

ENVIRONMENT, SAFETY & HEALTH DIVISION

Chapter 17: [Hazardous Waste](#)

## Quick Start Summary

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### 1 Who needs to know about these requirements

The requirements of Hazardous Waste apply to workers (as *hazardous waste generators, custodians, and hazardous waste treatment operators*), supervisors, line management, ESH coordinators, and the hazardous waste and hazardous waste treatment program managers; and Fleet Services, Facilities and Operations, and Waste Management. They cover waste determination, collection, storage, labeling, tracking, disposal, and treatment of *hazardous, universal, and industrial waste*.

### 2 Why

All such waste must be managed and disposed of following stringent requirements. Failure to do so may result in harm to people, property, and the environment; regulatory action; and disruption to SLAC operations.

### 3 What do I need to know

Hazardous material becomes waste when it is not appropriate for further use. Waste is considered hazardous if it has hazardous characteristics or is classified as hazardous by federal or state regulations.

Hazardous waste must be collected, stored, labelled, and tracked following requirements that vary by type (hazardous, universal, and industrial). Waste is tracked to ensure it is removed within the *accumulation time* limit.

Waste Management provides containers to store hazardous waste and generally handles the disposal of hazardous waste to an off-site facility.

Collection and storage at the generation locations is the responsibility of workers (as *generators, custodians, and hazardous waste treatment operators*), researchers, supervisors, and line management.

### 4 When

These requirements take effect 26 May 2021.

### 5 Where do I find more information

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)

Or contact the [program manager](#).



## Chapter 17

# Hazardous Waste

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## 1 Purpose

The purpose of this program is to ensure the proper management of the following kinds of waste:

1. *Hazardous*. A used material with properties that could pose a danger to human health or the environment and can no longer be reused acceptably in any SLAC activity or operation.
2. *Universal*. A subset of hazardous waste generated through everyday activities, such as batteries, lamps, aerosol cans, and electronic equipment (e-waste, managed by Salvage), which poses a lower risk to people and the environment. Universal wastes can therefore be managed under less stringent handling rules if they are recycled through permitted recycling facilities.
3. *Industrial*. Waste that exhibits a level of contamination not considered hazardous, but is required by California to be managed more strictly than regular trash wastes

The program covers determination, collection, storage, labeling, tracking, disposal, and treatment of these wastes. It applies to workers (as *hazardous waste generators*, *custodians*, and hazardous waste treatment operators), supervisors, line management, ESH coordinators, and the hazardous waste and hazardous waste treatment program managers; and Fleet Services, Facilities and Operations, and Waste Management.

For requirements concerning *mixed waste* – that is, hazardous waste generated in radiologically controlled areas (RCAs) – see the SLAC [Radioactive Waste Manual](#).

For requirements concerning *waste minimization*, which helps protect the environment, fulfills regulations limiting disposal of hazardous waste, and reduces the costs associated with waste management, see [Chapter 22, “Waste Minimization and Pollution Prevention”](#).

Most hazardous wastes begin as hazardous materials. For requirements governing procurement, storage, handling, and use of chemicals and other hazardous materials, see [Chapter 40, “Chemical Lifecycle Management”](#); for hazard communication and mitigation related to chemicals, see [Chapter 53, “Chemical Safety”](#); for chemical use in laboratories, see [Chapter 58, “Laboratory Safety”](#); for transportation, on-site and offsite, see [Chapter 52, “Hazardous Materials and Waste Transportation”](#).

## 2 Roles and Responsibilities

Functional roles and general responsibilities for each under this program are listed below. More detailed responsibilities and when they apply are provided in the procedures and requirements.

The roles may be performed by one or more individuals and one individual may play more than one role, depending on the structure of the organizations involved. Responsibilities may be delegated.

## 2.1 Hazardous Waste Generator

- Handles and manages hazardous waste in compliance with requirements of this chapter
- Completes training and re-training appropriate to the level of work with hazardous waste
- Is able to determine properly if waste is hazardous (with assistance from Waste Management, as needed)
- Uses appropriate personal protective equipment (PPE) when handling hazardous waste
- Ensures that hazardous waste containers are removed by Waste Management once they are full or the *accumulation time* limit is reached, whichever comes first
- Manages and reports spills and spill cleanups (see [Chapter 16, “Spills”](#))
- Maintains hazardous waste containers and waste collection areas
- Ensures hazardous waste containers are kept closed when not in use
- Reports non-conformance to the requirements of this chapter to line management and confirms corrective action is taken
- Informs supervisor and Waste Management of waste-related issues and concerns

## 2.2 Custodian

- Is designated by line management and/or ESH coordinator
- Is responsible for the coordination and management of hazardous waste in their generic waste collection area, *waste accumulation area (WAA)*, or *satellite waste accumulation area (SWAA)*
- Conducts regular weekly inspections
- Ensures hazardous waste is properly identified and labeled
- Ensures hazardous waste containers are kept closed when not in use
- Manages and reports spills and spill cleanups (see [Chapter 16, “Spills”](#))
- Reports non-compliance to line management and confirms corrective action is taken
- Acts as the primary liaison with Waste Management

