California Environmental Protection Agency
Department of Toxic Substances Control

HAZARDOUS WASTE FACILITY PERMIT

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Facility Name: Ernest Orlando Lawrence
Berkeley National Laboratory
1 Cyclotron Road
Berkeley, California 94720

Owner Name: US Department of Energy
Berkeley Site Office
1301 Clay Street
Oakland, California 94612

Operator Name: University of California
Berkeley Site Office
1 Cyclotron Road,
MS 90R1140,
Berkeley, California 94720

Permit Number: 03-BRK-11

Facility EPA ID Number: CA 4890008986

Effective Date: December 22, 2006

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Expiration Date: December 21, 2016

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Pursuant to Section 25200 of the California Health and Safety Code, this RCRA-equivalent Hazardous Waste Facility Permit is hereby issued jointly to the University of California, Ernest Orlando Lawrence Berkeley National Laboratory and the United States Department of Energy.

This issuance of this permit is subject to the conditions set forth in Attachment A which consists of 58 pages, including the cover page.

_____
Mohinder S. Sandhu, P.E., Chief
Standardized Permitting and Corrective Action Branch
Department of Toxic Substances Control
Date: _____

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Attachment A

Hazardous Waste Facility Permit

Ernest Orlando Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley, California 94720
US EPA ID No. CA 4890008986

I. DEFINITIONS

All terms used in this Permit shall have the same meaning as those terms have in the California Health and Safety Code, division 20, chapter 6.5 and California Code of Regulations, title 22, division 4.5, unless expressly provided otherwise by this Permit.

1. **"DTSC"** as used in this Permit means the California Department of Toxic Substances Control.

2. "**Permittee**" as used in this Permit means the Owner and the Operator.

3. "**CCR**" used in this Permit means the California Code of Regulations.

4. Unless explicitly stated otherwise, all references to items in this Permit shall refer only to items occurring within the same part.

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II. DESCRIPTION OF THE FACILITY

A. FACILITY OWNER:

The facility owner is the United States Department of Energy (DOE) Berkeley Site Office (hereafter "owner").

B. FACILITY OPERATOR:

The facility operator is University of California Berkeley Site Office (hereafter "operator").

C. LOCATION:

The facility is located at 1 Cyclotron Road in the City of Berkeley, California on 130 acres of land (latitude 37 (52' 040", longitude 122 (14' 035"). Most of Lawrence Berkeley National Laboratory (LBNL) is located within the hillside area, east of the main campus of the University of California (Figure 1). The Hazardous Waste Handling Facility (HWHF) is located in Plot O, Book 048H, map 7800. The facility parcel numbers are 039-01, 029-01, 017-01, 002-01, and 004.

D. OPERATIONS:

The HWHF is situated in the eastern portion of LBNL (Figure 2). The HWHF comprises of Building 85 and its associated yard area with prefabricated units, where hazardous and mixed waste treatment and storage take place.

Building 85 was completed on April 17, 1997. The maximum aggregate storage capacity of both hazardous and mixed wastes at the facility is 23,320 gallons. Maximum storage capacity for each unit can be found in Table 2 of this permit (The maximum aggregate treatment capacity of the facility is 1158 gallons per day). Maximum treatment capacities for each unit can be found in Table 3 of this permit.

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At LBNL, hazardous and mixed wastes are characterized at the point of generation by the generators. Generators are responsible for properly labeling wastes, segregating incompatible wastes, storing wastes in compatible containers, and placing the containerized wastes in generator satellite accumulation areas or waste accumulation areas. The wastes are then transferred to the HWHF. At the HWHF, the following operations are conducted:

- Storage of hazardous and mixed waste in containers
- Consolidation of compatible wastes into U.S. Department of Transportation (DOT)-approved containers.

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- Lab-packing
- Treatment of waste as listed in Table 3

LBNL hazardous and mixed wastes are shipped off-site for treatment, disposal, or recycling.

Processes That Produce Waste:

Laboratory chemicals and reagents used for research experiments represent 50 percent of the total waste generated at LBNL. Most of these wastes are managed by lab-packing. The remaining waste streams are generated at fabrication and maintenance shops and are managed in bulk containers (55-gallon drums, for example) or in lab-packs.

HWHF Waste Handling Operations:

Receipt and Segregation of Waste: Wastes received at the HWHF may be placed in a staging area before transfer to permitted storage units, other storage areas, or to treatment units at the HWHF. Waste containers designated for quality assurance (QA) sampling are sampled in the appropriate fume hoods before the containers are transferred to their designated storage or treatment areas.

Storage: Containerized wastes are stored at the HWHF in permitted storage rooms or outdoor areas until they are transported offsite to an authorized Treatment, Storage, and Disposal (TSD) facility. Wastes are packaged in containers that meet containment and waste compatibility requirements.

Lab-packing: Small waste containers (5 gallons or less, sealed glass containers, or plastic containers) received from satellite accumulation areas (SAAs) are segregated and stored until sufficient quantity is accumulated for lab-packing or treatment. Containers are segregated and stored in hazardous waste storage cabinets or within a storage unit. The containers are lab-packed in polyethylene drums or steel drums. Absorbent material is added to minimize voids between small containers.

Types of Waste Stored: Hazardous and mixed wastes are liquids or solids, characteristic and listed Resource Conservation and Recovery Act (RCRA) hazardous wastes, or California-only hazardous wastes. Examples include corrosive liquids, solvents, oils, coolants, contaminated soil, motor vehicle batteries, metal sludges, polychlorinated biphenyls (PCBs) and PCB-contaminated equipment, mercury wastes, oily rags, latex and oil-based paint materials, and spent activated carbon.

E. FACILITY SIZE AND TYPE FOR FEE PURPOSES:

This is a small treatment facility.

F. PERMITTING HISTORY:

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A RCRA Part B application was prepared in 1983 and a permit was issued for such operations at the former HWHF (Building 75). Upon expiration of the permit in 1988, LBNL continued to operate pursuant to Section II-1 of its Permit (and Title 22 California Code of Regulations). In 1991, LBNL submitted a permit renewal application. DTSC issued a permit in May 4, 1993. This permit authorized the construction of a replacement hazardous waste handling facility. In April 1997 the former HWHF ceased operations and was closed in accordance with approved closure plan. Building 85 HWHF began operations in April 1997.

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III. GENERAL CONDITIONS

A. PERMIT APPLICATION DOCUMENTS:

A.1. The Part "A" Application and the Part "B" Application (Operation Plan), both dated November 2002, are hereby approved and made part of this Permit by reference. The Part "A" Application and the Operation Plan consist of the following documents:

- "Hazardous Waste Treatment and Storage Permit Application for the Lawrence Berkeley National Laboratory Hazardous Waste Handling Facility, Volume 1, Part A, November 2002. (Part "A")"
- "Hazardous Waste Treatment and Storage Permit Application for the Lawrence Berkeley National Laboratory Hazardous Waste Handling Facility, Volume 3A, Part B, Replacement Hazardous Waste Handling Facility (Building 85 and Yard Area), November 2002. (Operation Plan)"
- "Hazardous Waste Treatment and Storage Permit Application for the Lawrence Berkeley National Laboratory Hazardous Waste Handling Facility, Volume 3B, Part B, November 2002. (Operation Plan)"

A.2. The approved Permit Application and this Permit shall be maintained at the facility and place of business at all times until closure is completed.

B. EFFECT OF THE PERMIT:

B.1. The Permittee shall comply with the provisions of the California Health and Safety Code, and division 4.5 of title 22 of the California Code of Regulations. The issuance of this Permit by DTSC does not release the Permittee from any liability or duty imposed by federal or state statutes and regulations or local ordinances, except the obligation to obtain this Permit. The Permittee shall obtain the permits required by other governmental agencies, including but not limited to, those permits required by the applicable land use planning, zoning, hazardous waste, air quality, water quality, and solid waste management laws for the construction and/or operation of the Facility.

B.2. The Permittee is permitted to treat and store hazardous wastes in accordance with the conditions of this Permit. Any treatment or storage of hazardous waste not specifically authorized in this Permit is strictly prohibited.

B.3. Compliance with the terms of this Permit does not constitute a defense to any action brought under any law governing protection of public health or the environment, including but not limited to, one brought for any imminent and substantial endangerment to human health or the environment.

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B.4. DTSC's issuance of this Permit does not prevent DTSC from adopting or amending regulations that impose additional or more stringent requirements than those in existence at the time this Permit was issued, and does not prevent the enforcement of these requirements against the Permittee.

B.5. Failure to comply with any terms or conditions set forth in the Permit in the time or manner specified herein will subject the Permittee to possible enforcement action, including but not limited to penalties pursuant to California Health and Safety Code section 25187.

B.6. In addition, failure to submit any information required in connection with the Permit, or falsification and/or misrepresentation of any submitted information, is ground for revocation of this Permit (22 Cal. Code Regs., title, section 66270.43).

B.7 In case of conflicts between the Operation Plan and the Permit, the Permit conditions takes precedence.

B.8 The Permit includes and incorporates by reference any conditions of waste discharge requirements issued by the State Water Resources Control Board or any of the California Regional Water Quality Control Boards and any other conditions imposed pursuant to section 13227 of the Water Code.

