LL85500663TRU	3/26/93	625-B								
LL85500663TRU			332	drum	---					
LL85500663TRU								Am-241	8.50E-02	2.45E-02
LL85500663TRU								Pu-238	3.36E-02	1.94E-03
LL85500663TRU								Pu-239	7.13E-01	1.13E+01
LL85500663TRU								Pu-240	1.65E-01	7.16E-01
LL85500663TRU								Pu-241	4.81E+00	4.62E-02
LL85500663TRU								Pu-242	1.93E-05	4.85E-03
LL85500899TRU	3/26/93	625-B								
LL85500899TRU			332	drum	---					
LL85500899TRU								Am-241	1.21E-01	3.49E-02
LL85500899TRU								Pu-238	4.78E-02	2.76E-03
LL85500899TRU								Pu-239	1.01E+00	1.61E+01
LL85500899TRU								Pu-240	2.34E-01	1.02E+00
LL85500899TRU								Pu-241	6.84E+00	6.58E-02
LL85500899TRU								Pu-242	2.74E-05	6.90E-03
LL85600257TRU		625-B								
LL85600257TRU			332	drum	---					
LL85600257TRU								Am-241	5.11E-03	1.47E-03
LL85600257TRU								Pu-238	2.02E-03	1.17E-04
LL85600257TRU								Pu-239	4.28E-02	6.81E-01
LL85600257TRU								Pu-240	9.89E-03	4.30E-02
LL85600257TRU								Pu-241	2.89E-01	2.78E-03
LL85600257TRU								Pu-242	1.16E-06	2.91E-04
LL85600295TRU		625-B								
LL85600295TRU			332	drum	---					
LL85600295TRU								Am-241	1.12E-01	3.24E-02
LL85600295TRU								Np-237	1.43E-06	2.00E-03
LL85600295TRU								Pu-238	4.44E-02	2.57E-03
LL85600295TRU								Pu-239	9.44E-01	1.50E+01
LL85600295TRU								Pu-240	2.18E-01	9.47E-01
LL85600295TRU								Pu-241	6.36E+00	6.11E-02
LL85600295TRU								Pu-242	2.55E-05	6.42E-03
LL85600304TRU		233 WAA								
LL85600304TRU			251	drum	---					
LL85600304TRU								Am-241	4.30E-04	1.24E-04
LL85600304TRU								Am-243	1.60E-02	7.92E-02
LL85600304TRU								Cm-244	2.32E+01	2.84E-01
LL85600304TRU								Pu-238	2.90E-01	1.68E-02
LL85600304TRU								Pu-239	9.80E-04	1.56E-02
LL85600318TRU		625-B								
LL85600318TRU			332	drum	---					
LL85600318TRU								Am-241	1.14E-02	3.28E-03
LL85600318TRU								Pu-238	2.21E-03	1.28E-04
LL85600318TRU								Pu-239	1.65E-02	2.62E-01
LL85600318TRU								Pu-240	8.19E-03	3.56E-02
LL85600318TRU								Pu-241	2.48E-01	2.38E-03
LL85600318TRU								Pu-242	2.86E-06	7.21E-04
LL85600323TRU		625-B								
LL85600323TRU			332	drum	---	Be	16.00E+00 gm			
LL85600323TRU								Am-241	1.51E-01	4.36E-02
LL85600323TRU								Pu-238	5.98E-02	3.45E-03
LL85600323TRU								Pu-239	1.27E+00	2.02E+01
LL85600323TRU								Pu-240	2.93E-01	1.27E+00
LL85600323TRU								Pu-241	8.56E+00	8.23E-02
LL85600323TRU								Pu-242	3.43E-05	8.64E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURES	GRAMS
LL85600337TRU		625-B								
LL85600337TRU			332	drum	---					
LL85600337TRU								Am-241	8.25E-03	2.38E-03
LL85600337TRU								Pu-238	3.26E-03	1.88E-04
LL85600337TRU								Pu-239	6.92E-02	1.10E+00
LL85600337TRU								Pu-240	1.60E-02	6.94E-02
LL85600337TRU								Pu-241	4.66E-01	4.48E-03
LL85600337TRU								Pu-242	1.87E-06	4.71E-04
LL85600342TRU		625-B								
LL85600342TRU			332	drum	---					
LL85600342TRU								Am-241	7.23E-02	2.08E-02
LL85600342TRU								Pu-238	2.86E-02	1.65E-03
LL85600342TRU								Pu-239	6.06E-01	9.64E+00
LL85600342TRU								Pu-240	1.40E-01	6.09E-01
LL85600342TRU								Pu-241	4.09E+00	3.93E-02
LL85600342TRU								Pu-242	1.64E-05	4.13E-03
LL85600361TRU		625-B								
LL85600361TRU			332	drum	---					
LL85600361TRU								Am-241	8.97E-03	2.58E-03
LL85600361TRU								Am-241	2.26E+00	6.50E-01
LL85600361TRU								Pu-238	2.17E-05	1.25E-06
LL85600361TRU								Pu-238	3.54E-03	2.05E-04
LL85600361TRU								Pu-239	7.52E-02	1.20E+00
LL85600361TRU								Pu-240	1.74E-02	7.55E-02
LL85600361TRU								Pu-241	5.07E-01	4.88E-03
LL85600361TRU								Pu-242	2.03E-06	5.12E-04
LL85600380TRU		625-B								
LL85600380TRU			332	drum	---					
LL85600380TRU								Am-241	2.34E-02	6.73E-03
LL85600380TRU								Pu-238	9.23E-03	5.33E-04
LL85600380TRU								Pu-239	1.96E-01	3.12E+00
LL85600380TRU								Pu-240	4.52E-02	1.97E-01
LL85600380TRU								Pu-241	1.32E+00	1.27E-02
LL85600380TRU								Pu-242	5.29E-06	1.33E-03
LL85600399TRU		625-B								
LL85600399TRU			332	drum	---	lead (gloves)	13.00E+02 gm			
LL85600399TRU								Am-241	5.47E-01	1.58E-01
LL85600399TRU								Am-241	1.53E+00	4.40E-01
LL85600399TRU								Pu-238	9.27E-02	5.36E-03
LL85600399TRU								Pu-239	2.20E-02	3.50E-01
LL85600399TRU								Pu-239	4.03E-01	6.41E+00
LL85600399TRU								Pu-240	3.25E-01	1.41E+00
LL85600399TRU								Pu-241	9.96E+00	9.58E-02
LL85600399TRU								Pu-242	1.39E-04	3.51E-02
LL85600403TRU		612-1B								
LL85600403TRU			332	box	52x52x86					
LL85600403TRU								Am-241	2.41E-02	6.96E-03
LL85600403TRU								Pu-238	9.30E-03	5.38E-04
LL85600403TRU								Pu-239	2.03E-01	3.22E+00
LL85600403TRU								Pu-240	4.67E-C2	2.03E-01
LL85600403TRU								Pu-241	1.36E+00	1.31E-02
LL85600403TRU								Pu-242	5.46E-06	1.37E-03
LL85600417TRU		625-B								
LL85600417TRU			332	drum	---					
LL85600417TRU								Am-241	3.78E-02	1.09E-02
LL85600417TRU								Pu-238	6.41E-03	3.70E-04
LL85600417TRU								Pu-239	2.79E-02	4.43E-01
LL85600417TRU								Pu-240	2.25E-02	9.78E-02
LL85600417TRU								Pu-241	6.88E-01	6.62E-03
LL85600417TRU								Pu-242	9.62E-06	2.42E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85600422TRU	5/15/92	625-B								
LL85600422TRU			332	drum	---					
LL85600422TRU								Am-241	9.20E-03	2.65E-03
LL85600422TRU								Pu-238	3.63E-03	2.10E-04
LL85600422TRU								Pu-239	8.65E-02	5.00E-03
LL85600422TRU								Pu-239	7.72E-02	1.23E+00
LL85600422TRU								Pu-240	1.78E-02	7.75E-02
LL85600422TRU								Pu-241	5.20E-01	5.00E-03
LL85600422TRU								Pu-242	2.08E-06	5.25E-04
LL85600422TRU								U-238	6.80E-05	2.00E+02
LL85600436TRU		625-B								
LL85600436TRU			332	drum	---					
LL85600436TRU								Am-241	4.29E-02	1.24E-02
LL85600436TRU								Pu-238	1.69E-02	9.79E-04
LL85600436TRU								Pu-239	3.60E-01	5.72E+00
LL85600436TRU								Pu-240	8.30E-02	3.61E-01
LL85600436TRU								Pu-241	2.43E+00	2.33E-02
LL85600436TRU								Pu-242	9.72E-06	2.45E-03
LL85600441TRU		625-B								
LL85600441TRU			332	drum	---					
LL85600441TRU								Am-241	1.20E-01	3.47E-02
LL85600441TRU								Pu-238	4.75E-02	2.75E-03
LL85600441TRU								Pu-239	1.01E+00	1.60E+01
LL85600441TRU								Pu-240	2.33E-01	1.01E+00
LL85600441TRU								Pu-241	6.80E+00	6.54E-02
LL85600441TRU								Pu-242	2.73E-05	6.86E-03
LL85600455TRU		612-1B								