## 2.3 Hazardous Waste Treatment Operator

- Is designated by line management
- Operates and manages designated treatment unit according to [Hazardous Waste: Treatment Requirements](#), including carrying out required inspections and recordkeeping

## 2.4 Supervisor

- Ensures that hazardous waste is managed in accordance with this chapter and other relevant programs
- Includes hazardous waste management duties in job descriptions, job safety analyses (JSAs), and/or activity and training authorizations (ATAs)

- Ensures that each worker involved in hazardous waste management receives proper training
- Ensures that each worker involved in hazardous waste management performs his or her duties in compliance with proper hazardous waste handling and management procedures

## 2.5 Line Management

- Designates, with the program manager, generic waste collections areas, WAAs, and SWAAs and their custodians
- Designates, with the hazardous waste treatment program manager, hazardous waste treatment units and their operators

## 2.6 ESH Coordinator

- Assists workers, supervisors, and line management in implementing these the requirements of this program

## 2.7 Waste Management Group

- Ensures compliance with hazardous waste management regulations
- Provides trained personnel to guide generators in the proper management of hazardous waste
- Assists hazardous waste generators in properly characterizing waste
- Issues empty containers for the accumulation of hazardous waste
- Provides waste identification numbers and labels for hazardous waste containers and items
- Manages removal of waste from collection areas
- Services routine waste containers within the specified accumulation time limit
- Transports packaged waste from the generator's storage area (generic collection area, WAA or SWAA) to the *hazardous waste storage area (HWSA)*
- Prepares waste containers for shipment, including waste consolidation, weighing, labeling, marking and shipment documentation preparation

## 2.8 Fleet Services Group

For used lead-acid batteries (from automotive applications and other batteries equivalent in size and type)

- Serves as a central repository
- Arranges for proper shipment to an off-site recycling facility
- Maintains required records associated with shipments

For used vehicle oil filters and any other oil filters of similar or smaller size not contaminated with solvents or polychlorinated biphenyls (PCBs)

- Crushes them and stores them in the labeled drum issued by Waste Management for off-site shipment

## 2.9 Facilities and Operations Division

- Handles work area light bulb and lamp replacements

## 2.10 Hazardous Waste Program Manager

- Ensures compliance with federal, state and local hazardous waste management regulations
- Ensures there is an appropriate final destination for hazardous waste and manages off-site shipment of hazardous waste for reuse, recycling, and disposal
- Identifies acceptable subcontractors for off-site transport and disposal of hazardous and industrial wastes
- Coordinates hazardous and industrial waste management activities with other programs
- Designates, with line management, generic waste collection areas, WAAs, and SWAAs
- Manages the hazardous waste tracking system)
- Prepares regulatory reports related to hazardous waste management
- Maintains records as required

## 2.11 Hazardous Waste Treatment Program Manager

- Designates, with line management, hazardous waste treatment units and their operators
- Coordinates authorization for on-site hazardous waste treatment under California Tiered Permit Program between SLAC departments and regulatory agencies
- Works with SLAC departments to determine the feasibility of proposed treatment units as well as process adjustments
- Prepares regulatory reports related to hazardous waste treatment

# 3 Procedures, Processes, and Requirements

These documents describe the detailed requirements for this program and how to implement them:

- [Hazardous Waste: Management Requirements](#) (SLAC-I-750-0A08S-001). Describes general requirements for determination, collection, storage, labeling, and tracking of hazardous wastes
- [Hazardous Waste: Universal Waste Requirements](#) (SLAC-I-750-0A08S-002). Describes requirements for handling and disposal of universal waste
- [Hazardous Waste: Industrial Waste Requirements](#) (SLAC-I-750-0A08S-003). Describes requirements for characterization, containment, handling, labeling, tracking, and disposal of industrial waste
- [Hazardous Waste: Used Automotive Battery Requirements](#) (SLAC-I-750-0A08S-007). Describes requirements for handling, labeling, storage, and transport of used automotive batteries
- [Hazardous Waste: Office Waste Requirements](#) (SLAC-I-750-0A08S-008). Describes requirements for handling and disposal of hazardous office waste

- [Hazardous Waste: Treatment Requirements](#) (SLAC-I-750-0A08S-006). Describes requirements for on-site treatment of hazardous waste under the California Tiered Permit Program

These documents provide useful guidance; their use is not mandatory:

- [Hazardous Waste: Waste Determination and Characterization Guidelines](#) (SLAC-I-750-0A08T-001). Provides guidance on identifying and characterizing hazardous waste

These are the forms and tools for this program:

- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001). Form used to request from Waste Management delivery and pickup of waste containers
- [Hazardous Waste: Container and Collection Area Weekly Inspection Checklist](#) (SLAC-I-750-0A08J-005). Checklist used to guide weekly inspections of containers and collection areas; not required to complete or keep

These are other program documents and resources:

- [Hazardous Waste Management](#). Group web site

## 4 Training

### 4.1 Hazardous Waste Generator

Workers generating or working with hazardous wastes must take the following courses:

- ESH Course 105, Hazardous Waste Management ([ESH Course 105](#))
- ESH Course 105R, Haz Waste Management Refresher ([ESH Course 105R](#)) (every 12 months)
- ESH Course 255, Personal Protective Equipment (PPE) ([ESH Course 255](#))

### 4.2 Custodian

The training for custodians is the same as for workers.