C. COMPLIANCE WITH CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA):

C.1. Pursuant to the provisions of CEQA (Public Resources Code, division 13, commencing with section 21000), DTSC is a Responsible Agency for operation of the HWHF. The University of California (University) is the Lead Agency. As the Lead Agency, the University has analyzed the effects of HWHF operations in several environmental documents it prepared and certified pursuant to CEQA. These documents include, but are not limited to, the following:

- Addendum to the Construction of Replacement of Hazardous Waste Handling Facility Final, Environmental Impact Report – Lawrence Berkeley National Laboratory, University of California, Lawrence Berkeley National Laboratory, March 2003
- Updated Risk Analysis for Berkeley Laboratory Hazardous Waste Handling Facility, Parsons, October 2002
- Subsequent Mitigated Negative Declaration, Modification of Permitted Hazardous Waste Handling Operations at the Ernest Orlando Berkeley National Laboratory, University of California, Lawrence Berkeley National Laboratory, May 1997.
- Final Safety Analysis Document for the Hazardous Waste Handling Operations at the Lawrence Berkeley National Laboratory, M.H. Chew & Associates, Inc., April 1997
- Final Environmental Impact Report – Construction of Replacement of Hazardous Waste Handling Facility – Lawrence Berkeley Laboratory, EIP Associates, may 1990

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- Lawrence Berkeley Laboratory – Site Development Plan – Final Environmental Impact Report, University of California, Lawrence Berkeley National Laboratory, August 1987

C.2 . DTSC has considered the above documents and concluded that they adequately assess the potential impacts of continued operation of the HWHF under this Permit. Consequently, additional CEQA documentation is not required for continued operation.

C.3. A Statement of Findings will be prepared and a Notice of Determination will be filed with the Governor's Office of Planning and Research/State Clearinghouse upon DTSC approval of this project.

D. WASTE MINIMIZATION CERTIFICATION:

Pursuant to California Health and Safety Code, section 25202.9, the Permittee shall certify annually, by March 1 for the previous year ending December 31, that:

D.1. The facility has a program in place to reduce the volume and toxicity of all hazardous and mixed wastes listed in Table 1 of this permit to the degree, determined by the Permittee, to be economically practicable.

D.2. The method of storage or treatment is the only practical method or combination of methods currently available to the facility, which minimizes the present and future threat to human health and the environment.

The Permittee shall make this certification, in accordance with 22 CCR 66270.11. The Permittee shall submit three copies of the certification to the Chief, Standardized Permitting and Corrective Action Branch, 700 Heinz Avenue, Berkeley, CA 94710 and shall record and maintain such certification in the facility Operating Record.

E. WASTE MINIMIZATION CONDITIONS:

The Permittee shall comply with the Hazardous Waste Source Reduction and Management Review Act (SB 14) requirements that are specified in the California Health and Safety Code sections 25244.19, 25244.20 and 25244.21, and any subsequent applicable statutes or regulations promulgated there under. This would include submittal of SB 14 documents to DTSC upon request. DTSC may require the facility to submit a more detailed status report explaining any deviation from, or changes to, the approved waste minimization plan.

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IV. PERMITTED UNITS AND ACTIVITIES

This permit authorizes operation only of the hazardous and mixed waste storage and treatment units and activities listed in this section. The Permittee shall not treat or store hazardous waste in any units other than those specified in this Section. Any modifications to a unit or activity authorized by this Permit require the written approval of DTSC in accordance with the permit modification procedures set forth in 22 Cal. Code Regs., title 22, section 66270.40-66270.42.

Hazardous or mixed waste storage and/or treatment units are located within Building 85. The first floor contains mixed and radioactive only waste handling and storage units (rooms) including decontamination, staging, and Mixed Waste Storage and/or Treatment Units MW1 through MW7. This permit does not pertain to or authorize radioactive only waste storage or treatment. The U.S. Department of Energy has authority for these wastes. The second floor contains hazardous waste handling and storage units, including Hazardous Waste Storage and/or Treatment Units HW1 through 7. In addition, there is office space. Containment for accidental release of hazardous materials is provided in all handling and storage areas. The building is designed to prevent spilled or leaked liquids from passing through the floors. Floors are constructed of reinforced concrete covered with a chemical-resistant, epoxy resin-based coating, trowel-applied and able to withstand high-impact loads such as forklift traffic. Each storage unit and other areas where hazardous materials are handled have grate-covered trenches (draining to containment sumps) at all door openings and perimeter concrete curbs at the base of all interior and exterior walls. Curbs are coated with the epoxy material described above.

Hazardous Wastes Storage Units HW10, HW11, HW12, and HW13; Hazardous Waste Storage and Treatment Unit HW9; and Mixed Waste Storage Unit MW8: These storage units are located in Building 85 outdoor yard area. These units are commercially available, Factory Mutual System-approved, hazardous material storage units manufactured by Safety Storage, Incorporated. These units are constructed to meet the Zone 4 Earthquake loading criteria. These units contain built-in 7-inch deep secondary containment sumps. The sump walls are 2-hour fire rated. These units are fully enclosed and are not subject to precipitation. These units have a water sprinkler fire protection system.

A. IDENTIFICATION OF PERMITTED WASTE STREAMS:

A.1. Table 1 of this permit lists the waste streams generated onsite at LBNL that are allowed to be managed in permitted units. The Permittee shall not receive any offsite waste for treatment, storage, or disposal, unless otherwise approved by DTSC.

A.2. The Permittee shall only treat the hazardous wastes listed in Table 1 of this permit.

A.3. The Permittee is prohibited from storing any waste that is not identified in Table 1 of this Permit.

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B. IDENTIFICATION OF PERMITTED TREATMENT AND STORAGE UNITS:

B.1. HAZARDOUS WASTE UNIT HW1:

This unit is a room located within Building 85 on the second floor.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: The room is used to store wastes having the following classification, as defined in Uniform Fire Code (UFC): corrosive (acids), other health hazards (non-PCBs). "Other health hazards" are materials such as carcinogens, target organ toxins, irritants, and sensitizers as defined by the National Fire Protection Association (NFPA) in the UFC. Highly toxic corrosive acidic wastes are stored in a hazardous materials cabinet within the room. The room is ventilated. These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–12, 14–18, 20-23, 28–31, 34, 37, 43, 44, 54, and 56–58 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 880 gallons

Available Secondary Containment Capacity: 150 gallons

Dimensions: (L × W × H): 15 ft. ×13 ft. × 8 ft.

B.2. HAZARDOUS WASTE UNIT HW2:

This unit is a room located within Building 85 on the second floor. The room is ventilated.

Activity Type: Storage in containers (Please see Table 5 for details)

Activity Description: The room is used to store wastes having the classification: toxic and highly toxic, other health hazards (non-PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–12, 14, 15, 18, 20–23, 28–31, 41, 43, 44, 47–50, and 53–58 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 880 gallons

Available Secondary Containment Capacity: 150 gallons

Dimensions: (L × W × H) 15 ft. × 13 ft. × 8 ft.

B.3. HAZARDOUS WASTE UNIT HW3:

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This unit is a room located within Building 85 on the second floor. The room is ventilated. Fire extinguishers (foam) are provided.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: The room is used to store wastes having the following classification: other health hazards (non-PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–15, 18, 20–23, 28–31, 43, 44, and 53–58 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 1,320 gallons

Available Secondary Containment Capacity: 150 gallons

Dimensions: (L × W × H): 20 ft. × 13 ft. × 8 ft.

B.4. HAZARDOUS WASTE UNIT HW4:

This unit is a room located within Building 85 on the second floor. A smoke detector is installed in this room as required by the Uniform Fire Code.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: The room is used to store wastes having the following classification: highly toxic Class 1-3 oxidizers, organic peroxides, non-toxic Class 1-3 oxidizers, other health hazards (non-PCBs). Two hazardous materials cabinets are used, one for organic peroxides and one for Class 3 oxidizers. These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–12, 14–16, 18, 20–23, 28–31, 34, 36, 43–46, 52, 54, 56, and 57 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 440 gallons

Available Secondary Containment Capacity: 150 gallons

Dimensions: (L × W × H): 12 ft. × 10 ft. × 8 ft.

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B.5. HAZARDOUS WASTE UNIT HW5:

This unit is a room located within Building 85 on the second floor. The room is ventilated.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: The room is used to store wastes having classification: Corrosive (bases), other health hazards (non-PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–12, 14, 15, 18–23, 28–31, 38, 39, 43, 44, 50, 53, and 55–58 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 880 gallons

Available Secondary Containment Capacity: 150 gallons

Dimensions: (L × W × H): 12 ft. × 12 ft. × 8 ft.

B.6. HAZARDOUS WASTE UNIT HW6:

This unit is a room located within Building 85 on the second floor. The room is ventilated.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: The room is used to store wastes having classification: pyrophorics, other health hazards (non-PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–12, 14, 15, 18, 20–23, 28–31, 43, 44, 51, and 53–58 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 110 gallons

Available Secondary Containment Capacity: 150 gallons

Dimensions: (L × W × H): 15 ft. × 8 ft. × 8 ft.

B.7. HAZARDOUS WASTE UNIT HW7:

This unit is located on the second floor within Building 85. This unit is approximately 1,000 square feet in area. The internal walls are 2-hour fire-rated. The floor is constructed of reinforced concrete covered with an impermeable membrane. The material used for the membrane is a chemical-resistant, epoxy resin-based coated product trowel-applied at a quarter-inch minimum thickness. The room is ventilated and contains three fume hoods.