LL85600455TRU			332	box	52x52x86					
LL85600455TRU								Am-241	1.50E-03	4.32E-04
LL85600455TRU								Pu-238	5.78E-04	3.34E-05
LL85600455TRU								Pu-239	1.26E-02	2.00E-01
LL85600455TRU								Pu-240	2.90E-03	1.26E-02
LL85600455TRU								Pu-241	8.47E-02	8.14E-04
LL85600455TRU								Pu-242	3.39E-07	8.54E-05
LL85600460TRU		612-1B								
LL85600460TRU			332	box	52x52x86					
LL85600460TRU								Am-241	1.33E-02	3.84E-03
LL85600460TRU								Pu-238	5.13E-03	2.97E-04
LL85600460TRU								Pu-239	1.12E-01	1.78E+00
LL85600460TRU								Pu-240	2.58E-02	1.12E-01
LL85600460TRU								Pu-241	7.52E-01	7.23E-03
LL85600460TRU								Pu-242	3.01E-06	7.58E-04
LL85600479TRU		625-B								
LL85600479TRU			332	drum	---					
LL85600479TRU								Am-241	1.35E-01	3.88E-02
LL85600479TRU								Pu-238	5.31E-02	3.07E-03
LL85600479TRU								Pu-239	1.13E+00	1.79E+01
LL85600479TRU								Pu-240	2.60E-01	1.13E+00
LL85600479TRU								Pu-241	7.61E+00	7.31E-02
LL85600479TRU								Pu-242	3.05E-05	7.68E-03
LL85600484TRU	5/15/92	625-B								
LL85600484TRU			332	drum	---					
LL85600484TRU								Am-241	1.62E-01	4.67E-02
LL85600484TRU								Pu-238	2.74E-02	1.59E-03
LL85600484TRU								Pu-239	1.19E-01	1.90E+00
LL85600484TRU								Pu-240	9.63E-02	4.19E-01
LL85600484TRU								Pu-241	2.95E+00	2.84E-02
LL85600484TRU								Pu-242	4.12E-05	1.04E-02
LL85600498TRU	5/21/93	625-B								
LL85600498TRU			332	drum	---					
LL85600498TRU								Am-241	1.14E+00	3.29E-01
LL85600498TRU								Pu-238	1.94E-01	1.12E-02
LL85600498TRU								Pu-239	8.42E-01	1.34E+01
LL85600498TRU								Pu-240	6.80E-01	2.96E+00
LL85600498TRU								Pu-241	2.08E+01	2.00E-01
LL85600498TRU								Pu-242	2.91E-04	7.33E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85600511TRU	9/4/92	625-B								
LL85600511TRU			332	drum	---					
LL85600511TRU								Am-241	3.03E-02	8.74E-03
LL85600511TRU								Pu-238	1.20E-02	6.92E-04
LL85600511TRU								Pu-239	2.54E-01	4.05E+00
LL85600511TRU								Pu-240	5.87E-02	2.55E-01
LL85600511TRU								Pu-241	1.71E+00	1.65E-02
LL85600511TRU								Pu-242	6.87E-06	1.73E-03
LL85600530TRU		625-B								
LL85600530TRU			332	drum	---					
LL85600530TRU								Am-241	1.19E+00	3.44E-01
LL85600530TRU								Pu-238	2.02E-01	1.17E-02
LL85600530TRU								Pu-239	8.81E-01	1.40E+01
LL85600530TRU								Pu-240	7.11E-01	3.09E+00
LL85600530TRU								Pu-241	2.18E+01	2.09E-01
LL85600530TRU								Pu-242	3.04E-04	7.66E-02
LL85600549TRU	9/24/92	625-B								
LL85600549TRU			332	drum	---					
LL85600549TRU								Am-241	3.14E-02	9.06E-03
LL85600549TRU								Am-243	1.01E-03	5.00E-03
LL85600549TRU								Cm-244	1.64E-01	2.00E-03
LL85600549TRU								Cm-246	6.22E-04	2.00E-03
LL85600549TRU								Pu-238	1.24E-02	7.17E-04
LL85600549TRU								Pu-239	2.64E-01	4.19E+00
LL85600549TRU								Pu-240	2.30E-04	1.00E-03
LL85600549TRU								Pu-240	6.08E-02	2.65E-01
LL85600549TRU								Pu-241	1.78E+00	1.71E-02
LL85600549TRU								Pu-242	7.12E-06	1.79E-03
LL85600554TRU	9/4/92	625-B								
LL85600554TRU			332	drum	---					
LL85600554TRU								Am-241	2.07E-02	5.97E-03
LL85600554TRU								Pu-238	8.18E-03	4.73E-04
LL85600554TRU								Pu-239	1.74E-01	2.76E+00
LL85600554TRU								Pu-240	4.01E-02	1.74E-01
LL85600554TRU								Pu-241	1.17E+00	1.13E-02
LL85600554TRU								Pu-242	4.69E-06	1.18E-03
LL85600573TRU	5/15/92	625-B								
LL85600573TRU			332	drum	---					
LL85600573TRU								Am-241	4.29E-02	1.24E-02
LL85600573TRU								Pu-238	1.69E-02	9.79E-04
LL85600573TRU								Pu-239	3.60E-01	5.72E+00
LL85600573TRU								Pu-240	8.30E-02	3.61E-01
LL85600573TRU								Pu-241	2.42E+00	2.33E-02
LL85600573TRU								Pu-242	9.72E-06	2.45E-03
LL85600573TRU								U-238	2.19E-05	6.44E+01
LL85600587TRU		625-B								
LL85600587TRU			332	drum	---					
LL85600587TRU								Am-241	1.20E+01	3.44E+00
LL85600587TRU								Pu-238	1.56E-01	8.99E-03
LL85600587TRU								Pu-239	6.54E-01	1.04E+01
LL85600587TRU								Pu-240	5.27E-01	2.29E+00
LL85600587TRU								Pu-241	1.62E+01	1.55E-01
LL85600587TRU								Pu-242	2.25E-04	5.67E-02
LL85600592TRU		625-B								
LL85600592TRU			332	drum	---					
LL85600592TRU								Am-241	1.21E+00	3.50E-01
LL85600592TRU								Pu-238	2.06E-01	1.19E-02
LL85600592TRU								Pu-239	8.94E-01	1.42E+01
LL85600592TRU								Pu-240	7.22E-01	3.14E+00
LL85600592TRU								Pu-241	2.21E+01	2.13E-01
LL85600592TRU								Pu-242	3.09E-04	7.78E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURES	GRAMS
LL85600605TRU	4/30/93	625-B								
LL85600605TRU			332	drum	---					
LL85600605TRU								Am-241	2.32E-01	6.67E-02
LL85600605TRU								Pu-238	3.92E-02	2.27E-03
LL85600605TRU								Pu-239	1.71E-01	2.71E+00
LL85600605TRU								Pu-240	1.38E-01	5.99E-01
LL85600605TRU								Pu-241	4.22E+00	4.05E-02
LL85600605TRU								Pu-242	5.89E-05	1.48E-02
LL85600610TRU	5/14/93	625-B								
LL85600610TRU			332	drum	---					
LL85600610TRU								Am-241	4.13E-02	1.19E-02
LL85600610TRU								Pu-238	1.63E-02	9.43E-04
LL85600610TRU								Pu-239	3.47E-01	5.51E+00
LL85600610TRU								Pu-240	8.00E-02	3.48E-01
LL85600610TRU								Pu-241	2.34E+00	2.25E-02
LL85600610TRU								Pu-242	9.36E-06	2.36E-03
LL85600629TRU		625-B								
LL85600629TRU			332	drum	---					
LL85600629TRU								Am-241	5.45E-02	1.57E-02
LL85600629TRU								Pu-238	2.15E-02	1.24E-03
LL85600629TRU								Pu-239	4.57E-01	7.27E+00
LL85600629TRU								Pu-240	1.05E-01	4.59E-01
LL85600629TRU								Pu-241	3.08E+00	2.96E-02
LL85600629TRU								Pu-242	1.23E-05	3.11E-03
LL85600648TRU	11/6/92	625-B								
LL85600648TRU			332	drum	---					
LL85600648TRU								Am-241	1.09E+00	3.13E-01
LL85600648TRU								Pu-238	1.84E-01	1.06E-02
LL85600648TRU								Pu-239	8.00E-01	1.27E+01
LL85600648TRU								Pu-240	6.46E-01	2.81E+00
LL85600648TRU								Pu-241	1.98E+01	1.90E-01
LL85600648TRU								Pu-242	2.76E-04	6.96E-02
LL85600672TRU	4/30/93	625-B								
LL85600672TRU			332	drum	---					
LL85600672TRU								Am-241	1.40E-01	4.05E-02
LL85600672TRU								Pu-238	1.73E-02	1.00E-03
LL85600672TRU								Pu-238	5.54E-02	3.20E-03
LL85600672TRU								Pu-239	1.18E+00	1.87E+01
LL85600672TRU								Pu-240	2.72E-01	1.18E+00
LL85600672TRU								Pu-241	7.94E+00	7.63E-02
LL85600672TRU								Pu-242	3.18E-05	8.01E-03
LL85601172TRU		612-1B								
LL85601172TRU			251	SWB	---					