### 4.3 Hazardous Waste Treatment Operator

The training for hazardous waste treatment operators is the same as for workers, with the addition of this course:

- ESH Course 197, Hazardous Waste Treatment Training ([ESH Course 197](#)) (every 12 months)

### 4.4 Waste Management Personnel

In addition to the above requirements, workers involved in the monitoring or cleanup of spills and packaging of hazardous wastes are required to take the following course:

- ESH Course 285, Haz Waste Ops (HAZWOPR) 8 Hour ([ESH Course 285](#)) (every 12 months)

- ESH Course 299, Haz Waste Ops (HAZWOPR) 24 or 40 Hour ([ESH Course 299](#))
- All applicable federal and state hazardous waste management courses

For related training requirements see [Chapter 52. “Hazardous Materials and Waste Transportation”](#).

## 5 Definitions

*accumulation time.* The total time from when the first drop of waste begins accumulating in a storage container or a hazardous material/item is deemed a waste until the waste is transported off-site to the proper permitted *treatment, storage, and disposal* facility (TSDF)

*corrosivity.* Ability of a hazardous waste to react dangerously with another waste, dissolve metal or other materials, or burn the skin. Examples of corrosive waste include waste from rust remover, acid, or alkaline cleaning fluid, and battery acid.

*custodian.* Person responsible for a waste collection area and/or container

*hazardous material.* Any chemical or material that, due to its physical or chemical properties, poses a risk to the health or safety of humans, environment, or the physical plant

*hazardous waste collection area.* Designated area used for the storage of hazardous waste. There are four categories of these:

1. *hazardous waste storage area (HWSA).* The centralized hazardous waste storage area, managed and operated by Waste Management, and used for the storage of hazardous wastes collected from *waste accumulation areas (WAAs)*, *generic waste collection areas*, and *satellite waste accumulation areas (SWAAs)*
2. *waste accumulation area (WAA).* Area for the storage of hazardous wastes of different types and/or from different generators before transferring to the central HWSA
3. *generic waste collection area.* Area or location for the hazardous waste collection needs of a specific generator
4. *satellite waste accumulation area (SWAA).* Type of generic waste collection area, under the direct control of the waste generator, that allows the storage of certain hazardous wastes meeting certain criteria for up to nine months at the point of generation

*hazardous waste generator.* Individual, group, or department that generates hazardous waste from projects, processes, operations, or activities

*ignitability.* The ability of a hazardous waste to cause fires. Examples of ignitable waste include waste from paint, gasoline, diesel fuel, some degreasers, and some other solvents.

*reactivity.* The ability of a hazardous waste to become unstable or undergo a rapid or violent chemical reaction with water or other materials. Examples of reactive waste include waste from cyanide plating, bleach, and other oxidizers.

*storage.* The collection of a hazardous waste in a container or tank

*toxicity.* The presence of toxic constituents above established regulatory levels. Examples of toxic constituents include heavy metals, chlorinated solvents, or certain aromatic compounds.

*treatment.* Any operation that changes or is designed to change the physical, chemical or biological character of a hazardous waste to remove or reduce its hazardous characteristics

*treatment, storage, and disposal facility (TSDF).* A facility that treats, stores, and disposes of hazardous waste

*waste.* Any material no longer appropriate for further use. Waste categories include

1. *Hazardous.* A used material with properties that could pose a danger to human health or the environment and can no longer be reused acceptably in any SLAC activity or operation.
2. *Universal.* A subset of hazardous waste generated through everyday activities, such as batteries, lamps, aerosol cans, and electronic equipment (e-waste, managed by Salvage), which poses a lower risk to people and the environment. Universal wastes can therefore be managed under less stringent handling rules if they are recycled through permitted recycling facilities.
3. *Industrial.* Waste that exhibits a level of contamination not considered hazardous, but is required by California to be managed more strictly than regular trash

## 6 References

### 6.1 External Requirements

The following are the external requirements that apply to this program:

- Title 42, *United States Code*, “The Public Health and Welfare”, Chapter 82, “Solid Waste Disposal”, Subchapter 3, “Hazardous Waste Management”
  - Section 6921, “Identification and Listing of Hazardous Waste” ([42 USC 6921](#))
  - Section 6922, “Standards Applicable to Generators of Hazardous Waste” ([42 USC 6922](#))
  - Section 6923, “Standards Applicable to Transporters of Hazardous Waste” ([42 USC 6923](#))
- Title 40, *Code of Federal Regulations*, “Protection of the Environment”, Chapter 1, “Environmental Protection Agency”, Subchapter E, “Pesticide Programs”, Part 170, “Worker Protection Standard” ([40 CFR 170](#))
- Title 40, *Code of Federal Regulations*, “Protection of the Environment”, Chapter 1, “Environmental Protection Agency”, Subchapter I, “Solid Wastes (Continued)”
  - Part 260, “Hazardous Waste Management System: General” ([40 CFR 260](#))
  - Part 261, “Identification and Listing of Hazardous Waste” ([40 CFR 261](#))
  - Part 262, “Standards Applicable to Generators of Hazardous Waste” ([40 CFR 262](#))
  - Part 263, “Standards Applicable to Transporters of Hazardous Waste” ([40 CFR 263](#))
  - Part 265, “Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities” ([40 CFR 265](#)); only those sections required in 40 CFR 262 for hazardous waste generators

- Part 268, “Land Disposal Restrictions” ([40 CFR 268](#))
- Title 40, Code of Federal Regulations, “Protection of the Environment”, Chapter 1, “Environmental Protection Agency”, Subchapter R, “Toxic Substances Control Act”, Part 761, “Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions” ([40 CFR 761](#))
- Title 49, *Code of Federal Regulations*, “Transportation”, Subtitle B, “Other Regulations Relating to Transportation”, Chapter 1, “Pipeline and Hazardous Materials Safety Administration, Department of Transportation” ([49 CFR 100–185](#))
- California Health and Safety Code, Division 20, “Miscellaneous Health and Safety Provisions”, Chapter 6.5, “Hazardous Waste Control” ([HSC 25100–25250.28](#))
- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 16, “Control of Hazardous Substances”, Article 109, “Hazardous Substances and Processes” ([8 CCR 5160–5199](#))
- Title 22, *California Code of Regulations*, “Social Security”, Division 4.5, “Environmental Health Standards for the Management of Hazardous Waste”
  - Chapter 11, “Identification and Listing of Hazardous Waste” ([22 CCR 66261.1–66261.126](#))
  - Chapter 12, “Standards Applicable to Generators of Hazardous Waste” ([22 CCR 66262.10–66262.89](#))
- Title 22, *California Code of Regulations*, “Social Security”, Division 4.5, “Environmental Health Standards for the Management of Hazardous Waste”
  - Chapter 13, “Standards Applicable to Transporters of Hazardous Waste” ([22 CCR 66263.10–66263.50](#))
  - Chapter 18, “Land Disposal Restrictions” ([22 CCR 66268.1–66268.124](#))
  - Chapter 45, “Requirements for Units and Facilities Deemed to Have a Permit by Rule”, Article 1, “Permit by Rule”, Sections 67450.1 through 67450.3 ([22 CCR 67450.1-3](#))

## 6.2 Related Documents

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 16, “Spills”](#)
- [Chapter 22, “Waste Minimization and Pollution Prevention”](#)
- [Chapter 40, “Chemical Lifecycle Management”](#)
- [Chapter 52, “Hazardous Materials and Waste Transportation”](#)
- [Chapter 53, “Chemical Safety”](#)
- [Chapter 58, “Laboratory Safety”](#)

Other SLAC Documents

- [Radioactive Waste Manual](#) (SLAC-I-760-2A08Z-001)

Other Documents

- Lawrence Berkeley National Laboratory. Environment, Safety, and Health Manual (PUB-3000), [Chapter 20, “Waste Management”](#)
- Lawrence Berkeley National Laboratory. [Guidelines for Generators to Meet HWHF Acceptance Requirements for Hazardous, Radioactive, and Mixed Wastes at Berkeley Lab](#) (PUB-3092)



Chapter 17: [Hazardous Waste](#)

# Waste Determination and Characterization Guidelines

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URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/hazwasteGuideDetermine.pdf>

## 1 Purpose

The purpose of these guidelines is to ensure potentially hazardous waste is properly identified. They cover identifying and characterizing hazardous waste. They apply to workers (as *hazardous waste generators*) and supervisors.

## 2 Guidelines

All waste that is classified as *hazardous* – because of its properties, regulatory status, or both – must be managed and disposed of following stringent requirements. The following guidelines describe how to determine if waste is hazardous and how to characterize it.

*Note*      *Characterizing hazardous waste can be a complex process. For help identifying and categorizing potentially hazardous waste, contact Waste Management.*

### 2.1 Determining If the Material Is Waste

Hazardous material becomes waste when it is not appropriate for further use.

### 2.2 Determining If Waste Is Hazardous

Waste is considered hazardous if it has hazardous characteristics or is classified as hazardous by federal or state regulations.