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Activity Type: Storage and Treatment in containers (Please see Table 5 for the details)

Activity Description: The room is used to store wastes having classification: flammable/combustible (ignitable) liquids, flammable solids, organic peroxides, other health hazards (non-PCBs), oxidizers, corrosive (acids), corrosive (bases), and highly toxic. This unit is also used to neutralize, filter, precipitate, separate phases, oxidize by UV/ozone and UV/peroxide, reduce class 1–3 oxidizers, air- or steam-strip VOCs from dilute aqueous solutions, absorb, adsorb, ion-exchange, do metallic replacement, plate metal onto an electrode, evaporate, distill organics from dilute aqueous solutions, rinse empty containers, mix multicomponent resins, desensitize, solidify, and consolidate small quantities of flammable/combustible (ignitable) liquids, flammable solids, organic peroxides, other health hazards (non-PCBs), oxidizers, corrosive acids, corrosive bases, and highly toxic hazardous wastes generated by LBNL before lab-packing. These treated hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 7, 9–12, 14–16, 18, 20–23, 28–50, and 52–58 (See Table 1 for the details).

Permitted Waste Stream Numbers for Treatment: 9, 17, 19, 22, 23, 30, 34–36, 38-40, 42–45, 47–50, and 53–58

Treatment Processes: Process Codes 1 through 20 (See Tables 3 and 4 for the details).

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Maximum Permitted Treatment Capacity: 96 gallons per day

Maximum Permitted Storage Capacity: 540 gallons

Available Secondary Containment Capacity: 150 gallons

Dimensions: (L × W × H): 40 ft. × 24.5 ft. × 8 ft.

B.8. HAZARDOUS WASTE UNIT HW9:

This unit is located in the front yard area of Building 85. This unit is approximately 58 square feet in area. The internal walls are 2-hour fire-rated. This is a single-wide sheet steel storage unit that is grounded and bolted to the concrete pad located directly beneath the unit. Floor grating is made of corrosion-resistant fiberglass. A 7 inch-deep secondary containment sump is provided. This unit is equipped with wet sprinklers, forced ventilation, and explosion vent panel. Portable fire extinguisher is located outside unit door. Both security latch and lock are provided.

Activity Type: Storage and treatment in containers (Please see Table 5 for the details)

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Activity Description: This unit is used to store wastes having classification: flammable/combustible (ignitable) liquid, flammable solids, other health hazards (non-PCBs). This unit is also used to consolidate flammable/combustible (ignitable) liquid hazardous wastes generated by LBNL. These treated hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–12, 14, 15, 18, 20–23, 28–31, 35, 40, 42–44, and 53–58 (See Table 1 for the details).

Permitted Waste Stream Numbers for Treatment: 34–36, 38–40, 43–45, 47, 48, and 53–58

Treatment Processes: Process Code 16 and 20 (See Tables 3 and 4 for the details).

Maximum Permitted Treatment Capacity: 440 gallons per day

Maximum Permitted Storage Capacity: 660 gallons

Available Secondary Containment Capacity: 250 gallons

Dimensions: (L × W × H): 7.25 ft. × 8 ft. × 7.33 ft.

B.9. HAZARDOUS WASTE UNIT HW10:

This unit is located in the front yard area of Building 85. This is a single-wide sheet steel storage unit that is grounded and bolted to the concrete pad located directly beneath the unit. Floor grating is made of corrosion-resistant fiberglass. A 7 inch-deep secondary containment sump is provided. This unit is equipped with wet sprinklers and forced ventilation. Both security latch and lock are provided.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: Used for the storage of wastes having classification: other health hazards (PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 24–27 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 660 gallons

Available Secondary Containment Capacity: 250 gallons

Dimensions: (L × W × H): 7.25 ft. × 8 ft. × 7.33 ft.

B.10. HAZARDOUS WASTE UNIT HW11:

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This unit is located in the front yard area of Building 85. This is a single-wide sheet steel storage unit that is grounded and bolted to the concrete pad located directly beneath the unit. Floor grating is made of corrosion-resistant fiberglass. A 7 inch-deep secondary containment sump is provided. This unit is equipped with wet sprinklers and forced ventilation. Both security latch and lock are provided.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: Used for the storage of wastes having classification: other health hazards (non-PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–15, 18, 20–23, 28–31, 43, 44, and 53–58 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 660 gallons

Available Secondary Containment Capacity: 250 gallons

Dimensions: (L × W × H): 7.25 ft. × 8 ft. × 7.33 ft.

B.11. HAZARDOUS WASTE UNIT HW12:

This unit is located in the front yard area of Building 85. This is a single-wide sheet steel storage unit that is grounded and bolted to the concrete pad located directly beneath the unit. Floor grating is made of corrosion-resistant fiberglass. A 7 inch-deep secondary containment sump is provided. This unit is equipped with wet sprinklers and forced ventilation. Both security latch and lock are provided.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: Used for the storage of wastes having classification: other health hazards (non-PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 5, 7, 10–15, 18, 20–23, 28-31, 43, 44, and 53–58 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 660 gallons

Available Secondary Containment Capacity: 250 gallons

Dimensions: (L × W × H): 7.25 ft. × 8 ft. × 7.33 ft.

B.12. HAZARDOUS WASTE HW13:

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This unit is located in the front yard area of Building 85. This is a single-wide sheet steel storage unit that is grounded and bolted to the concrete pad located directly beneath the unit. Floor grating is made of corrosion-resistant fiberglass. A 7 inch-deep secondary containment sump is provided. This unit is equipped with wet sprinklers and forced ventilation. Both security latch and lock are provided.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: Used for the storage of wastes having classification: highly toxic flammable/combustible (ignitable) liquids, other health hazards (non-PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1, 3–5, 7, 8, 10–12, 14, 15, 18, 20–23, 28-31, 43, 44, and 53–58 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 660 gallons

Available Secondary Containment Capacity: 250 gallons

Dimensions: (L × W × H) 7.25 ft. × 8 ft. × 7.33 ft.

B.13. HAZARDOUS WASTE UNIT HW14:

This unit is a storage shelter constructed of sheet metal walls and is located outside Building 85. The unit is designed to store hazardous waste in drums. Drums are stored at grade on coated steel floor grating or on coated drum storage racks. The racks are equipped with foam sprinkling system. An 8-inch deep subsurface secondary containment system is located beneath the steel floor grating. Containers are stored in five separate, anchored drum racks made of coated steel.

Activity Type: Storage of hazardous waste in one hundred twenty 55-gallon drums (Please see Table 5 for the details)

Activity Description: This unit is used to store wastes having classification: flammable/combustible (ignitable) liquids (excluding highly toxic flammable/combustible (ignitable) liquids), other health hazards (non-PCBs). These hazardous wastes are shipped offsite to an authorized facility that can treat or dispose of hazardous wastes.

Permitted Waste Stream Numbers for Storage: 1–15, 18, 20–23, 28–33, 35, 40, 41, 43, 44, 47, 49, and 53–58 (See Table 1 for the details).

Maximum Storage Capacity: 6,600 gallons

Available Secondary Containment Capacity: 3194 gallons

Dimensions: (L × W × H): 79 ft. × 7 ft. × 15 ft.

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B.14. MIXED WASTE UNIT MW1:

This unit is a room located within Building 85 on the first floor. The room is ventilated.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: This unit is used to store mixed wastes having classification: corrosive (bases) and other health hazards (non-PCBs). These mixed wastes are shipped offsite to an authorized facility that can treat or dispose of mixed wastes.

Permitted Waste Stream Numbers for Storage: 60–63, 66, 69, and 71–73 (See Table 1 for the details)

Maximum Permitted Storage Capacity: 880 gallons

Available Secondary Containment Capacity: 240 gallons

Dimensions: (L × W × H): 15 ft. × 15 ft. × 8 ft.

B.15. MIXED WASTE UNIT MW2:

This unit is a room located within Building 85 on the first floor. The room is ventilated. Fire protection (dry chemical) is provided.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: This unit is used to store mixed wastes having classification: highly toxic, toxic, and other health hazards (non-PCBs). These mixed wastes are shipped offsite to an authorized facility that can treat or dispose of mixed wastes.

Permitted Waste Stream Numbers for Storage: 60–63, and 69–72 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 110 gallons

Available Secondary Containment Capacity: 85 gallons

Dimensions: (L × W × H): 6 ft. × 6 ft. × 8 ft.

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B.16. MIXED WASTE UNIT MW3:

This unit is a room located within Building 85 on the first floor. The room is ventilated.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: This unit is used to store mixed wastes having classification: corrosive (acids) and other health hazards (non-PCBs). These mixed wastes are shipped offsite to an authorized facility that can treat or dispose of mixed wastes.

Permitted Waste Stream Numbers for Storage: 60–64, 69, and 71–73 (See Table 1 for the details)

Maximum Permitted Storage Capacity: 1,100 gallons

Available Secondary Containment Capacity: 240 gallons

Dimensions: (L × W × H): 20 ft. × 11 ft. × 8 ft.

B.17. MIXED WASTE UNIT MW4:

This unit is a room located within Building 85 on the first floor. The room is ventilated. Fire protection (foam) is provided.

Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: This unit is used to store mixed wastes having classification: flammable/combustible (ignitable) liquids and other health hazards (non-PCBs). These mixed wastes are shipped offsite to an authorized facility that can treat or dispose of mixed wastes.

Permitted Waste Stream Numbers for Storage: 59–63, 65, 68, 69, 71, and 72 (See Table 1 for the details)

Maximum Permitted Storage Capacity: 2,200 gallons

Available Secondary Containment Capacity: 240 gallons

Dimensions: (L × W × H): 20 ft. × 11 ft. × 8 ft.

B.18. MIXED WASTE UNIT MW5:

This unit is a room located within Building 85 on the first floor. The room is ventilated.

Activity Type: Storage in containers (Please see Table 5 for the details)

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Activity Description: This unit is used to store mixed wastes having classification: other health hazards (non-PCBs). These mixed wastes are shipped offsite to an authorized facility that can treat or dispose of mixed wastes.