LL85601172TRU								Am-241	4.00E-03	1.15E-03
LL85601172TRU								Pu-238	1.80E-01	1.04E-02
LL85601186TRU	3/26/93	625-B								
LL85601186TRU			332	drum	---					
LL85601186TRU								Am-241	9.37E-02	2.70E-02
LL85601186TRU								Pu-238	3.70E-02	2.14E-03
LL85601186TRU								Pu-239	7.86E-01	1.25E+01
LL85601186TRU								Pu-240	1.81E-01	7.89E-01
LL85601186TRU								Pu-241	5.30E+00	5.10E-02
LL85601186TRU								Pu-242	2.12E-05	5.35E-03
LL85700030TRU		625-B								
LL85700030TRU			332	drum	---					
LL85700030TRU								Am-241	7.62E-01	2.20E-01
LL85700030TRU								Pu-238	1.29E-01	7.46E-03
LL85700030TRU								Pu-239	5.61E-01	8.93E+00
LL85700030TRU								Pu-240	4.53E-01	1.97E+00
LL85700030TRU								Pu-241	1.39E+01	1.33E-01
LL85700030TRU								Pu-242	1.94E-04	4.88E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85700049TRU		625-B								
LL85700049TRU			332	drum	---					
LL85700049TRU								Am-241	5.06E-02	1.46E-02
LL85700049TRU								Pu-238	2.00E-02	1.16E-03
LL85700049TRU								Pu-239	4.25E-01	6.75E+00
LL85700049TRU								Pu-240	9.80E-02	4.26E-01
LL85700049TRU								Pu-241	2.86E+00	2.75E-02
LL85700049TRU								Pu-242	1.15E-05	2.89E-03
LL85700054TRU		625-B								
LL85700054TRU			332	drum	---	lead	64.00E+02 gm			
LL85700054TRU								Am-241	5.55E-01	1.60E-01
LL85700054TRU								Am-241	3.94E+00	1.14E+00
LL85700054TRU								Pu-238	9.40E-02	5.43E-03
LL85700054TRU								Pu-239	4.09E-01	6.50E+00
LL85700054TRU								Pu-240	3.30E-01	1.43E+00
LL85700054TRU								Pu-241	1.01E+01	9.71E-02
LL85700054TRU								Pu-242	1.41E-04	3.56E-02
LL85700129TRU		233 WAA								
LL85700129TRU			251	drum	---					
LL85700129TRU								Am-241	2.40E-02	6.92E-03
LL85700129TRU								Am-242m	2.36E-01	2.40E-02
LL85700129TRU								Cm-244	7.30E+00	8.92E-02
LL85700129TRU								Pu-238	2.77E-02	1.60E-03
LL85700129TRU								Pu-239	1.01E-02	1.60E-01
LL85700167TRU		625-B								
LL85700167TRU			419	drum	---					
LL85700167TRU								Am-241	8.96E-04	2.59E-04
LL85700167TRU								Cs-137	2.29E-06	2.63E-08
LL85700167TRU								Eu-152	1.61E-06	8.70E-09
LL85700167TRU								Eu-154	6.08E-07	4.19E-09
LL85700167TRU								Pu-238	6.24E-05	3.61E-06
LL85700167TRU								Pu-239	1.51E-03	2.40E-02
LL85700167TRU								Pu-240	3.57E-04	1.55E-03
LL85700167TRU								Pu-241	1.44E-02	1.43E-04
LL85700167TRU								Pu-242	2.39E-08	5.98E-06
LL85700167TRU								Sb-125	1.83E-07	1.73E-10
LL85700167TRU								Th-228	3.67E-08	4.44E-11
LL85700167TRU								U-235	4.10E-08	1.88E-02
LL85700266TRU		625-B								
LL85700266TRU			332	drum	---					
LL85700266TRU								Am-241	1.99E-01	5.73E-02
LL85700266TRU								Pu-238	7.86E-02	4.54E-03
LL85700266TRU								Pu-239	1.67E+00	2.65E+01
LL85700266TRU								Pu-240	3.85E-01	1.67E+00
LL85700266TRU								Pu-241	1.12E+01	1.08E-01
LL85700266TRU								Pu-242	4.51E-05	1.14E-02
LL85700271TRU		625-B								
LL85700271TRU			332	drum	---					
LL85700271TRU								Am-241	4.23E-02	1.22E-02
LL85700271TRU								Pu-238	1.67E-02	9.66E-04
LL85700271TRU								Pu-239	3.55E-01	5.64E+00
LL85700271TRU								Pu-240	8.19E-02	3.56E-01
LL85700271TRU								Pu-241	2.39E+00	2.30E-02
LL85700271TRU								Pu-242	9.58E-06	2.41E-03
LL85700285TRU		625-B								
LL85700285TRU			332	drum	---					
LL85700285TRU								Am-241	2.90E-02	8.36E-03
LL85700285TRU								Pu-238	4.92E-03	2.84E-04
LL85700285TRU								Pu-239	2.14E-02	3.40E-01
LL85700285TRU								Pu-240	1.73E-02	7.50E-02
LL85700285TRU								Pu-241	5.28E-01	5.08E-03
LL85700285TRU								Pu-242	7.38E-06	1.86E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85700290TRU		625-B								
LL85700290TRU			332	drum	---					
LL85700290TRU								Am-241	9.93E-02	2.86E-02
LL85700290TRU								Pu-238	1.68E-02	9.72E-04
LL85700290TRU								Pu-239	7.32E-02	1.16E+00
LL85700290TRU								Pu-240	5.90E-02	2.57E-01
LL85700290TRU								Pu-241	1.81E+00	1.74E-02
LL85700290TRU								Pu-242	2.53E-05	6.36E-03
LL85700308TRU		625-B								
LL85700308TRU			332	drum	---					
LL85700308TRU								Am-241	3.10E-01	8.93E-02
LL85700308TRU								Pu-238	5.25E-02	3.03E-03
LL85700308TRU								Pu-239	2.28E-01	3.63E+00
LL85700308TRU								Pu-240	1.84E-01	8.01E-01
LL85700308TRU								Pu-241	5.64E+00	5.42E-02
LL85700308TRU								Pu-242	7.88E-05	1.99E-02
LL85700327TRU		625-B								
LL85700327TRU			332	drum	---					
LL85700327TRU								Am-241	4.97E-03	1.43E-03
LL85700327TRU								Pu-238	1.96E-03	1.14E-04
LL85700327TRU								Pu-239	4.17E-02	6.63E-01
LL85700327TRU								Pu-240	9.63E-03	4.19E-02
LL85700327TRU								Pu-241	2.81E-01	2.70E-03
LL85700327TRU								Pu-242	1.13E-06	2.84E-04
LL85700332TRU		625-B								
LL85700332TRU			332	drum	---					
LL85700332TRU								Am-241	1.83E-01	5.26E-02
LL85700332TRU								Pu-238	3.54E-02	2.05E-03
LL85700332TRU								Pu-239	2.64E-01	4.20E+00
LL85700332TRU								Pu-240	1.31E-01	5.71E-01
LL85700332TRU								Pu-241	3.98E+00	3.82E-02
LL85700332TRU								Pu-242	4.59E-05	1.16E-02
LL85700370TRU		625-B								
LL85700370TRU			332	drum	---					
LL85700370TRU								Am-241	1.13E+00	3.25E-01
LL85700370TRU								Pu-238	1.91E-01	1.11E-02
LL85700370TRU								Pu-239	8.32E-01	1.32E+01
LL85700370TRU								Pu-240	6.71E-01	2.92E+00
LL85700370TRU								Pu-241	2.05E+01	1.98E-01
LL85700370TRU								Pu-242	2.87E-04	7.23E-02
LL85700394TRU		625-B								
LL85700394TRU			332	drum	---	lead	17.00E+01 gm			
LL85700394TRU								Am-241	6.40E-02	1.85E-02
LL85700394TRU								Pu-238	2.53E-02	1.46E-03
LL85700394TRU								Pu-239	5.37E-01	8.54E+00
LL85700394TRU								Pu-240	1.24E-01	5.39E-01
LL85700394TRU								Pu-241	3.62E+00	3.48E-02
LL85700394TRU								Pu-242	1.45E-05	3.65E-03
LL85700407TRU		625-B								
LL85700407TRU			332	drum	---					
LL85700407TRU								Am-241	3.53E-02	1.02E-02
LL85700407TRU								Pu-238	5.98E-03	3.46E-04
LL85700407TRU								Pu-239	2.60E-02	4.14E-01
LL85700407TRU								Pu-240	2.10E-02	9.13E-02
LL85700407TRU								Pu-241	6.43E-01	6.18E-03
LL85700407TRU								Pu-242	8.99E-06	2.26E-03
LL85700412TRU		625-B								
LL85700412TRU			332	drum	---					
LL85700412TRU								Am-241	7.52E-03	2.17E-03
LL85700412TRU								Pu-238	2.97E-03	1.72E-04
LL85700412TRU								Pu-239	6.31E-02	1.00E+00
LL85700412TRU								Pu-240	1.46E-02	6.33E-02
LL85700412TRU								Pu-241	4.25E-01	4.09E-03
LL85700412TRU								Pu-242	1.70E-06	4.29E-04