#### 2.2.1 Hazardous Waste Properties

A waste is considered hazardous if it has one or more of the following properties:

- **Corrosivity.** The ability to react dangerously with other waste, dissolve metal or other material, or burn the skin. Examples are waste from rust remover, acid or alkaline cleaning fluid, and battery acid.
- **Ignitability.** The ability to cause fires during transport, storage, or disposal. Examples are waste from paint, gasoline, diesel fuel, some degreasers, and some other solvents.
- **Reactivity.** The ability to become unstable or undergo a rapid or violent chemical reaction with water or other materials. Examples are waste from cyanide plating, bleach, and other oxidizers.

- **Toxicity.** The presence of toxic constituents above established regulatory levels. Examples are waste containing dissolved heavy metals, insecticides, and solvents.

To determine a material’s properties, check the *safety data sheet* ([SDS](#)), which includes a range of information such as hazardous ingredients and properties as well as health and safety information.

## 2.3 Determining the Hazardous Waste Category

Once a material has been identified as hazardous waste it will fall into one of the three categories below. Each category has specific accumulation time limits and management requirements.

1. *Hazardous.* A used material with properties that could pose a danger to human health or the environment and can no longer be reused acceptably in any SLAC activity or operation. (See [Hazardous Waste: Management Requirements](#).)
2. *Universal.* A subset of hazardous waste generated through everyday activities, such as batteries, lamps, aerosol cans, and electronic equipment (e-waste, managed by Salvage), which poses a lower risk to people and the environment. Universal wastes can therefore be managed under less stringent handling rules if they are recycled through permitted recycling facilities. (See [Hazardous Waste: Universal Waste Requirements](#).)
3. *Industrial.* Waste that exhibits a level of contamination not considered hazardous, but is required by California to be managed more strictly than Class III wastes. (See [Hazardous Waste: Industrial Waste Requirements](#).)

Table 1 lists examples of hazardous wastes at SLAC.

**Table 1** Typical Hazardous Wastes Generated at SLAC

Acid debris: rags, swipes, gloves, etc	Oil, oil/water, oil, and Freon
Acids, mixed	Oil-filled equipment, with and without PCBs
Aerosol cans	Oily and solvent solid debris: rags, swipes, gloves, etc
Alcohols: ethyl alcohol, methyl alcohol, isopropanol, etc	Polychlorinated biphenyl (PCB) light ballast
Alkali solutions, mixed	PCB-contaminated oil
Asbestos	PCB capacitors, small
Batteries (for all types of equipment, except lead acid)	Resins: EDM and epoxy
Beryllium-contaminated debris	Sludge with metals (non-RCRA)/trace PCBs
Cutting fluid/water	Soil contaminated with halogenated organic compounds
Cyanide filters/debris	Soil with lead/PCBs
Empty containers	Solvents: halogenated and non-halogenated
Latex paint	Spent carbon: solid
Mercury-contaminated equipment/debris	Wood, treated
Laboratory chemicals	Nanomaterials

## 3 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)
  - [Hazardous Waste: Management Requirements](#) (SLAC-I-750-0A08S-001)
  - [Hazardous Waste: Universal Waste Requirements](#) (SLAC-I-750-0A08S-002)
  - [Hazardous Waste: Industrial Waste Requirements](#) (SLAC-I-750-0A08S-003)
  - [Hazardous Waste: Office Waste Requirements](#) (SLAC-I-750-0A08S-008)
  - [Hazardous Waste Management](#)
- [Chapter 16, “Spills”](#)
- [Chapter 40, “Chemical Lifecycle Management”](#)
- [Chapter 52, “Hazardous Materials and Waste Transportation”](#)
- [Chapter 53, “Chemical Safety”](#)
- [Chapter 58, “Laboratory Safety”](#)

Other SLAC Documents

- [Chemical Management Services \(CMS\)](#)

Other Documents

- Lawrence Berkeley National Laboratory. Environment, Safety, and Health Manual (PUB-3000), [Chapter 20, “Waste Management”](#)
- Lawrence Berkeley National Laboratory. [Guidelines for Generators to Meet HWHF Acceptance Requirements for Hazardous, Radioactive, and Mixed Wastes at Berkeley Lab](#) (PUB-3092)



## Chapter 17: [Hazardous Waste](#)

# Management Requirements

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## 1 Purpose

The purpose of these requirements is to ensure the proper management of hazardous waste. They cover determination, collection, storage, labeling, and tracking. They apply to workers (as *hazardous waste generators* and *custodians*), supervisors, line management, and Waste Management.

## 2 Requirements

Requirements for the management of waste are based on type (*hazardous, industrial, or universal*) and amount. Under the federal Resource Conservation and Recovery Act (RCRA), SLAC is an authorized *large quantity hazardous waste generator* and is allowed the corresponding quantities and time limits for on-site storage of these wastes. Wastes at SLAC are collected and stored according to requirements and then transported off-site for treatment and disposal.