Permitted Waste Stream Numbers for Storage: 60–63, 69, 71, and 72 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 2,200 gallons

Available Secondary Containment Capacity: 240 gallons

Dimensions: (L × W × H): 20 ft. × 11 ft. × 8 ft.

B.19. MIXED WASTE UNIT MW6:

This unit is located on the first floor within Building 85. This unit is approximately 1,000 square feet in area. The internal walls are 2-hour fire-rated. The floor is constructed of reinforced concrete covered with an impermeable membrane. The material used for the membrane is a chemical-resistant, epoxy resin-based coated product trowel-applied at a quarter-inch minimum thickness. The room is ventilated and contains two fume hoods.

Treatment is performed in two laboratory-style fume hoods or in glove boxes. The room is ventilated. Fire protection (foam) is provided.

Activity Type: Storage in containers (Please see Table 5 for the details) and treatment using neutralization, desensitization, consolidation, solidification and treatment processes 1 through 15.

Activity Description: This unit is used to store mixed wastes having classification: flammable/combustible (ignitable) liquids, flammable solids, highly toxic, corrosive (acids), corrosive (bases), other health hazards (non-PCBs), oxidizers, air-reactive and water-reactive.

This unit is also used to desensitize or consolidate small quantity mixed wastes for lab-packing, filter, solidify, precipitate, separate phases, oxidize by UV/ozone and UV/peroxide, reduce class 1–3 oxidizers, air- or steam-strip VOCs from dilute aqueous solutions, absorb, adsorb, ion-exchange, do metallic replacement, plate metal onto an electrode, evaporate, distill organics from dilute aqueous solutions, rinse empty containers, mix multi-component resins, and to neutralize corrosive acidic and corrosive basic mixed wastes generated by LBNL. These treated mixed wastes are shipped offsite to an authorized facility that can treat or dispose of mixed wastes.

Permitted Mixed Waste Stream Numbers for Storage: 59-74 (See Table 1 for the details).

Permitted Mixed Waste Stream Numbers for Treatment: 59, 62–69, 71–74
Treatment Processes: Process Codes 1 through 20 (See Tables 3 and 4 for details)

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Maximum Permitted Treatment Capacity: 72 gallons per day

Maximum Permitted Storage Capacity: 1,100 gallons

Available Secondary Containment Capacity: 240 gallons

Dimensions: (L × W × H): 40 ft. × 25 ft. × 8 ft.

B.20. MIXED WASTE UNIT MW7:

This unit is a room located on the first floor within Building 85. The walls are 1- or 2- hour fire-rated, while external walls are non-bearing and therefore non-rated. The floor is constructed of reinforced concrete with an impermeable membrane. The material used for the membrane is a chemical-resistant, epoxy resin-based coating product, trowel-applied at a quarter-inch minimum thickness. Room is ventilated and contains two drum solidification fume hoods and one slotted drum hood for consolidation.

Treatment is performed in 30 and 55-gallon drums in a specially designed fume hood configuration.

Activity Type: Treatment using consolidation and solidification

Activity Description: This unit is used to solidify/consolidate mixed wastes having classification: corrosive (acids), corrosive (bases), and other health hazards (non-PCBs). These mixed wastes are shipped offsite to an authorized facility that can treat or dispose of mixed wastes.

Permitted Waste Stream Numbers for Treatment: 59, 62-69, 71, and 72 (See Table 1 for the details).

Treatment Processes: Process Codes 16, 19 and 20 (See Tables 3 and 4 for the details).

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Maximum Permitted Treatment Capacity: 550 gallons per day

Dimensions: (L × W × H): 10 ft. × 5 ft. × 8 ft.

B.21. MIXED WASTE UNIT MW8:

This unit is located in the back yard area of Building 85. This is a single-wide sheet steel storage unit that is grounded and bolted to the concrete pad located directly beneath the unit. Floor grating is made of corrosion-resistant fiberglass. A 7 inch-deep secondary containment sump is provided. An explosion vent panel is provided with this unit. The unit is equipped with security latch, lock, fire protection (wet sprinkler) and forced ventilation.

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Activity Type: Storage in containers (Please see Table 5 for the details)

Activity Description: This unit is used for the storage of mixed wastes having classification: flammable solids and other health hazards (non-PCBs). These mixed wastes are shipped offsite to an authorized facility that can treat or dispose of mixed wastes.

Permitted Waste Stream Numbers for Storage: 60–63, 69, 71, 72, and 74 (See Table 1 for the details).

Maximum Permitted Storage Capacity: 660 gallons

Available Secondary Containment Capacity: 250 gallons

Dimensions: (L × W × H): 7.25 ft. × 8 ft. × 7.33 ft.

C. Air Emission Standards for Process Vents, Equipment Leaks, and Containers.

C.1 Process Vents: The Permittee is authorized to perform treatment in units HW7, HW9, MW6 and MW7 on one or more waste streams with organic concentrations of at least 10 parts per million by weight using processes identified in California Code of Regulations, title 22, section 66264.1030, subsection (b). Should the Permittee process any such waste streams using any such processes, the applicable requirements of California Code of Regulations, title 22, article 27 (commencing with section 66264.1030) shall apply. For more information, see the approved Operation Plan, Volume 3B, Section XIV.

C.2 Equipment Leaks: Some equipment in units HW7 and HW9 is used to manage hazardous waste with organic concentrations equal to or greater than 10 percent by weight. Pursuant to California Code of Regulations, title 22, section 66264.1050, subsection (f), this equipment shall be excluded from California Code of Regulations, title 22, sections 66264.1052 through 66264.1060 requirements provided that it contains or contacts such waste less than 30 hours per calendar year and is identified as required by California Code of Regulations, title 22, section 66264.1064, subsection (g)(6). For more information, see the approved Operation Plan, Volume 3B, Section XIV.B.

C.3 Containers: The majority of containers used to manage hazardous waste at the HWHF are exempt from California Code of Regulations, title 22, article 28.5 (commencing with section 66264.1080) requirements applicable to containers. For more information, see the approved Operation Plan, Volume 3B, Section XIV.C.

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V. SPECIAL CONDITIONS

A. STORAGE IN CONTAINERS:

A.1. The volume of each type of waste stored in each unit may vary; however, the maximum volume stored in each unit shall not exceed the capacity specified in Table 2 of this permit.

A.2. Used storage capacity shall be calculated based on the maximum capacity of each container stored in the unit.

A.3. Containers shall not be stacked more than nine (9) feet high.

B. DURATION OF STORAGE:

B.1 The Permittee may store mixed wastes covered by the Site Treatment Plan (STP) for periods in excess of one calendar year, provided that the STP compliance schedules support the need for such extended storage and the STP reporting requirements are met.

C. LABELLING REQUIREMENTS:

C.1. Upon receipt at the hazardous waste handling facility, the Permittee shall mark the date of acceptance on each container and maintain original generator labels on all containers of hazardous and mixed waste until such time as the waste is treated onsite or shipped from LBNL's hazardous waste handling facility to an off-site treatment or disposal facility. Generator labeling shall be maintained in accordance with 22 Cal. Code Regs., title 22, section 66262.34.

C.2. The Permittee shall mark each lab-packed container (hereinafter known as "lab-pack") with the earliest date of acceptance of any container to be placed into the lab-pack. This date shall be known as the accumulation date of the lab-pack.

C.3. Each lab-pack shall be labeled or marked clearly with the words, "Hazardous Waste." Additionally, each lab-pack shall be labeled with the content, quantities, and physical state of the wastes inside the lab-pack, and a statement or statements which call attention to the particular hazardous properties of the wastes (e.g., flammable, reactive, etc.). If there is insufficient space on the hazardous waste label for a full description of the content, quantities, and physical state of the lab-pack, a reference to these items on a packing slip is acceptable. The packing slip shall be attached to the lab-pack until it is shipped from LBNL's hazardous waste handling facility to an off-site treatment or disposal facility.

D. PROHIBITED WASTES:

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D.1. The Permittee shall not accept any hazardous or mixed wastes generated outside the boundaries of LBNL (as indicated in Figure 1 of this permit) with the exception of Donner and Melvin Calvin Laboratories which are located on adjacent University of California property and within LBNL's operational control.

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VI. CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS (SWMUs)

A. CORRECTIVE ACTION SUMMARY FOR EXISTING SWMUs:

A.1. RFA Findings/Results: In November 1991, DTSC completed a RCRA Facility Assessment (RFA) of the LBNL site. In September 1992, LBNL also prepared an independent RFA to supplement the findings of DTSC. A total of 174 units were identified during the RFA and subsequent investigations. Eight of these 174 units were identified as radiological units. The characterization and cleanup of the eight radiological units are being done under the oversight of the Department of Energy, which has the sole jurisdiction over radiological units. The remaining 166 units, which contained or were associated with the release of non-radioactive hazardous constituents, are addressed under the authority of the DTSC. Based upon the findings of the RFA, DTSC concluded that further investigation was necessary to better understand the contamination at the site and required LBNL to conduct a RCRA Facility Investigation (RFI).

A.2. RCRA Facility Investigation (RFI): LBNL submitted RFI workplans in three phases during November 1992, October 1994, and October 1995, respectively. Public comments on the RFI final report were accepted between November 15, 2000 and February 2001. DTSC determined that at 121 of the 166 units, there were either no chemical releases or the chemical concentration levels were low enough that further action was not needed. The remaining 45 units were determined to require further action under the Corrective Measures Study (CMS) phase of the RCRA Corrective Action Process.

A.3. Corrective Measures Study Workplan: On June 18, 2002 DTSC approved the CMS Workplan. This workplan included the protocols for preparation of human and ecological risk assessments.