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85700445TRU		625-B								
LL85700445TRU			332	drum	---					
LL85700445TRU								Am-241	3.29E-02	9.49E-03
LL85700445TRU								Pu-238	1.30E-02	7.52E-04
LL85700445TRU								Pu-238	1.73E-02	1.00E-03
LL85700445TRU								Pu-239	2.76E-01	4.39E+00
LL85700445TRU								Pu-240	6.38E-02	2.77E-01
LL85700445TRU								Pu-241	1.86E+00	1.79E-02
LL85700445TRU								Pu-242	7.46E-06	1.88E-03
LL85700450TRU		612-1B								
LL85700450TRU			332	box	60x66x87					
LL85700450TRU								Am-241	1.65E-03	4.75E-04
LL85700450TRU								Pu-238	6.52E-04	3.77E-05
LL85700450TRU								Pu-239	1.38E-02	2.20E-01
LL85700450TRU								Pu-240	3.19E-03	1.39E-02
LL85700450TRU								Pu-241	9.33E-02	8.97E-04
LL85700450TRU								Pu-242	3.74E-07	9.42E-05
LL85700469TRU		612-1B								
LL85700469TRU			332	box	67x85x89					
LL85700469TRU								Am-241	7.76E-02	2.24E-02
LL85700469TRU								Pu-238	1.51E-02	8.71E-04
LL85700469TRU								Pu-239	1.12E-01	1.79E+00
LL85700469TRU								Pu-240	5.59E-02	2.43E-01
LL85700469TRU								Pu-241	1.69E+00	1.63E-02
LL85700469TRU								Pu-242	1.95E-05	4.91E-03
LL85700474TRU		612-1B								
LL85700474TRU			332	box	138x48x53					
LL85700474TRU								Am-241	1.65E-03	4.75E-04
LL85700474TRU								Pu-238	6.52E-04	3.77E-05
LL85700474TRU								Pu-239	1.38E-02	2.20E-01
LL85700474TRU								Pu-240	3.19E-03	1.39E-02
LL85700474TRU								Pu-241	9.33E-02	8.97E-04
LL85700474TRU								Pu-242	3.74E-07	9.42E-05
LL85700486TRU		625-B								
LL85700488TRU			332	drum	---					
LL85700488TRU								Am-241	1.27E-03	3.65E-04
LL85700488TRU								Pu-238	5.01E-04	2.89E-05
LL85700488TRU								Pu-239	1.06E-02	1.69E-01
LL85700488TRU								Pu-240	2.45E-03	1.07E-02
LL85700488TRU								Pu-241	7.16E-02	6.89E-04
LL85700488TRU								Pu-242	2.87E-07	7.23E-05
LL85700493TRU		625-B								
LL85700493TRU			332	drum	---					
LL85700493TRU								Am-241	2.78E-02	8.00E-03
LL85700493TRU								Am-241	4.04E-02	1.16E-02
LL85700493TRU								Pu-238	1.59E-02	9.22E-04
LL85700493TRU								Pu-238	2.42E-01	1.40E-02
LL85700493TRU								Pu-239	3.39E-01	5.39E+00
LL85700493TRU								Pu-240	7.82E-02	3.40E-01
LL85700493TRU								Pu-241	2.28E+00	2.20E-02
LL85700493TRU								Pu-242	9.15E-06	2.30E-03
LL85700501TRU		625-B								
LL85700501TRU			332	drum	---					
LL85700501TRU								Am-241	2.39E-02	6.90E-03
LL85700501TRU								Pu-238	9.45E-03	5.46E-04
LL85700501TRU								Pu-239	2.01E-01	3.19E+00
LL85700501TRU								Pu-240	4.63E-02	2.02E-01
LL85700501TRU								Pu-241	1.35E+00	1.30E-02
LL85700501TRU								Pu-242	5.42E-06	1.37E-03
LL85700520TRU		625-B								
LL85700520TRU			332	drum	---					
LL85700520TRU								Am-241	3.54E-02	1.02E-02
LL85700520TRU								Pu-238	1.40E-02	8.08E-04
LL85700520TRU								Pu-239	2.97E-01	4.72E+00
LL85700520TRU								Pu-240	6.85E-02	2.98E-01
LL85700520TRU								Pu-241	2.00E+00	1.92E-02
LL85700520TRU								Pu-242	8.02E-06	2.02E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85700539TRU		625-B					18.90E-01			
LL85700539TRU			332	drum	---	MP OIL	lir			
LL85700539TRU						TCE	lir			
LL85700539TRU								Am-241	5.02E-02	1.45E-02
LL85700539TRU								Pu-238	1.98E-02	1.15E-03
LL85700539TRU								Pu-239	4.21E-01	6.69E+00
LL85700539TRU								Pu-240	9.72E-02	4.22E-01
LL85700539TRU								Pu-241	2.84E+00	2.73E-02
LL85700539TRU								Pu-242	1.14E-05	2.86E-03
LL85700544TRU						FINE PARTICLES OF AM-241	65.00E-03 gm			
LL85700544TRU		625-B								
LL85700544TRU			251	drum	---	ASBESTOS	90.70E+01 gm			
LL85700544TRU								Am-241	2.00E-01	5.76E-02
LL85700577TRU	8/26/92	625-B								
LL85700577TRU			332	drum	---					
LL85700577TRU								Am-241	4.00E-03	1.15E-03
LL85700577TRU								Pu-238	1.58E-03	9.14E-05
LL85700577TRU								Pu-239	3.36E-02	5.34E-01
LL85700577TRU								Pu-240	7.75E-03	3.37E-02
LL85700577TRU								Pu-241	2.26E-01	2.18E-03
LL85700577TRU								Pu-242	9.07E-07	2.28E-04
LL85700582TRU		625-B								
LL85700582TRU			332	drum	---					
LL85700582TRU								Am-241	1.01E-01	2.90E-02
LL85700582TRU								Pu-238	3.98E-02	2.30E-03
LL85700582TRU								Pu-239	8.45E-01	1.34E+01
LL85700582TRU								Pu-240	1.95E-01	8.48E-01
LL85700582TRU								Pu-241	5.69E+00	5.47E-02
LL85700582TRU								Pu-242	2.28E-05	5.75E-03
LL85700596TRU	5/15/92	625-B								
LL85700596TRU			332	drum	---					
LL85700596TRU								Am-241	4.57E-02	1.32E-02
LL85700596TRU								Pu-238	1.80E-02	1.04E-03
LL85700596TRU								Pu-239	3.83E-01	6.09E+00
LL85700596TRU								Pu-240	8.84E-02	3.84E-01
LL85700596TRU								Pu-241	2.58E+00	2.48E-02
LL85700596TRU								Pu-242	1.03E-05	2.61E-03
LL85700600TRU	9/4/92	625-B								
LL85700600TRU			332	drum	---					
LL85700600TRU								Am-241	1.73E-02	4.99E-03
LL85700600TRU								Pu-238	6.84E-03	3.95E-04
LL85700600TRU								Pu-239	1.45E-01	2.31E+00
LL85700600TRU								Pu-240	3.35E-02	1.46E-01
LL85700600TRU								Pu-241	9.79E-01	9.42E-03
LL85700600TRU								Pu-242	3.92E-06	9.89E-04
LL85700619TRU		625-B								
LL85700619TRU			332	drum	---					
LL85700619TRU								Am-241	1.48E-02	4.28E-03
LL85700619TRU								Am-241	1.25E-01	3.60E-02
LL85700619TRU								Pu-238	5.86E-03	3.39E-04
LL85700619TRU								Pu-239	1.73E-01	1.00E-02
LL85700619TRU								Pu-240	1.24E-01	1.98E+00
LL85700619TRU								Pu-241	2.87E-02	1.25E-01
LL85700619TRU								Pu-241	8.39E-01	8.06E-03
LL85700619TRU								Pu-242	3.36E-06	8.47E-04
LL85700624TRU	4/30/93	625-B								
LL85700624TRU			332	drum	---					
LL85700624TRU								Am-241	2.24E-02	6.44E-03
LL85700624TRU								Pu-238	8.83E-03	5.10E-04
LL85700624TRU								Pu-239	1.88E-01	2.98E+00
LL85700624TRU								Pu-240	4.33E-02	1.88E-01
LL85700624TRU								Pu-241	1.26E+00	1.22E-02
LL85700624TRU								Pu-242	5.06E-06	1.28E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85700643TRU	5/7/93	612-100								
LL85700643TRU			332	drum	---			Am-241	7.24E-02	2.09E-02
LL85700643TRU								Pu-238	2.86E-02	1.65E-03
LL85700643TRU								Pu-239	6.07E-01	9.65E+00
LL85700643TRU								Pu-240	1.40E-01	6.09E-01
LL85700643TRU								Pu-241	4.09E+00	3.93E-02
LL85700643TRU								Pu-242	1.64E-05	4.13E-03
LL85700657TRU	12/18/92	625-B								
LL85700657TRU			332	drum	---			Am-241	1.05E+00	3.01E-01
LL85700657TRU								Pu-238	1.77E-01	1.02E-02
LL85700657TRU								Pu-239	7.71E-01	1.23E+01
LL85700657TRU								Pu-240	6.22E-01	2.70E+00
LL85700657TRU								Pu-241	1.90E+01	1.83E-01
LL85700657TRU								Pu-242	2.66E-04	6.70E-02
LL85700662TRU	5/21/93	625-B								
LL85700662TRU			332	drum	---			Am-241	5.59E-02	1.61E-02
LL85700662TRU								Pu-238	2.21E-02	1.28E-03
LL85700662TRU								Pu-239	4.69E-01	7.46E+00
LL85700662TRU								Pu-240	1.08E-01	4.71E-01
LL85700662TRU								Pu-241	3.16E+00	3.04E-02
LL85700662TRU								Pu-242	1.27E-05	3.19E-03
LL85701176TRU	10/23/92	625-B								
LL85701176TRU			332	drum	---			Am-241	2.20E-01	6.35E-02
LL85701176TRU								Pu-238	3.74E-02	2.16E-03
LL85701176TRU								Pu-239	1.62E-01	2.58E+00
LL85701176TRU								Pu-240	1.31E-01	5.70E-01
LL85701176TRU								Pu-241	4.01E+00	3.86E-02
LL85701176TRU								Pu-242	5.61E-05	1.41E-02
LL85800039TRU	2/12/93	625-B								
LL85800039TRU			332	drum	---			Am-241	1.30E-01	3.75E-02
LL85800039TRU								Pu-238	5.14E-02	2.97E-03
LL85800039TRU								Pu-239	1.09E+00	1.74E+01
LL85800039TRU								Pu-240	2.52E-01	1.10E+00
LL85800039TRU								Pu-241	7.36E+00	7.07E-02
LL85800039TRU								Pu-242	2.95E-05	7.43E-03
LL85800044TRU		625-B								
LL85800044TRU			332	drum	---			Am-241	2.21E-01	6.36E-02
LL85800044TRU								Pu-238	4.28E-02	2.48E-03
LL85800044TRU								Pu-239	3.20E-01	5.08E+00
LL85800044TRU								Pu-240	1.59E-01	6.91E-01
LL85800044TRU								Pu-241	4.81E+00	4.62E-02
LL85800044TRU								Pu-242	5.55E-05	1.40E-02
LL85800077TRU		625-B								
LL85800077TRU			251	drum	---	lead	20.00E+02 gm			
LL85800077TRU								Am-241	6.10E-02	1.76E-02
LL85800077TRU								Cm-244	1.83E+01	2.24E-01
LL85800275TRU		625-B								
LL85800275TRU			322	drum	---					
LL85800275TRU								Am-241	5.56E-01	1.60E-01
LL85800275TRU								Pu-238	9.42E-02	5.45E-03
LL85800275TRU								Pu-239	4.10E-01	6.52E+00
LL85800275TRU								Pu-240	3.31E-01	1.44E+00
LL85800275TRU								Pu-241	1.01E+01	9.74E-02
LL85800275TRU								Pu-242	1.42E-04	3.56E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85800299TRU		625-B					16.34E+03			
LL85800299TRU			332	drum	--	Pb	gm			
LL85800299TRU								Am-241	1.13E-02	3.25E-03