*Note* SLAC is not a treatment, storage, and disposal facility (TSDF), since such facilities require extensive permitting. Although not a TSDF, SLAC is authorized by the state of California to perform limited hazardous waste treatment under the California Tiered Permit Program, which allows treatment of permit-specified hazardous waste streams. (See [Hazardous Waste: Treatment Requirements](#).)

### 2.1 Determination

*Hazardous waste generators* must monitor their use of materials and determine when the material may be hazardous and has, in fact, become a waste and cannot be reused (see [Hazardous Waste: Waste Determination and Characterization Guidelines](#)). Once a material has been determined to be both hazardous and a waste, it must be collected and stored according to specific requirements.

### 2.2 Accumulation Time Limits

*Accumulation time* is the total time from the *accumulation start date*, when the first drop of waste begins accumulating in a storage container or the date a material/item is deemed no longer needed, or useful, until the waste is transported off-site. Total allowable accumulation time is determined by law and depends primarily on waste type:

- *Hazardous waste.* As a large-quantity generator, SLAC may store hazardous waste on-site for no more than 90 days. (If a hazardous waste meets certain criteria it may be stored on-site for one year or until

the container becomes full, whichever occurs first. See Satellite Waste Accumulation Areas [SWAAs] below.)

- *Universal waste.* The maximum accumulation time is one year.
- *Industrial waste.* This type of waste is handled as expeditiously as practicable.

Waste, as much as 55 gallons of hazardous waste, or one quart of acutely or extremely hazardous waste, may be stored in *satellite waste accumulation areas (SWAAs)* for one year if the following criteria is met.

- The waste is accumulated in containers at the initial generation point and is under the control of the operator of the process generating it.
- The initial date of accumulation is clearly marked and visible on each container. Waste management provides SWAA labels that meet this requirement.

Please contact Waste Management for more information and/or assistance with setting up an SWAA (see Section 2.7.4).

Both the generator and Waste Management must coordinate to ensure that the hazardous waste is removed within the time limit. To ensure the legal time limits are met, in general, hazardous waste with a 90-day accumulation period is automatically removed by Waste Management within 45 days of the accumulation start date. Universal and SWAA waste containers are removed within nine months of the accumulation start date.

- If the container is full before the 45-day or nine-month accumulation period ends, call Waste Management to arrange a pickup and container replacement.
- If the container is only partially full when the automatic collection occurs, Waste Management will collect the waste. For routine waste the containers will be replaced and/or relabeled automatically. For non-routine waste the container will be removed and not replaced, unless a requested.

For hazardous and universal waste that is not being stored in a Waste Management-provided and labeled container, it is the responsibility of the generator to label the container (see Section 2.4.2). The same accumulation time limits apply. Contact Waste Management within the 45-day accumulation time for a pickup.

## 2.3 Submitting Requests for Containers and Waste Pickups

To request a container delivery and/or waste pickup the generator must contact Waste Management using one of these methods:

1. Submitting a [Hazardous Waste Pick-Up and Empty Container Request Form](#).
2. Sending an e-mail to [waste@slac.stanford.edu](mailto:waste@slac.stanford.edu).

## 2.4 Hazardous Waste Containers and Labeling

### 2.4.1 Pre-labeled Containers from Waste Management

To request a suitable hazardous waste container, submit a request to Waste Management (see Section 2.3). Based on the information provided, Waste Management will deliver labeled hazardous waste container(s) compatible with the type of waste to be generated. The label supplied varies:

- If the waste has been determined to be hazardous with an accumulation time of 90 days, the label will be yellow.
- If the waste has been determined to be hazardous/SWAA, the label will be white with a red border.
- If the waste has been determined to be universal, the label will be white with a blue border.
- If the waste has been determined to be industrial (Class II), and/or not yet determined to be hazardous (waiting analysis), the label will be white with no border.

Each label features an ID number, which allows the waste to be tracked. The label also includes information required by federal and/or state regulations, such as the accumulation start date.

### 2.4.2 Provisional Labeling of Containers Not Originating from Waste Management

If hazardous waste begins accumulating without a properly labeled container provided by Waste Management (for instance, laboratory chemicals, if the hazardous waste is generated in the original chemical container, or if the waste does not fit into a hazardous waste collection drum):

1. Submit a request within one working day of starting to generate the waste to obtain a proper label and container from Waste Management.
2. Immediately label the container or item. Hazardous waste regulations are specific about the information that must be clearly legible on each hazardous waste container:
  - The words HAZARDOUS WASTE
  - Accumulation start date. For items accumulated in containers not provided by Waste Management, the accumulation start date is the date on which the item(s) became waste.
  - Waste composition and physical state (such as chlorinated solvent waste, liquid)
  - The hazard characteristics of the waste (such as flammable, reactive, toxic, corrosive)
  - Company name and address: SLAC National Accelerator Laboratory, 2575 Sand Hill Road, Menlo Park, CA 94025
  - Name and phone extension of the hazardous waste generator

**Caution** Improperly labeled hazardous waste can result in a regulatory violation.

## 2.4.3 Chemical Containers

### 2.4.3.1 Return-to-Vendor Containers

If possible, chemicals should be requested and purchased in return-to-vendor containers. If purchasing chemicals through [Chemical Management Services \(CMS\)](#), check with the chemical lifecycle management program manager to see if the container is returnable and how to return it.