A.4. Human Health Risk Assessment/Findings: Of the 45 units carried forward from the RFI 29 had soil contamination, 3 had surface water contamination, and 13 areas had groundwater contamination. All of these units were evaluated using the Human Health Risk Assessment procedures.

A.5. Ecological Risk Assessment/Findings: The ecological risk assessment was done and concluded that no hazards exist to plants or animals from exposure to chemicals in soil, groundwater, sediment or surface water at LBNL.

A.6. Corrective Measures Study (CMS): The information collected during the RFA, RFI, and CMS phases will be used to determine which technologies to use during the Corrective Measures Implementation phase.

A.7. On July 19, 2004 LBNL has submitted a CMS Report and it is under DTSC and coordinating agencies review. DTSC has evaluated the corrective measure alternatives presented in the CMS report. Based on the evaluation, DTSC has approved specific remediation measure(s) for implementation at the facility. If and when the Department determines that additional action is required, the Permittee shall

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be required to prepare a Corrective Measure Implementation Workplan (CMI) and perform corrective measures.

A.8. On November 2, 2005 LBNL submitted a Corrective Measures Implementation Workplan that included equipment design details for the approved remediation measures in accordance with time and schedule specified by DTSC. On March 28, 2006 DTSC has approved the Corrective Measures Implementation Plan.

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A.9. LBNL shall submit an Operation and Maintenance Workplan that includes the long-term monitoring and maintenance procedures for the approved remediation measures in accordance with time and schedule specified by DTSC.

A.10. LBNL shall submit a Construction Completion Report which documents the construction and installation of the approved remediation measures in accordance with time and schedule specified by DTSC.

B. NEWLY IDENTIFIED RELEASES:

B.1. In the event the Permittee identifies an immediate or potential threat to human health and/or the environment, discovers new releases of hazardous waste and/or hazardous constituents, or discovers new Solid Waste Management Units (SWMUs) not previously identified, the Permittee shall notify DTSC orally within 24 hours of discovery and notify DTSC in writing within 10 days of such discovery summarizing the findings including the immediacy and magnitude of potential threat to human health and/or the environment.

B.2. DTSC may require the Permittee to investigate, mitigate and/or take other applicable action to address any immediate or potential threats to human health and/or the environment and newly identified releases of hazardous waste and/or hazardous constituents. For newly identified SWMUs, the Permittee is required to conduct corrective action. Corrective action will be carried out either under a Corrective Action Consent Agreement or a Unilateral Corrective Action Order pursuant to California Health and Safety Code, section 25187.

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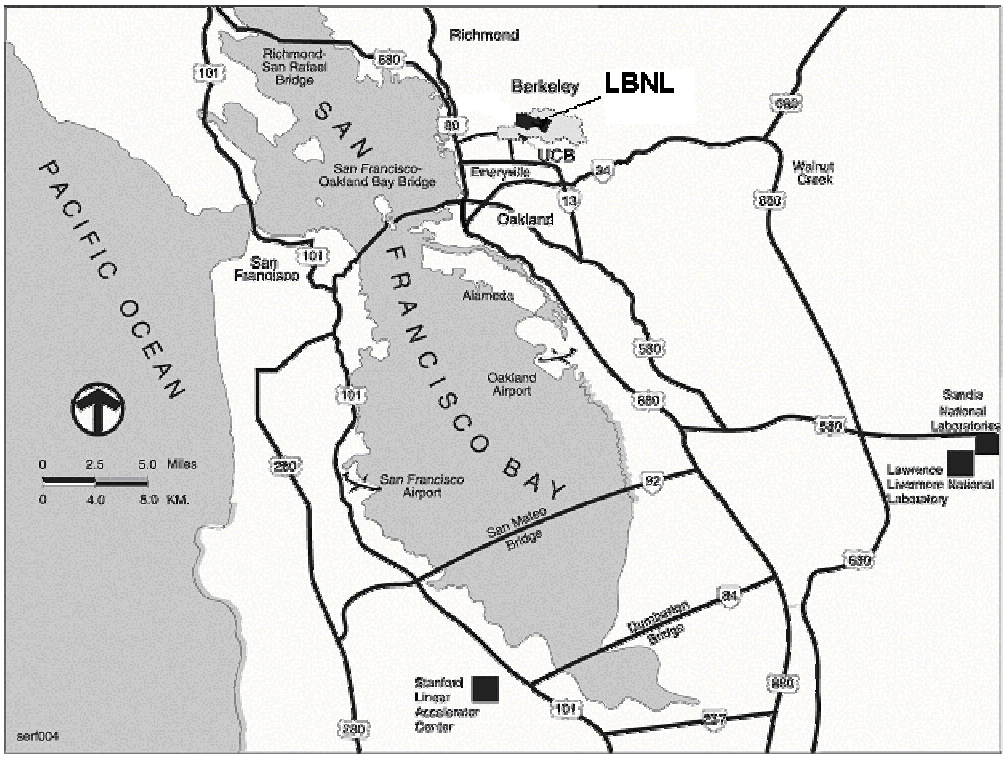

Figure 1. Regional Location Map

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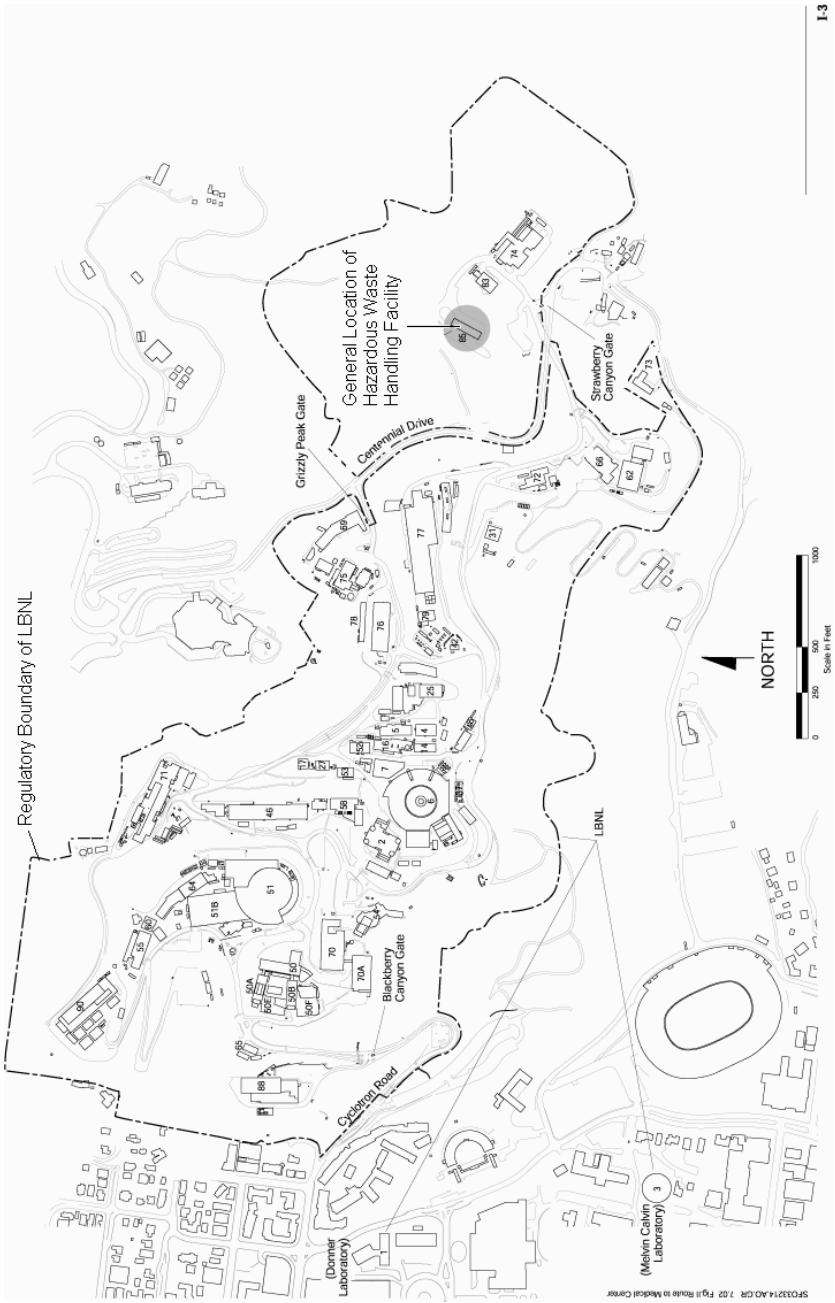

Figure 2. Facility Map

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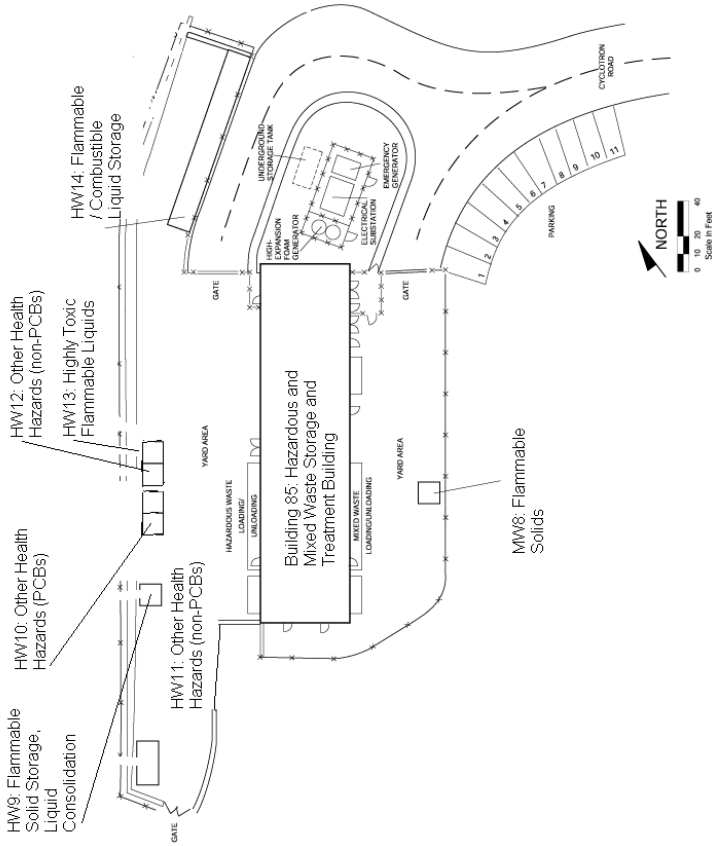