LL85800299TRU								Pu-238	4.45E-03	2.57E-04
LL85800299TRU								Pu-239	9.45E-02	1.50E+00
LL85800299TRU								Pu-240	2.18E-02	9.49E-02
LL85800299TRU								Pu-241	6.37E-01	6.13E-03
LL85800299TRU								Pu-242	2.55E-06	6.43E-04
LL85800303TRU		625-B								
LL85800303TRU			251	drum	--					
LL85800303TRU								Am-241	1.40E-01	4.03E-02
LL85800303TRU								Am-242m	1.60E-04	1.63E-05
LL85800303TRU								Cm-244	5.00E+00	6.11E-02
LL85800303TRU								Pu-238	7.00E-04	4.05E-05
LL85800303TRU								Pu-239	4.00E-03	6.36E-02
LL85800317TRU		233 WAA								
LL85800317TRU			332	drum	--					
LL85800317TRU								Am-241	8.77E+00	2.53E+00
LL85800317TRU								Pu-238	1.14E-01	6.60E-03
LL85800317TRU								Pu-239	4.80E-01	7.62E+00
LL85800317TRU								Pu-240	3.87E-01	1.68E+00
LL85800317TRU								Pu-241	1.19E+01	1.14E-01
LL85800317TRU								Pu-242	1.65E-04	4.16E-02
LL85800322TRU		625-B								
LL85800322TRU			332	drum	--					
LL85800322TRU								Am-241	3.75E-02	1.08E-02
LL85800322TRU								Pu-238	6.36E-03	3.68E-04
LL85800322TRU								Pu-239	2.77E-02	4.40E-01
LL85800322TRU								Pu-240	2.23E-02	9.71E-02
LL85800322TRU								Pu-241	6.84E-01	6.58E-03
LL85800322TRU								Pu-242	9.56E-06	2.41E-03
LL85800336TRU		625-B								
LL85800336TRU			332	drum	--					
LL85800336TRU								Am-241	5.93E-01	1.71E-01
LL85800336TRU								Pu-238	1.00E-01	5.81E-03
LL85800336TRU								Pu-239	4.37E-01	6.95E+00
LL85800336TRU								Pu-240	3.53E-01	1.53E+00
LL85800336TRU								Pu-241	1.08E+01	1.04E-01
LL85800336TRU								Pu-242	1.51E-04	3.80E-02
LL85800360TRU		625-B								
LL85800360TRU			332	drum	--					
LL85800360TRU								Am-241	8.99E-02	2.59E-02
LL85800360TRU								Pu-238	3.55E-02	2.05E-03
LL85800360TRU								Pu-239	7.54E-01	1.20E+01
LL85800360TRU								Pu-240	1.74E-01	7.57E-01
LL85800360TRU								Pu-241	5.08E+00	4.89E-02
LL85800360TRU								Pu-242	2.04E-05	5.13E-03
LL85800379TRU		625-B								
LL85800379TRU			332	drum	--					
LL85800379TRU								Am-241	1.69E-01	4.87E-02
LL85800379TRU								Pu-238	6.67E-02	3.86E-03
LL85800379TRU								Pu-239	1.42E+00	2.25E+01
LL85800379TRU								Pu-240	3.27E-01	1.42E+00
LL85800379TRU								Pu-241	9.55E+00	9.18E-02
LL85800379TRU								Pu-242	3.83E-05	9.64E-03
LL85800416TRU		625-B								
LL85800416TRU			332	drum	--					
LL85800416TRU								Am-241	1.15E+00	3.32E-01
LL85800416TRU								Pu-238	1.95E-01	1.13E-02
LL85800416TRU								Pu-239	8.48E-01	1.35E+01
LL85800416TRU								Pu-240	6.84E-01	2.98E+00
LL85800416TRU								Pu-241	2.10E+01	2.01E-01
LL85800416TRU								Pu-242	2.93E-04	7.37E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85800421TRU	4/30/93	625-B								
LL85800421TRU			332	drum	---					
LL85800421TRU								Am-241	9.64E-02	2.78E-02
LL85800421TRU								Am-241	1.74E+00	5.00E-01
LL85800421TRU								Pu-238	1.02E-02	2.20E-03
LL85800421TRU								Pu-239	8.11E-01	1.29E+01
LL85800421TRU								Pu-240	1.87E-01	8.11E-01
LL85800421TRU								Pu-241	5.45E+00	5.24E-02
LL85800421TRU								Pu-242	2.18E-05	5.50E-03
LL85800435TRU		625-B								
LL85800435TRU			332	drum	---					
LL85800435TRU								Am-241	3.36E-03	9.68E-04
LL85800435TRU								Pu-238	1.33E-03	7.67E-05
LL85800435TRU								Pu-239	2.82E-02	4.48E-01
LL85800435TRU								Pu-240	6.50E-03	2.83E-02
LL85800435TRU								Pu-241	1.90E-01	1.83E-03
LL85800435TRU								Pu-242	7.61E-07	1.92E-04
LL85800440TRU		625-B								
LL85800440TRU			332	drum	---					
LL85800440TRU								Am-241	2.48E-01	7.14E-02
LL85800440TRU								Pu-238	4.81E-02	2.78E-03
LL85800440TRU								Pu-239	1.73E-01	1.00E-02
LL85800440TRU								Pu-240	3.58E-01	5.70E+00
LL85800440TRU								Pu-241	1.78E-01	7.75E-01
LL85800440TRU								Pu-242	5.39E+00	5.19E-02
LL85800440TRU								Pu-242	6.22E-05	1.57E-02
LL85800459TRU		612-1B								
LL85800459TRU			332	box	54x52x87					
LL85800459TRU								Am-241	2.47E-01	7.11E-02
LL85800459TRU								Pu-238	9.51E-02	5.50E-03
LL85800459TRU								Pu-239	2.07E+00	3.29E+01
LL85800459TRU								Pu-240	4.78E-01	2.08E+00
LL85800459TRU								Pu-241	1.39E+01	1.34E-01
LL85800459TRU								Pu-242	5.58E-05	1.41E-02
LL85800464TRU		612-1B								
LL85800464TRU			332	box	54x52x87					
LL85800464TRU								Am-241	3.60E-03	1.04E-03
LL85800464TRU								Pu-238	1.39E-03	8.02E-05
LL85800464TRU								Pu-239	3.02E-02	4.80E-01
LL85800464TRU								Pu-240	6.97E-03	3.03E-02
LL85800464TRU								Pu-241	2.03E-01	1.95E-03
LL85800464TRU								Pu-242	8.14E-07	2.05E-04
LL85800483TRU	8/26/92	625-B								
LL85800483TRU			332	drum	---					
LL85800483TRU								Am-241	1.25E-01	3.59E-02
LL85800483TRU								Pu-238	4.93E-02	2.85E-03
LL85800483TRU								Pu-239	1.05E+00	1.66E+01
LL85800483TRU								Pu-240	2.41E-01	1.05E+00
LL85800483TRU								Pu-241	7.05E+00	6.78E-02
LL85800483TRU								Pu-242	2.83E-05	7.12E-03
LL85800497TRU	9/4/92	625-B								
LL85800497TRU			332	drum	---					
LL85800497TRU								Am-241	1.37E-01	3.94E-02
LL85800497TRU								Pu-238	5.19E-02	3.00E-03
LL85800497TRU								Pu-239	5.40E-02	3.12E-03
LL85800497TRU								Pu-240	1.15E+00	1.83E+01
LL85800497TRU								Pu-241	2.65E-01	1.15E+00
LL85800497TRU								Pu-242	7.74E+00	7.44E-02
LL85800497TRU								Pu-242	3.10E-05	7.81E-03
LL85800505TRU		625-B								
LL85800505TRU			332	drum	---					
LL85800505TRU								Am-241	2.06E-01	5.95E-02
LL85800505TRU								Pu-238	8.15E-02	4.71E-03
LL85800505TRU								Pu-239	1.73E+00	2.75E+01
LL85800505TRU								Pu-240	4.00E-01	1.74E+00
LL85800505TRU								Pu-241	1.17E+01	1.12E-01
LL85800505TRU								Pu-242	4.68E-05	1.18E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85800510TRU	5/21/93	625-B								
LL85800510TRU			332	drum	---					
LL85800510TRU								Am-241	8.35E-02	2.41E-02
LL85800510TRU								Pu-238	3.30E-02	1.91E-03
LL85800510TRU								Pu-239	7.01E-01	1.11E+01
LL85800510TRU								Pu-240	1.62E-01	7.03E-01
LL85800510TRU								Pu-241	4.72E+00	4.54E-02
LL85800510TRU								Pu-242	1.89E-05	4.77E-03
LL85800529TRU		625-B								
LL85800529TRU			332	drum	---					
LL85800529TRU								Am-241	6.10E-04	1.76E-04
LL85800529TRU								Pu-238	2.41E-04	1.39E-05
LL85800529TRU								Pu-239	5.11E-03	8.13E-02
LL85800529TRU								Pu-240	1.18E-03	5.13E-03
LL85800529TRU								Pu-241	3.45E-02	3.31E-04
LL85800529TRU								Pu-242	1.38E-07	3.48E-05
LL85800534TRU	9/4/92	625-B								
LL85800534TRU			332	drum	---					
LL85800534TRU								Am-241	1.41E-02	4.08E-03
LL85800534TRU								Pu-238	5.59E-03	3.23E-04
LL85800534TRU								Pu-239	1.19E-01	1.89E+00
LL85800534TRU								Pu-240	2.74E-02	1.19E-01
LL85800534TRU								Pu-241	8.00E-01	7.69E-03
LL85800534TRU								Pu-242	3.20E-06	8.07E-04
LL85800548TRU	9/24/92	625-B								
LL85800548TRU			332	drum	---					
LL85800548TRU								Am-241	5.97E-02	1.72E-02
LL85800548TRU								Pu-238	1.01E-02	5.85E-04
LL85800548TRU								Pu-239	4.40E-02	7.00E-01
LL85800548TRU								Pu-240	3.55E-02	1.54E-01
LL85800548TRU								Pu-241	1.09E+00	1.05E-02
LL85800548TRU								Pu-242	1.52E-05	3.83E-03
LL85800548TRU								U-235	2.19E-08	1.00E-02
LL85800553TRU	5/15/92	625-B								
LL85800553TRU			332	drum	---					
LL85800553TRU								Am-241	1.57E+00	4.54E-01
LL85800553TRU								Pu-238	2.67E-01	1.54E-02
LL85800553TRU								Pu-239	1.16E+00	1.84E+01
LL85800553TRU								Pu-240	9.36E-01	4.07E+00
LL85800553TRU								Pu-241	2.87E+01	2.76E-01
LL85800553TRU								Pu-242	4.01E-04	1.01E-01
LL85800572TRU		625-B								
LL85800572TRU			332	drum	---					
LL85800572TRU								Am-241	9.01E-03	2.60E-03
LL85800572TRU								Pu-238	3.56E-03	2.06E-04
LL85800572TRU								Pu-239	7.56E-02	1.20E+00
LL85800572TRU								Pu-240	1.75E-02	7.59E-02
LL85800572TRU								Pu-241	5.10E-01	4.90E-03
LL85800572TRU								Pu-242	2.04E-06	5.14E-04
LL85800609TRU	5/15/92	625-B								
LL85800609TRU			332	drum	---					
LL85800609TRU								Am-241	9.76E-02	2.81E-02
LL85800609TRU								Pu-238	3.86E-02	2.23E-03
LL85800609TRU								Pu-239	8.19E-01	1.30E+01
LL85800609TRU								Pu-240	1.89E-01	8.22E-01
LL85800609TRU								Pu-241	5.52E+00	5.31E-02
LL85800609TRU								Pu-242	2.21E-05	5.57E-03
LL85800628TRU	8/26/92	625-B								
LL85800628TRU			332	drum	---					
LL85800628TRU								Am-241	1.07E-01	3.08E-02
LL85800628TRU								Pu-238	4.22E-02	2.44E-03
LL85800628TRU								Pu-239	8.97E-01	1.43E+01
LL85800628TRU								Pu-240	2.07E-01	9.00E-01
LL85800628TRU								Pu-241	6.05E+00	5.81E-02
LL85800628TRU								Pu-242	2.42E-05	6.10E-03