If a return-to-vendor container is not returnable because it is not empty or cannot be returned because it held acute or extremely hazardous material (contact Waste Management for assistance with determining), arrange for a container pickup by submitting a request to Waste Management.

*Note* A container with unused product may still qualify for a chemical exchange.

### 2.4.3.2 Non-returnable Chemical Containers

For non-empty chemical containers label as indicated in Section 2.4.2 and submit a pickup request to Waste Management within 45 days from accumulation date.

Empty non-returnable chemical containers that previously held hazardous materials are handled by Waste Management in order to determine which are recyclable and which require disposal as hazardous waste. Using the entire contents so that the container can be recycled is preferable. By regulation, a container (or inner liner removed from the container) is considered empty if

- It held a pourable hazardous material and no further material can be poured or drained from the container or inner liner no matter which orientation it is held in.
- No hazardous material remains in the container or liner that can be feasibly removed by physical methods (excluding rinsing).

#### Labeling – Empty Containers

Labeling requirements for empty containers depend on the volume of the container and the condition of the original label.

Containers capable of holding five gallons or less require only a clear indication that the container is empty and what it last contained:

1. Write EMPTY on the container if the manufacturer's label is legible.
2. Write LAST CONTAINED X (X = previous content) if the manufacturer's label is no longer legible or if the label does not reflect the most recent content.

Containers capable of holding more than five gallons require complete contact information. Include all of the following:

1. DATE EMPTIED (mm/dd/yyyy)
2. LAST CONTAINED X (X = previous content) if the manufacturer's label is no longer legible or if the label does not reflect the most recent content
3. CONTACT PERSON (responsible person's name and telephone extension)

Contact Waste Management for pickup.

*Note* Empty containers capable of holding five gallons or more may not be stored more than one year.

## 2.4.4 Compressed Gas Cylinders

Certain types of compressed gas cylinders, such as small portable propane tanks and lecture bottles, must be disposed of through Waste Management. Contact Waste Management to arrange for a pickup. Damaged, unidentifiable, or abandoned cylinders must also be disposed of as hazardous waste, through Waste Management.

## 2.5 Segregation

Hazardous waste, like hazardous materials, must be segregated based on chemical compatibility. (For details see [Chemical Lifecycle Management: Management and Use Requirements](#).) Certain hazardous wastes must be segregated to avoid contamination of other hazardous or non-hazardous wastes.

### 2.5.1 Hazardous – Hazardous Contamination

- Store contaminated oil (polychlorinated biphenyl [PCB] or solvent-contaminated) separately from regular oil waste.
- Store liquid halogenated solvents separately from liquid non-halogenated solvents. Non-halogenated solvents are a possible candidate for recycling and fuel blending, which ultimately reduces our cost of disposal.

### 2.5.2 Hazardous – Non-hazardous Contamination

- Store solvent or oily solids separately from clean materials.
- Store contaminated soils separately from clean soils.

## 2.6 Secondary Containment

Secondary containment is required for storing liquid hazardous waste in containers 55 gallon or more or other waste that might be released into the environment, such as dusts, powders, and shavings. Planning for adequate containment includes consideration of capacity as well as waste compatibility requirements. (For additional information, see [Chemical Lifecycle Management: Management and Use Requirements](#).) Secondary containment can be constructed or it can be purchased. For selection criteria, consult Waste Management.

## 2.7 Collection Areas

*Hazardous waste collection areas* are designated areas that can safely accommodate hazardous waste containers and their contents for a specified waste accumulation period. These include the following types:

- *Hazardous waste storage area (HWSA)*. This is the centralized hazardous waste storage area, managed and operated by Waste Management, and used to store hazardous wastes collected from other areas on-site. This is where wastes are prepared for off-site transportation.

- *Waste accumulation area (WAA)*. These areas are for storage of hazardous wastes of different types and/or from different generators until the waste is transferred to the HWSA. Waste is typically moved from a WAA to the HWSA after approximately 45 days or nine months of waste accumulation.
- *Generic waste collection area*. These are areas or locations for the hazardous waste collection needs of a specific generator. Wastes from these areas can be sent to either a WAA or directly to the HWSA, but are generally moved to the HWSA before the waste accumulation time exceeds 45 days or nine months.
- *Satellite waste accumulation area (SWAA)*. This special type of generic waste collection area is sited in close proximity to the waste generator and is therefore routinely supervised. Wastes in amounts less than 55 gallons of hazardous waste or one quart of extremely hazardous waste can accumulate in a SWAA for up to nine months before being sent to the HWSA.