Figure 3. Hazardous Waste Handling Facility Layout

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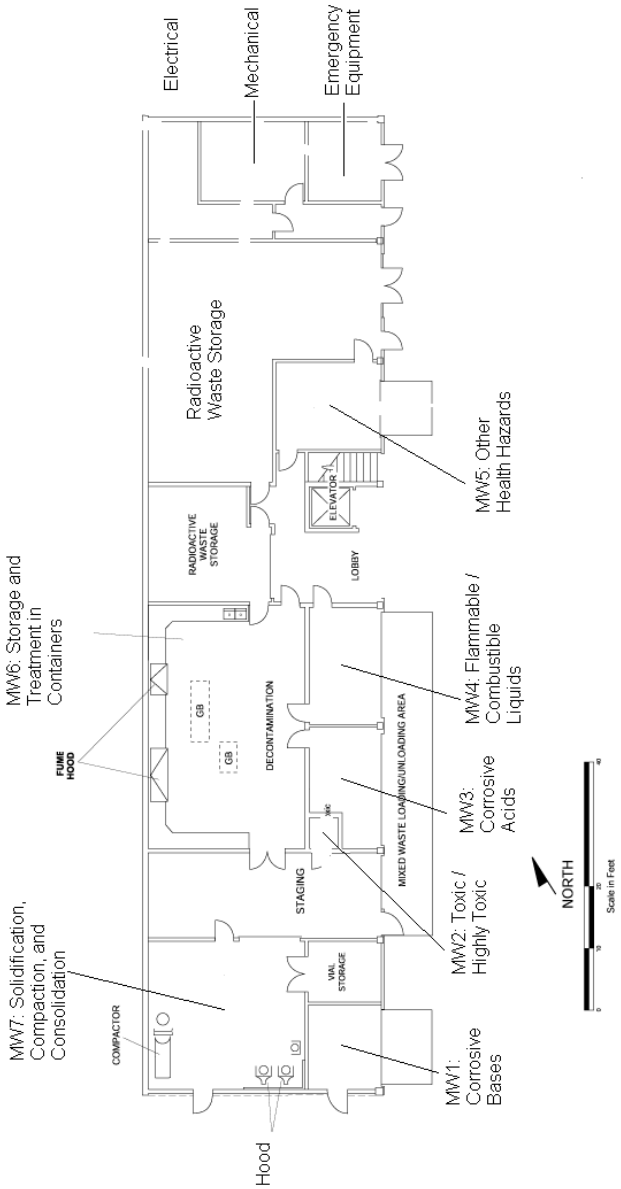

Figure 4. Building 85 First Floor Layout

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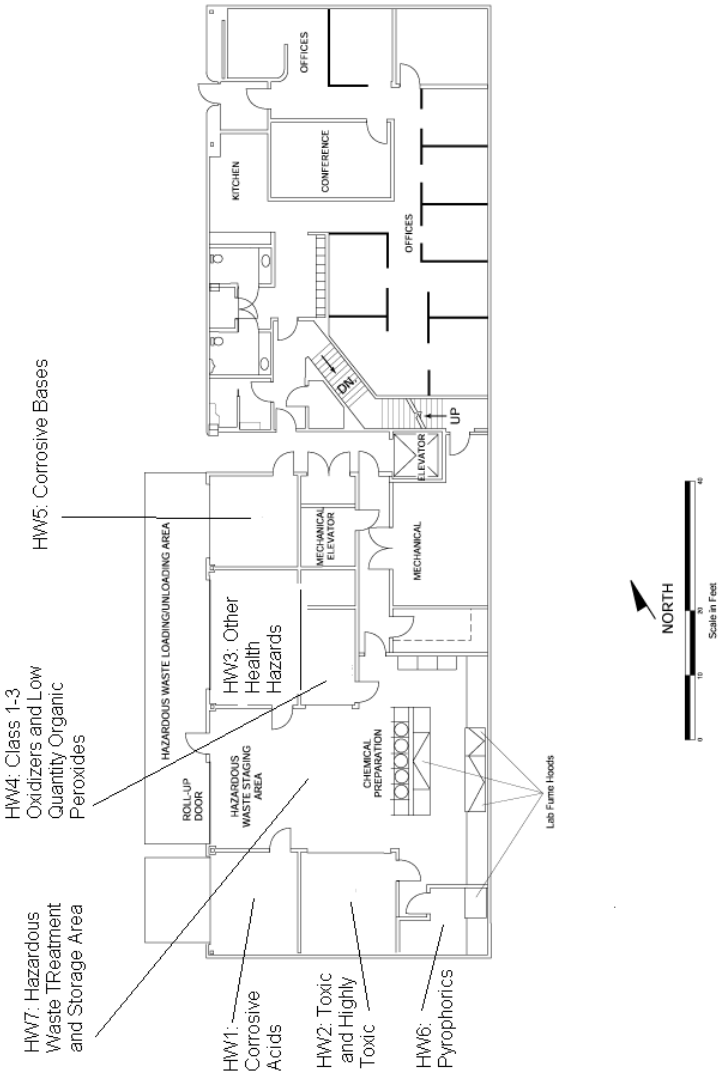

Figure 5. Building 85 Second Floor Layout

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Figure 6. Permitted Units 1, 2, 3, and 5: HW 1, 2, 3, 5

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Figure 7. Permitted Unit 4: HW 4

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Figure 8. Permitted Unit 6: HW 6

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Figure 9. Permitted Unit 7: HW 7

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Figure 10. Permitted Unit 9: HW 9

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Figure 11. Permitted Unit 10: HW 10

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Figure 12. Permitted Unit 11: HW 11

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Figure 13. Permitted Unit 12: HW 12

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Figure 14. Permitted Unit 13: HW 13

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Figure 15. Permitted Unit 14: HW 14

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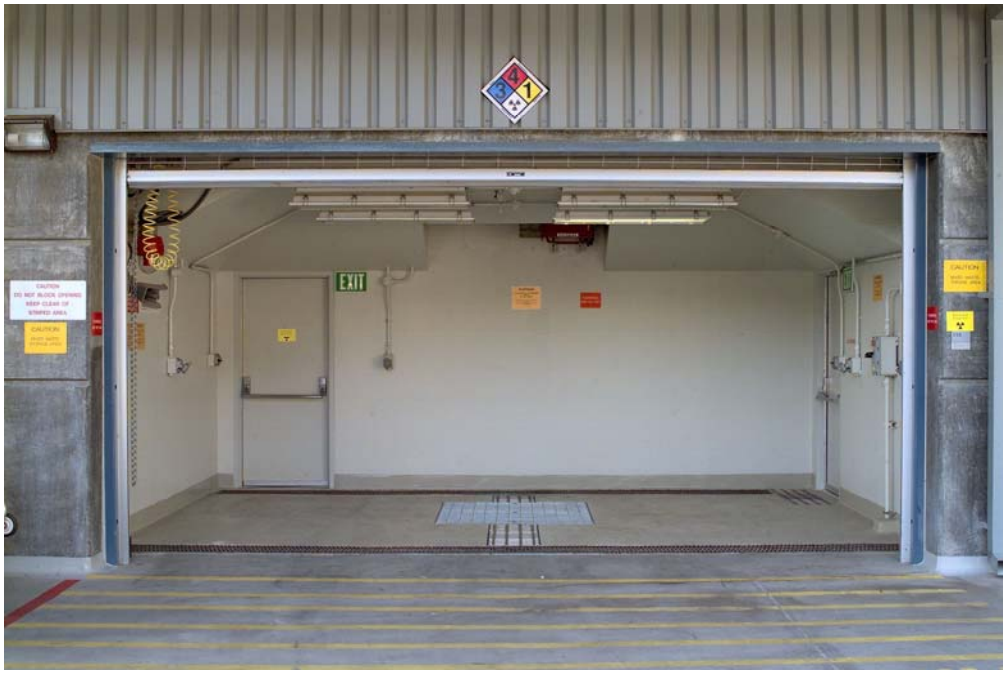

Figure 16. Permitted Mixed Waste Units 1, 3, 4, 5: MW 1, 3, 4, 5

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Figure 17. Permitted Mixed Waste Unit 2: MW 2

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Figure 18. Permitted Mixed Waste Unit 6: MW 6

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Figure 19. Permitted Mixed Waste Treatment Unit 7: MW 7

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Figure 20. Permitted Mixed Waste Unit 8: MW 8