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURES	GRAMS
LL85800633TRU	10/23/92	625-B								
LL85800633TRU			332	drum	--					
LL85800633TRU								Am-241	2.36E-02	6.81E-03
LL85800633TRU								Pu-238	9.33E-03	5.40E-04
LL85800633TRU								Pu-239	1.98E-01	3.15E+00
LL85800633TRU								Pu-240	4.58E-02	1.99E-01
LL85800633TRU								Pu-241	1.34E+00	1.28E-02
LL85800633TRU								Pu-242	5.36E-06	1.35E-03
LL85800647TRU	3/26/93	625-B								
LL85800647TRU			332	drum	--					
LL85800647TRU								Am-241	2.36E-02	6.79E-03
LL85800647TRU								Pu-238	9.31E-03	5.38E-04
LL85800647TRU								Pu-239	1.98E-01	3.14E+00
LL85800647TRU								Pu-240	4.56E-02	1.98E-01
LL85800647TRU								Pu-241	1.33E+00	1.28E-02
LL85800647TRU								Pu-242	5.34E-06	1.34E-03
LL85800671TRU	5/21/93	625-B								
LL85800671TRU			332	drum	--					
LL85800671TRU								Am-241	7.16E-02	2.06E-02
LL85800671TRU								Pu-238	2.83E-02	1.63E-03
LL85800671TRU								Pu-239	6.01E-01	9.55E+00
LL85800671TRU								Pu-240	1.39E-01	6.03E-01
LL85800671TRU								Pu-241	4.05E+00	3.89E-02
LL85800671TRU								Pu-242	1.62E-05	4.09E-03
LL85801185TRU	2/12/93	625-B								
LL85801185TRU			332	drum	--					
LL85801185TRU								Am-241	1.12E-01	3.22E-02
LL85801185TRU								Pu-238	4.42E-02	2.55E-03
LL85801185TRU								Pu-239	9.38E-01	1.49E+01
LL85801185TRU								Pu-240	2.17E-01	9.42E-01
LL85801185TRU								Pu-241	6.33E+00	6.08E-02
LL85801185TRU								Pu-242	2.54E-05	6.39E-03
LL85801190TRU	2/12/93	625-B								
LL85801190TRU			332	drum	--					
LL85801190TRU								Am-241	7.69E-02	2.22E-02
LL85801190TRU								Pu-238	3.04E-02	1.75E-03
LL85801190TRU								Pu-239	6.45E-01	1.03E+01
LL85801190TRU								Pu-240	1.49E-01	6.47E-01
LL85801190TRU								Pu-241	4.35E+00	4.18E-02
LL85801190TRU								Pu-242	1.74E-05	4.39E-03
LL85900072TRU		625-B								
LL85900072TRU			332	drum	--					
LL85900072TRU								Am-241	7.50E-03	2.16E-03
LL85900072TRU								Pu-238	2.96E-03	1.71E-04
LL85900072TRU								Pu-239	6.29E-02	1.00E+00
LL85900072TRU								Pu-240	1.45E-02	6.31E-02
LL85900072TRU								Pu-241	4.24E-01	4.08E-03
LL85900072TRU								Pu-242	1.70E-06	4.28E-04
LL85900265TRU		625-B								
LL85900265TRU			332	drum	--					
LL85900265TRU								Am-241	1.14E+00	3.29E-01
LL85900265TRU								Pu-238	1.93E-01	1.12E-02
LL85900265TRU								Pu-239	8.42E-01	1.34E+01
LL85900265TRU								Pu-240	6.79E-01	2.95E+00
LL85900265TRU								Pu-241	2.06E+01	2.00E-01
LL85900265TRU								Pu-242	2.91E-04	7.32E-02
LL85900270TRU		625-B								
LL85900270TRU			332	drum	--					
LL85900270TRU								Am-241	1.50E+00	4.33E-01
LL85900270TRU								Pu-238	2.55E-01	1.47E-02
LL85900270TRU								Pu-239	1.11E+00	1.76E+01
LL85900270TRU								Pu-240	8.94E-01	3.89E+00
LL85900270TRU								Pu-241	2.74E+01	2.63E-01
LL85900270TRU								Pu-242	3.83E-04	9.64E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85900294TRU		625-B					31.92E+02 gm			
LL85900294TRU			332	drum	---	lead gloves		Am-241	9.72E+00	2.80E+00
LL85900294TRU								Pu-238	1.26E-01	7.31E-03
LL85900294TRU								Pu-239	5.31E-01	8.45E+00
LL85900294TRU								Pu-240	4.29E-01	1.86E+00
LL85900294TRU								Pu-241	1.31E+01	1.26E-01
LL85900294TRU								Pu-242	1.83E-04	4.61E-02
LL85900307TRU		625-B								
LL85900307TRU			332	drum	--			Am-241	8.01E-03	2.31E-03
LL85900307TRU								Pu-238	3.16E-03	1.83E-04
LL85900307TRU								Pu-239	6.72E-02	1.07E+00
LL85900307TRU								Pu-240	1.55E-02	6.74E-02
LL85900307TRU								Pu-241	4.53E-01	4.35E-03
LL85900307TRU								Pu-242	1.81E-06	4.57E-04
LL85900312TRU		625-B								
LL85900312TRU			234	drum	--			Am-241	2.35E-01	6.76E-02
LL85900312TRU								Pu-238	4.55E-02	2.63E-03
LL85900312TRU								Pu-239	3.40E-01	5.40E+00
LL85900312TRU								Pu-240	1.69E-01	7.34E-01
LL85900312TRU								Pu-241	5.11E+00	4.91E-02
LL85900312TRU								Pu-242	5.90E-05	1.49E-02
LL85900326TRU		625-B								
LL85900326TRU			332	drum	---			Am-241	1.04E+00	2.98E-01
LL85900326TRU								Pu-238	1.75E-01	1.01E-02
LL85900326TRU								Pu-239	7.63E-01	1.21E+01
LL85900326TRU								Pu-240	6.16E-01	2.68E+00
LL85900326TRU								Pu-241	1.89E+01	1.81E-01
LL85900326TRU								Pu-242	2.63E-04	6.64E-02
LL85900345TRU		625-B								
LL85900345TRU			332	drum	--			Am-241	5.02E+00	1.45E+00
LL85900345TRU								Pu-238	6.53E-02	3.78E-03
LL85900345TRU								Pu-239	2.75E-01	4.36E+00
LL85900345TRU								Pu-240	2.22E-01	9.63E-01
LL85900345TRU								Pu-241	6.78E+00	6.52E-02
LL85900345TRU								Pu-242	9.46E-05	2.38E-02
LL85900369TRU		625-B								
LL85900369TRU			332	drum	--	lead gloves	73.10E+01 gm	Am-241	1.20E+00	3.45E-01
LL85900369TRU								Pu-238	2.03E-01	1.17E-02
LL85900369TRU								Pu-239	8.82E-01	1.40E+01
LL85900369TRU								Pu-240	7.12E-01	3.09E+00
LL85900369TRU								Pu-241	2.18E+01	2.10E-01
LL85900369TRU								Pu-242	3.05E-04	7.67E-02
LL85900406TRU		625-B								
LL85900406TRU			332	drum	--			Am-241	2.62E-03	7.56E-04
LL85900406TRU								Pu-238	1.04E-03	5.99E-05
LL85900406TRU								Pu-239	2.20E-02	3.50E-01
LL85900406TRU								Pu-240	5.08E-03	2.21E-02
LL85900406TRU								Pu-241	1.48E-01	1.43E-03
LL85900406TRU								Pu-242	5.95E-07	1.50E-04
LL85900425TRU		625-B								
LL85900425TRU			332	drum	--			Am-241	8.98E-01	2.59E-01
LL85900425TRU								Pu-238	1.52E-01	8.79E-03
LL85900425TRU								Pu-239	6.62E-01	1.05E+01
LL85900425TRU								Pu-240	5.34E-01	2.32E+00
LL85900425TRU								Pu-241	1.63E+01	1.57E-01
LL85900425TRU								Pu-242	2.28E-04	5.76E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85900430TRU		625-B								
LL85900430TRU			332	drum	---					
LL85900430TRU								Am-241	6.00E-03	1.73E-03
LL85900430TRU								Pu-238	2.37E-03	1.37E-04
LL85900430TRU								Pu-239	5.03E-02	8.00E-01
LL85900430TRU								Pu-240	1.16E-02	5.05E-02
LL85900430TRU								Pu-241	3.39E-01	3.26E-03
LL85900430TRU								Pu-242	1.36E-06	3.42E-04
LL85900449TRU		612-1B								
LL85900449TRU			332	box	52x89x56					
LL85900449TRU								Am-241	1.50E-03	4.32E-04
LL85900449TRU								Pu-238	5.92E-04	3.42E-05
LL85900449TRU								Pu-239	1.26E-02	2.00E-01
LL85900449TRU								Pu-240	2.90E-03	1.26E-02
LL85900449TRU								Pu-241	8.48E-02	8.15E-04
LL85900449TRU								Pu-242	3.40E-07	8.56E-05
LL85900454TRU		612-1B								
LL85900454TRU			332	box	54x52x87					
LL85900454TRU								Am-241	1.84E-02	5.31E-03
LL85900454TRU								Pu-238	7.11E-03	4.11E-04
LL85900454TRU								Pu-239	1.55E-01	2.46E+00
LL85900454TRU								Pu-240	3.57E-02	1.55E-01
LL85900454TRU								Pu-241	1.04E+00	1.00E-02
LL85900454TRU								Pu-242	4.17E-06	1.05E-03
LL85900468TRU		612-1B								
LL85900468TRU			332	box	54x52x87					
LL85900468TRU								Am-241	1.50E-03	4.32E-04
LL85900468TRU								Pu-238	5.78E-04	3.34E-05
LL85900468TRU								Pu-239	1.26E-02	2.00E-01
LL85900468TRU								Pu-240	2.90E-03	1.26E-02
LL85900468TRU								Pu-241	8.47E-02	8.14E-04
LL85900468TRU								Pu-242	3.39E-07	8.54E-05
LL85900473TRU		612-1B								
LL85900473TRU			332	box	55x77x108					
LL85900473TRU								Am-241	1.05E-03	3.03E-04
LL85900473TRU								Pu-238	4.15E-04	2.40E-05
LL85900473TRU								Pu-239	8.81E-03	1.40E-01
LL85900473TRU								Pu-240	2.03E-03	8.84E-03
LL85900473TRU								Pu-241	5.94E-02	5.71E-04
LL85900473TRU								Pu-242	2.38E-07	5.99E-05
LL85900487TRU	9/24/92	625-B								
LL85900487TRU			332	drum	---					
LL85900487TRU								Am-241	5.86E-02	1.69E-02
LL85900487TRU								Pu-238	2.32E-02	1.34E-03
LL85900487TRU								Pu-239	4.92E-01	7.82E+00
LL85900487TRU								Pu-240	1.14E-01	4.94E-01
LL85900487TRU								Pu-241	3.32E+00	3.19E-02
LL85900487TRU								Pu-242	1.33E-05	3.35E-03
LL85900492TRU		625-B								
LL85900492TRU			332	drum	---					
LL85900492TRU								Am-241	2.79E-02	8.03E-03
LL85900492TRU								Pu-238	1.10E-02	6.36E-04
LL85900492TRU								Pu-239	2.34E-01	3.71E+00
LL85900492TRU								Pu-240	5.39E-02	2.34E-01
LL85900492TRU								Pu-241	1.57E+00	1.51E-02
LL85900492TRU								Pu-242	6.31E-06	1.59E-03
LL85900500TRU	9/24/92	625-B								
LL85900500TRU			332	drum	---					
LL85900500TRU								Am-241	7.53E-01	2.17E-01
LL85900500TRU								Pu-238	1.28E-01	7.37E-03
LL85900500TRU								Pu-239	5.55E-01	8.82E+00
LL85900500TRU								Pu-240	4.48E-01	1.95E+00
LL85900500TRU								Pu-241	1.37E+01	1.32E-01
LL85900500TRU								Pu-242	1.92E-04	4.83E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURES	GRAMS
LL85900519TRU		625-B								
LL85900519TRU			332	drum	---					
LL85900519TRU								Am-241	3.00E-02	8.65E-03
LL85900519TRU								Pu-238	1.18E-02	6.85E-04
LL85900519TRU								Pu-239	2.52E-01	4.00E+00
LL85900519TRU								Pu-240	5.81E-02	2.53E-01
LL85900519TRU								Pu-241	1.70E+00	1.63E-02
LL85900519TRU								Pu-242	6.80E-06	1.71E-03
LL85900524TRU		625-B								
LL85900524TRU			332	drum	---					
LL85900524TRU								Am-241	9.36E-03	2.70E-03
LL85900524TRU								Pu-238	3.70E-03	2.14E-04
LL85900524TRU								Pu-239	7.85E-02	1.25E+00
LL85900524TRU								Pu-240	1.81E-02	7.88E-02
LL85900524TRU								Pu-241	5.29E-01	5.09E-03
LL85900524TRU								Pu-242	2.12E-06	5.34E-04
LL85900538TRU	8/26/92	625-B								
LL85900538TRU			332	drum	---					
LL85900538TRU								Am-241	2.92E-03	8.43E-04
LL85900538TRU								Pu-238	1.16E-03	6.68E-05
LL85900538TRU								Pu-239	2.45E-02	3.90E-01
LL85900538TRU								Pu-240	5.66E-03	2.46E-02
LL85900538TRU								Pu-241	1.65E-01	1.59E-03
LL85900538TRU								Pu-242	6.63E-07	1.67E-04
LL85900543TRU	9/4/92	625-B								
LL85900543TRU			332	drum	---					
LL85900543TRU								Am-241	1.43E-01	4.11E-02
LL85900543TRU								Pu-238	5.63E-02	3.25E-03
LL85900543TRU								Pu-239	1.20E+00	1.90E+01
LL85900543TRU								Pu-240	2.76E-01	1.20E+00
LL85900543TRU								Pu-241	8.06E+00	7.75E-02
LL85900543TRU								Pu-242	3.23E-05	8.14E-03
LL85900576TRU	12/18/92	625-B								
LL85900576TRU			257	drum	---					
LL85900576TRU								Am-241	7.70E-02	2.22E-02
LL85900576TRU								Cm-244	3.55E+00	4.34E-02
LL85900576TRU								Np-237	2.30E-04	3.23E-01
LL85900576TRU								Pu-238	1.20E-01	6.94E-03
LL85900576TRU								Pu-242	4.30E-04	1.08E-01
LL85900581TRU	10/23/92	625-B								
LL85900581TRU			332	drum	---					
LL85900581TRU								Am-241	1.12E-01	3.22E-02
LL85900581TRU								Pu-238	4.42E-02	2.55E-03
LL85900581TRU								Pu-239	9.38E-01	1.49E+01
LL85900581TRU								Pu-240	2.17E-01	9.42E-01
LL85900581TRU								Pu-241	6.33E+00	6.08E-02
LL85900581TRU								Pu-242	2.54E-05	6.39E-03
LL85900595TRU	4/30/93	625-B								
LL85900595TRU			332	drum	---					
LL85900595TRU								Am-241	1.46E-01	4.21E-02
LL85900595TRU								Pu-238	5.77E-02	3.33E-03
LL85900595TRU								Pu-239	1.22E+00	1.95E+01
LL85900595TRU								Pu-240	2.83E-01	1.23E+00
LL85900595TRU								Pu-241	8.25E+00	7.94E-02
LL85900595TRU								Pu-242	3.31E-05	8.33E-03
LL85900604TRU	5/15/92	625-B								
LL85900604TRU			332	drum	---					
LL85900604TRU								Am-241	1.20E+00	3.46E-01
LL85900604TRU								Pu-238	2.03E-01	1.18E-02
LL85900604TRU								Pu-239	8.84E-01	1.41E+01
LL85900604TRU								Pu-240	7.14E-01	3.10E+00
LL85900604TRU								Pu-241	2.19E+01	2.10E-01
LL85900604TRU								Pu-242	3.05E-04	7.69E-02

SERIAL #	REC. @ HWM	LOCATION	BLDG	CONTAINER	CONTAINER SIZE	HAZARDOUS CONTENT	AMOUNT	NUCLIDE	CURIES	GRAMS
LL85900618TRU	5/15/92	625-B								
LL85900618TRU			332	drum	---					
LL85900618TRU								Am-241	5.71E-01	1.65E-01
LL85900618TRU								Pu-238	1.11E-01	6.41E-03
LL85900618TRU								Pu-239	8.27E-01	1.31E+01
LL85900618TRU								Pu-240	4.11E-01	1.79E+00
LL85900618TRU								Pu-241	1.24E+01	1.20E-01
LL85900618TRU								Pu-242	1.44E-04	3.61E-02
LL85900623TRU	8/26/92	625-B								
LL85900623TRU			332	drum	---					
LL85900623TRU								Am-241	7.89E-01	2.27E-01
LL85900623TRU								Pu-238	1.34E-01	7.73E-03
LL85900623TRU								Pu-239	5.81E-01	9.24E+00
LL85900623TRU								Pu-240	4.69E-01	2.04E+00
LL85900623TRU								Pu-241	1.44E+01	1.38E-01
LL85900623TRU								Pu-242	2.01E-04	5.06E-02
LL85900642TRU	8/26/92	625-B								
LL85900642TRU			332	drum	---					
LL85900642TRU								Am-241	7.99E-01	2.30E-01
LL85900642TRU								Pu-238	1.35E-01	7.82E-03
LL85900642TRU								Pu-239	5.89E-01	9.36E+00
LL85900642TRU								Pu-240	4.75E-01	2.07E+00
LL85900642TRU								Pu-241	1.45E+01	1.40E-01
LL85900642TRU								Pu-242	2.03E-04	5.12E-02
LL85901175TRU	9/4/92	625-B								
LL85901175TRU			332	drum	---					
LL85901175TRU								Am-241	7.28E-01	2.10E-01
LL85901175TRU								Pu-238	1.23E-01	7.13E-03
LL85901175TRU								Pu-239	5.36E-01	8.53E+00
LL85901175TRU								Pu-240	4.33E-01	1.88E+00
LL85901175TRU								Pu-241	1.33E+01	1.27E-01
LL85901175 TRU								Pu-242	1.85E-04	4.67E-02
LL85901180TRU	12/18/92	625-B								
LL85901180TRU			332	drum	---					
LL85901180TRU								Am-241	7.81E-02	2.25E-02
LL85901180TRU								Pu-238	3.08E-02	1.78E-03
LL85901180TRU								Pu-239	6.55E-01	1.04E+01
LL85901180TRU								Pu-240	1.51E-01	6.57E-01
LL85901180TRU								Pu-241	4.41E+00	4.24E-02
LL85901180TRU								Pu-242	1.77E-05	4.46E-03
		TOTAL OF	325	CONTAINERS						