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TABLE 1. DESCRIPTION OF PERMITTED WASTE STREAMS

Hazardous Waste Stream No.	Waste Name	EPA Waste Code(s)	California Waste Code(s)
1	Halogenated solvents	D004–D011, D019, D021, D022, D027–D029, D039, D040, F001, F002	211, 214, 331, 343, 741
2	Nonhalogenated solvents	D001, D004–D011 D018, D023–D026 D035, D036, D038, F003–F005	212, 213, 214, 331, 343
3	Mixture of halogenated and nonhalogenated solvents	D001, D004–D011, D018, D019, D022–D029, D035, D036, D038–D040, F001–F005	214, 331, 741
4	Petroleum compounds mixed with light petroleum distillates or solvents	D001, D004–D011, D018, D019, D022–D029, D035, D036, D038–D040, F001–F005	213, 223, 331
5	Mixture of petroleum compounds	NA	213, 221–223, 331, 341
6	Oil-based paint	D001, D004–D011, D035, D039, D040	214, 331, 343, 741
7	Latex paint	NA	291, 331, 343
8	Paint and solvent mixtures	D001, D004–D011, D035, D039, D040, F002, F003, F005	214, 331, 343, 741
9	Waste organic resins	D001	271, 272, 343
10	Solids contaminated with organics, with or without inorganics	D004–D011, D018, D022, D026, D028, D029, D035, D038–D040, F001–F003, F005	181, 223, 351, 352, 611, 751
11	Solids contaminated with inorganics	D004–D011	181, 611
12	Activated carbon contaminated with organics	D018, D019, D022, D028, D029, D038–D040, F002	351, 352, 751
13	Non-RCRA solids contaminated with organics and/or inorganics	NA	181, 223, 352, 611
14	Photographic developers	NA	141, 331, 541
15	Photographic fixer	D011	141, 331, 541
16	Lead acid batteries	D002, D008	792

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Hazardous Waste Stream No.	Waste Name	EPA Waste Code(s)	California Waste Code(s)
17	Waste acid solution from plating/stripping cleaning /research processes	D002, D004–D011, D018, D019, D022, D028, D029, D035, D038–D040, D043, F001, F002	791, 792
18	Electroless plating solutions	NA	132, 726
19	Waste alkaline solutions	D002, D004–D011	121, 122, 123, 141, 721–728
20	Metal hydroxide filter cake	D004–D011, F006	171, 491
21	Waste containing asbestos	NA	151
22	Empty containers	NA	512, 513
23	Empty containers last containing acutely or extremely hazardous waste	P003, P011, P012, P014, P018, P022, P028–P030, P043, P048, P068, P081, P087, P098, P105, P106, P115, P119, P120	513
24	CA-regulated-only PCB-contaminated liquids or articles containing liquids	NA	261
25	TSCA-regulated PCB-contaminated liquids or articles containing liquids	NA	731
26	PCB-contaminated solids/articles/equipment, CA-regulated	NA	261
27	PCB-contaminated solids/articles/equipment, TSCA-regulated	NA	731
28	Used oil filters	NA	223
29	Elemental mercury and mercury-containing articles	D009, U151	725
29	Elemental mercury and mercury-containing articles	D009, U151	725
30	Aqueous liquids with organics, with or without inorganics	D004–D011, D018, D019, D022, D026–D029, D035, D038–D040, F002, F003, F005	132–135, 223, 741
31	Waste coolants	NA	223, 331, 343
32	Flammable aerosol cans	D001, D004–D011, D035	331, 343, 551, 741

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Hazardous Waste Stream No.	Waste Name	EPA Waste Code(s)	California Waste Code(s)
33	Nonflammable aerosol cans	D039, D040, U210 U226, U228, U075	331, 343, 551, 741
34	Corrosive liquid (acidic)	D002, D004–D011, D018, D019, D022, D028, D029, D035, D038–D040, D043, F001–F005, U103, U123, U134	141, 721–728, 741, 791, 792, 551
35	Corrosive flammable liquids (acidic)	D001, D002, D004–D011, D018, D019, D022–D026, D028, D029, D035, D038–D040, F002–F005, U006, U008, U123 U194, U404	331, 551, 721–728, 741, 791, 792
36	Corrosive oxidizing liquids (acidic)	D001, D002, D004–D011, D018, D019, D022–D029, D035, D038–D040, F002–F005, U103	132, 135, 141, 551, 721–728, 741, 791, 792
37	Corrosive reactive liquids (acidic)	D002–D011, D018, D019, D022–D029, D035, D038–D040, F002–F005	141, 551, 721–728, 741, 791, 792
38	Corrosive liquids (basic)	D002, D004–D011, D018, D019, D022–D029, D035, D038–D040, F002–F005	121–123, 141, 551, 721–728, 741
39	Corrosive reactive liquids (basic)	D001–D011, D018, D019, D022–D029, D035, D038–D040, F002–F005	121–123, 141, 551, 721–728, 741
40	Flammable liquids	D001, D004–D011, D015–D019, D021–D036, D038, D040-D042, F001–F003, F005, P003, P005, P014, P022, P068, P095, P102, U001–U003, U008, U019, U025, U031, U037, U043, U045, U046, U056, U057, U077, U079, U098, U108, U112, U117, U122, U124, U133, U140, U154, U156, U159, U161 U162, U191, U194, U196, U213, U220, U239, U359, U404	135, 212–214, 331, 341, 343, 551, 721–728, 741
41	Flammable reactive liquids	D001, D003–D011, D018, D019, D021-D029, D035, D036, D038, D040, D043, F002, F003, F005, U133	212–214, 331, 341, 343, 551, 711, 721–728, 741
42	Flammable solids	D001, D003, P030, P048, U163, U165, U189	141, 331, 351, 352, 551, 751

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Hazardous Waste Stream No.	Waste Name	EPA Waste Code(s)	California Waste Code(s)
43	Hazardous waste liquids	D004–D011, D018, D019, D021–D030, D035, D036, D038–D040, F001–F005, U004, U028, U069, U081, U088, U107, U121, U122, U151	132–135, 141, 214, 221–223, 322, 331, 341–343, 551, 721–728, 741
43	Hazardous waste liquids	D004–D011, D018, D019, D021–D030, D035, D036, D038–D040, F001–F005, U004, U028, U069, U081, U088, U107, U121, U122, U151	132–135, 141, 214, 221–223, 322, 331, 341–343, 551, 721–728, 741
44	Hazardous waste solid	D004–D011, D018, D019, D021–D029, D035, D036, D038, D040, F001–F005, U018, U089, U094, U109, U147, U190, U202, U236	141, 181, 223, 331, 351, 352
45	Oxidizing liquids	D001, D004–D011, F003, F005	141, 331, 551, 721–728
46	Solid oxidizers	D001, D003–D011, U217	141, 181, 331,551
47	Toxic liquids	D004–D011, F002, P011, P012, P028, P041, P043, P048, P075, P087, P105, P115, P119, P120, U007, U010, U012, U021, U022, U036, U044, U052, U058, U068, U070, U080, U081, U103, U119, U133, U138, U144, U169, U170, U174, U197, U210, U211, U218, U219, U225–U228, U328	132–135, 141, 331, 341–343, 551, 721–728, 741
48	Toxic solids	D004–D011, P011, P012, P087, P105, P114, P115, P119, P120, P205, U007, U010, U015, U021, U022, U058, U063, U081, U082, U129, U136, U144, U147, U157, U170, U188, U197, U201, U204, U219	141, 181, 331, 351, 352, 551, 751
49	Reactive liquids	D003–D011, P029, P030, P098, P104, P106, P121	131, 141, 331, 341–343, 551, 711, 721–728
50	Reactive solids	D003–D011, P029, P030, P098, P104, P106, P121, U170, U246	141, 181, 331, 352, 551
51	Pyrophoric liquids	D001, D003, D004–D011	141, 331, 341–343, 551, 721–728, 741
52	Organic peroxide liquids	D001, D003, U096	331, 551
53	Non-RCRA liquid (DOT corrosive basic)	NA	123, 141, 331, 343, 551

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Hazardous Waste Stream No.	Waste Name	EPA Waste Code(s)	California Waste Code(s)
54	Non-RCRA corrosive solid (acidic)	NA	141, 181, 331, 352, 551
55	Non-RCRA corrosive solid (basic)	NA	141, 181, 331, 352, 551
56	Non-RCRA liquid (toxic)	NA	132–135, 141, 214, 221, 223, 272, 281, 331, 341–343, 551 726, 728, 741
57	Non-RCRA solid (toxic)	NA	141, 181, 223, 331, 351, 352, 513, 521, 551, 611, 751
58	Non-RCRA liquids (combustible)	NA	214, 221, 223, 331, 341–343, 551, 741
Mixed Waste			
59	Scintillation fluids with radionuclides	D001, D018, D022, D028	342, 343, 551, 741
60	Mercury and mercury-containing articles with radionuclides	D009	725
61	Lead contaminated with radionuclides	D008	181
62	Pump oil contaminated with radionuclides	D018, D019, D022, D025–D029, D035, D038–D040	221, 223, 741
63	Contaminated solids with radionuclides	D004–D011, D018, D019, D021–D029, D035, D038–D040, F001–F005	181, 223, 351, 352, 751
64	Corrosive liquids (acidic) with radionuclides	D001–D011 D018, D019, D022, D028, D029, D035, D038–D040, D043, F001–F005, U123	141, 331, 343, 551, 721–728, 741, 791, 792
65	Corrosive flammable liquids (acidic) with radionuclides	D001, D002, D004–D011, D018, D019, D022, D028, D029, D035, D038–D040, D043, F001–F005	141, 331, 551, 721–728, 741, 791, 792
66	Corrosive liquids (basic) with radionuclides	D002, D004–D011, D018, D019, D022, D028, D029, D035, D038–D040, D043, F001–F005	121–123, 141, 331, 551, 721–728, 741
67	Corrosive flammable liquids (basic) with radionuclides	D001, D002, D004–D011, D018, D019, D022, D028, D029, D035, D038–D040, D043, F001–F005	121–123, 141, 331, 551, 721–728, 741