Appendix 6.1

**Remediation schedules
under which both the Main
Site and Site 300 are
currently driven**

Appendix 6.1

Main Site : Schedule for LLNL Remedial Designs and Actions

Task	Completion date
Submit Draft RD1 to regulatory agencies and the community	10-10-92 ¹
Submit Draft Final RAIP to regulatory agencies	11-6-92
Issue RAIP	1-6-93 ²
Receive regulatory comments on RD1	12-10-92
Submit Draft Community Relations Plan Addendum to regulatory agencies and the community	1-31-93
Submit Draft Final RD1 to regulatory agencies	3-12-93
Begin operation of TFF	2-93
Issue RD1	4-12-93
Submit Draft RD2 to regulatory agencies, and the community	5-10-93 ¹
Submit Draft Final Community Relations Plan Addendum to regulatory agencies	5-31-93
Receive regulatory comments on Draft RD2	6-25-93
Issue Community Relations Plan Addendum	6-30-93 ¹
Submit Draft Final RD2 to regulatory agencies	8-10-93
Issue RD2	9-10-93 ²
Begin treatability study at T-5475	9-30-93
Submit Draft RD3 to regulatory agencies and the community	9-30-93 ¹
Begin operation of TFC	10-30-93
Receive regulatory comments on Draft RD3	12-1-93
Submit Draft Final RD3 to regulatory agencies	2-1-94
Table 5 (continued)	
Issue RD3	3-1-94 ²
Receive regulatory comments on Draft RD4	5-30-94
Submit Draft RD5 to regulatory agencies and the community	6-1-94 ¹
Complete investigation of B-518	6-1-94
Submit Draft Final RD4 to regulatory agencies	7-30-94
Receive regulatory comments on Draft RD5	8-1-94
Task	Completion date
Issue RD4	8-30-94
Begin operation of TFD	9-30-94
Begin operation of TFE	9-30-94
Submit Draft Final RD5 to regulatory agencies	10-1-94
Issue RD5	11-1-94 ²
Begin operation of Trailer 5475 treatment system	3-10-95
Begin operation of TFG	5-1-95

¹These dates are enforceable under the LLNL Livermore site Federal Facility Agreement.

²These dates can be met only if there are few or no comments on the Draft Final version.

Notes:

- 1) All primary FFA documents will be submitted to DOE 30 days prior to submission to the regulatory agencies.
- 2) There will be five phased Remedial Design (RD) submittals (RD1 through RD5).
- 3) Extraction wells will be phased-in over a 3-year period beginning in the year the treatment facility is constructed.
- 4) Draft RD #1 = Background information for TFA and TFB and associated extraction wells and piezometers.
- 5) Draft RD #2 = TFC, TFF, and associated extraction wells and piezometers.
- 6) Draft RD #3 = TFD, TFE, associated extraction wells and piezometers, and B-518 vapor extraction treatability study results.
- 7) Draft RD #4 = Trailer 5475.
- 8) Draft RD #5 = TFG and associated extraction wells and piezometers.

Site 300:

Submittal dates for Operable Units #1 through #6

Draft SWRI	Draft Final SWRI	OU	Draft FS*	Draft Final FS*	Draft PP*	Draft Final PP*	Target Public Meeting Date	Draft ROD*	Draft Final ROD*
8/9/93	1/24/94	#1 GSA	9/3/93	3/18/94	5/19/94	8/2/94	9/13/94	10/31/94	3/15/95
		#2 B834	2/1/94	6/15/94	8/31/94	9/15/94	2/14/95	3/31/95	8/14/95
		#3 Pit 6	3/1/94	7/15/94	9/29/94	12/13/94	2/14/95	4/28/95	9/11/95
		#4 HE Process Area	4/1/94	8/15/94	10/20/94	1/3/95	2/14/95	5/31/95	10/13/95
		#5 East & West Firing Areas	5/2/94	9/14/94	12/20/94	3/6/95	5/17/95	8/1/95	12/14/95
		#6 B833 and Misc.	6/6/94	10/19/94	1/20/95	4/5/95	5/17/95	9/4/95	1/31/96

*Primary Documents

Assumption

1. Submittal dates for Draft Final Proposed Plan (PP) based on accelerated review time of 30 days by regulatory agencies and 45 day DOE response period.

DATE

FILMED

8 / 11 / 94

END