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Hazardous Waste Stream No.	Waste Name	EPA Waste Code(s)	California Waste Code(s)
68	Flammable liquids with radionuclides	D001, D004–D011, D018, D019, D022, D028, D029, D035, D038–D040, F002, F003, F005, P022, U002, U003, U019, U056, U077, U112, U117, U154, U196, U213, U220, U239, U404	135, 212–214, 331, 341, 551, 741
69	Lab-packed chemicals with radionuclides	D001, D002, D004–D011, D018, D019, D021–D030, D032–D036, D038–D040, D043, F002–F005, P022, P030, P106, U002, U003, U007, U012, U018, U022, U044, U080, U112, U117, U138, U147, U190, U211, U213, U220	133–135, 141, 172, 181, 212–214, 331, 343, 352, 551, 721–728, 741, 751
70	Reactive chemical solutions with radionuclides	D001–D011, D018, D019, D021, D036, D038–D040, D043, F002, F003, F005, P030	122, 123, 131, 141, 711, 721–726, 741
71	Toxic liquids with radionuclides	D004–D011, D018, D019, D022, D026, D028, D035, D038–D040, F001–F005, U007, U044, U080, U167, U169, U170, U225, U012, U211	132–135, 141, 214, 223, 331, 341–343, 551, 721–728, 741
72	Toxic solids with radionuclides	D004–D011, D018, D019, D022, D028, D035, D038–D040, F001–F005, U170	141, 181, 223, 331, 351, 352, 551, 611, 751
73	Oxidizers with radionuclides	D001, D002, D004–D011	131, 141, 331, 551, 791, 792
74	Water-reactive and air-reactive chemicals with radionuclides	D001, D003	141, 331, 551

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TABLE 2: MAXIMUM STORAGE CAPACITY FOR PERMITTED UNITS

Unit Name	Maximum Permitted Storage Capacity	Allowable Waste Streams
HW1	880 gallons	1, 5, 7, 10–12, 14–18, 20-23, 28–31, 34, 37, 43, 44, 54, and 56–58
HW2	880 gallons	1, 5, 7, 10–12, 14, 15, 18, 20–23, 28–31, 41, 43, 44, 47–50, and 53–58
HW3	1,320 gallons	1, 5, 7, 10–15, 18, 20–23, 28–31, 43, 44, and 53–58
HW4	440 gallons	1, 5, 7, 10–12, 14-16, 18, 20–23, 28–31, 34, 36, 43-46, 52, 54, 56, and 57
HW5	880 gallons	1, 5, 7, 10–12, 14, 15, 18-23, 28–31, 38, 39, 43, 44, 50, 53, 55, and 56–58
HW6	110 gallons	1, 5, 7, 10–12, 14, 15, 18, 20–23, 28–31, 43, 44, 51, and 53–58
HW7	540 gallons	1, 7, 9–12, 14–23, 28–50, and 52–58
HW9	660 gallons	1, 5, 7, 10–12, 14, 15, 18, 20–23, 28–31, 34-36, 38-40, 42- 45, 47, 48, and 53–58
HW10	660 gallons	24-27
HW11	660 gallons	1, 5, 7, 10–15, 18, 20–23, 28–31, 43, 44, and 53–58
HW12	660 gallons	1, 5, 7, 10–15, 18, 20–23, 28–31, 43, 44, and 53–58
HW13	660 gallons	1, 3-5, 7, 8, 10–12, 14, 15, 18, 20–23, 28–31, 43, 44, and 53–58
HW14	6,600 gallons	1-15, 18, 20–23, 28–33, 35, 40, 41, 43, 44, 47, 49, and 53–58
MW1	880 gallons	60-63, 66, 69, and 71-73
MW2	110 gallons	60-63, and 69-72
MW3	1,100 gallons	60-64, 69, and 71-73
MW4	2,200 gallons	59-63, 65, 68, 69,71, and 72
MW5	2,200 gallons	60-63, 69, 71, and 72
MW6	1,100 gallons	59-74
MW8	660 gallons	60-63, 69, 71, 72, and 74

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TABLE 3: TREATMENT PROCESSES AND PERMITTED WASTE STREAMS

Unit	Processes Code[1]	Waste Streams	Treatment Capacity
HW7	1	34-36, 38, 40, 43, 45, and 47	96 gallons per day (gpd) using any combination of process codes 1 through 19
	2	34, 36, 38, 43, 56	
	3	30, 34-36, 38, 40, 43, 47, 53, and 56, 58	
	4	30, 43, 47	
	5	36, 45	
	6	30, 34, 38, 43, 56	
	7	30, 34, 43, and 47	
	8	30, 34, 43, and 47	
	9	30, 34, 43, and 47	
	10	34, 38, 43, 47	
	11	34, 38, 43, 47	
	12	30, 43, 47	
	13	30, 43, 47	
	14	22, 23, 40, 42, 47-50	
	15	9, 56, and 57	
	16	34-36, 38-40, 43-45, 47-48, and 53-58	
	17	17, 19,34, 36, and 38	
	18	42, 45, 49, and 50	
	19	34, 38, 43, 47, 56	
HW9	20	34–36, 38–40, 43–45, 47, 48, and 53–58	440 gpd
MW6	1	62, 64, 66, 68, 69, and 71	72 gpd using any combination of process codes 1 through 19
	2	64, 66, 69, and 71	
	3	68, 62, 64-69, and 71	
	4	64, 66, 69, and 71	
	5	64, 65, and 73	
	6	64, 66, 69, and 71	
	7	64, 66, 69, and 71	
	8	64, 66, 69, and 71	
	9	64, 66, 69, and 71	
	10	64, 66, 69, and 71	
	11	64, 66, 69, and 71	
	12	65, 67-69, and 71	
	13	65, 67-69, and 71	
	14	69, 71, and 72	
	15	69	
	16	59, 62-69, 71, and 72	
	17	64, 66, and 69	
	18	73, and 74	
	19	64, 66, 69, and 71	
MW7	16	59, 62-69, 71, and 72	550 gpd using any combination of process codes 16 and 19
	19	64, 66, 69, and 71	

1. See Table 4 for description of process codes.

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TABLE 4. DESCRIPTION OF PROCESS CODES USED IN TABLE 3.

Process Code	Description
1	Filtration
2	Precipitation
3	Phase Separation
4	UV Ozone/Peroxide Oxidation
5	Reduction of Oxidizers
6	Air or Steam Stripping of Volatile Organics from Dilute Aqueous Solutions
7	Absorption
8	Adsorption
9	Ion Exchange
10	Metallic Replacement
11	Plating Metals onto Cathode
12	Evaporation of Organics from Dilute Aqueous Solution
13	Distillation of Organics from Dilute Aqueous Solution
14	Rinsing of Containers
15	Mixing of Multi-component Resins
16	Consolidation in small and 55-gallon containers
17	Neutralization
18	Desensitization
19	Solidification
20	Consolidation of lab pack chemicals

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TABLE 5. EXAMPLES OF WASTE AND CONTAINERS USED IN HWHF[a]

Hazardous or Mixed Waste Type	Container Volume(s)	Container Type and Composition[b,c]
Asbestos	Between 1-7 cubic feet	Disposable PE double bags stored in cardboard containers/steel drums
Contaminated Debris	5-, 30-, and 55-gallon	Open-top steel or PE drums
Contaminated Soils	55-gallon drums or trucks	Open-top steel drums with PE liners (15- or 40-mil) or open-top trucks or containers with liners
Corrosive Liquids	5-, 20-, 30-, and 55-gallon	Polyethylene (PE) bung-type drums/carboys/glass bottles
Lab Packs	5-, 12.2-, and 30-gallon	Open-top PE drums
Lab Packs	5-, 30-, and 55-gallon	Open-top steel drum
Lab Packs	55-gallon	Fiberboard drums
Mercury	5- to 55-gallon	Open-top plastic-lined fiberboard, steel or PE drums with PE liners (15- or 40-mil), wooden boxes
Metal Sludges	5-, 20-, 30-, and 55-gallon	Open-top steel drums with PE liners (15- or 40-mil)
Motor Vehicle Batteries	5- to 55-gallon	Plastic-lined fiberboard drums or polyethylene drums
Paint Materials Latex-Based	1-, 5-, 30-, and 55-gallon	Steel drums/cans
Paint Materials Oil-Based	1-, 5-, 30-, and 55-gallon	Steel drums/cans
PCBs and PCB-contaminated Equipment	5-, 20-, 30-, and 55-gallon	Open-top steel drums with PE liners (15- or 40-mil)
Spent Activated Carbon	30-, and 55-gallon	Steel or PE drums
Waste Coolants	5-, 20-, 30-, and 55-gallons	Steel drums, bung-type/PE carboys/glass bottles
Waste Empty Containers	5- to 85- gallon	Steel, PE, glass, fiberboard
Waste Oils	5-, 20-, 30-, and 55-gallon	Steel drums, bung-type/PE carboys/glass bottles
Waste solvents	5-, 20-, 30-, and 55-gallon	Steel drums, bung-type/PE carboys/glass bottles

a The disposal company may supply the shipping containers

b Wastes to be lab-packed or treated may be stored in compatible sealed glass, plastic, fiberboard, or metal containers until packed or treated.

c Selection of containers for offsite shipment will conform to packaging requirements of 49 CFR 173 and 178