Certain types of hazardous or universal wastes are managed through Facilities and Operations (see [Hazardous Waste: Universal Waste Requirements](#) and [Hazardous Waste: Used Automotive Battery Requirements](#)). Industrial waste is also tracked and disposed of by Waste Management but it is not typically stored in the areas above, which are designated for hazardous waste (see [Hazardous Waste: Industrial Waste Requirements](#)).

Waste collection areas must be planned, prepared or constructed, tracked, inspected, and maintained in accordance with the requirements below.

### 2.7.1 Planning

The following is an overview of requirements and recommendations. For additional information or siting and construction expertise, consult both Waste Management and Facilities and Operations. Facilities can be reached by submitting a service request through the [Facilities Service Request System](#).

Waste collection areas may be indoors or outdoors. They must

- Be formally designated by Waste Management
- Be sited away from vehicular traffic, sewer drains, storm drains, and property boundaries
- Provide adequate space for aisles around each container
- Have a custodian, designated by line management

The following, additional, measures are recommended. Waste collection areas should be

- Sited on a non-porous surface, such as specially coated concrete
- Secured from unauthorized entry. Consider a room or fenced-in area that can be locked.
- Protected from exposure to sun and rain. This can be accomplished by choosing an indoor area, or covering the area with a canopy, or covering the containers with a tarp.

In planning any waste collection area, keep in mind the allowable waste quantities and waste accumulation times (see Section 2.2).

Areas where hazardous waste is stored may also need the following:

- Applicable emergency equipment, such as an eyewash or shower

- Applicable warning and directional signs to indicate the nearest telephone, eyewash, emergency shower, or exit
- Clear signage that identifies the area and includes contact information: name and phone extension

## 2.7.2 Maintenance

The hazardous waste collection area custodian must

- Keep the area free of debris and trash and schedule housekeeping, as necessary.
- Pump rainwater out of secondary containment immediately. If the rainwater has become contaminated, arrange with Waste Management to evaluate the water to determine the proper disposal method.
- Ensure all containers are kept closed when not in use.
- Inspect all containers labeled hazardous waste for leaks. If a leak is found, immediately arrange a spill cleaned in accordance with [Chapter 16, “Spills”](#).
- Verify that the safety equipment remains functional and that safety information is current.

## 2.7.3 Inspection

Waste containers and collection areas must be inspected at least once a week. Inspections do not need to be documented. For guidance on what to look for, see [Hazardous Waste: Container and Collection Area Weekly Inspection Checklist](#).

*Note* When a storage area contains both hazardous materials and waste, the most restrictive combination of inspection requirements applies. For inspection requirements for hazardous materials, see [Chapter 40, “Chemical Lifecycle Management”](#).

## 2.7.4 Satellite Waste Accumulation Area

A *satellite waste accumulation area (SWAA)* is defined as a location at or near the point of generation where waste is initially accumulated before being sent to the HWSA. A satellite area must meet the following requirements:

- Waste Management must approve a container to be designated as a satellite waste container and the container must be picked up by Waste Management within nine months of the accumulation start date.
- The satellite area must be under the control of the process operator where the waste is being generated or the area must be secured at all times.
- The generator must be able to prevent improper wastes from being added to the satellite container.
- The generator may accumulate no more than 55 gallons of dangerous waste or one quart of acutely hazardous waste per waste stream in containers at or near any point of generation.

## 2.8 On-site Transportation

For on-site transportation requirements, see [Hazardous Materials and Waste Transportation: On-site Transportation Requirements](#).

## 3 Forms

The following forms and systems are required by these requirements:

- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001). Form used to request from Waste Management delivery and pickup of waste containers
- [Hazardous Waste: Container and Collection Area Weekly Inspection Checklist](#) (SLAC-I-750-0A08J-005). Checklist used to guide weekly inspections of containers and collection areas; not required to complete or keep
- [Facilities Service Request System](#). System used to request services from Facilities

## 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- Waste Management
  - Manages the hazardous waste tracking system
  - Stores hazardous waste manifests on-site and makes them available for a period of three years and stores them off-site until closure of facility
  - Stores regulatory reports on-site and makes them available for a period of three years
  - Stores regulatory permits on-site until date of expiration

## 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)
  - [Hazardous Waste: Waste Determination and Characterization Guidelines](#) (SLAC-I-750-0A08T-001)
  - [Hazardous Waste: Universal Waste Requirements](#) (SLAC-I-750-0A08S-002)
  - [Hazardous Waste: Industrial Waste Requirements](#) (SLAC-I-750-0A08S-003)
  - [Hazardous Waste: Used Automotive Battery Requirements](#) (SLAC-I-750-0A08S-007)
  - [Hazardous Waste: Office Waste Requirements](#) (SLAC-I-750-0A08S-008)
  - [Hazardous Waste: Treatment Requirements](#) (SLAC-I-750-0A08S-006)
  - [Hazardous Waste Management](#)
  - Chapter 16, “Spills”
- [Chapter 40, “Chemical Lifecycle Management”](#)
  - [Chemical Lifecycle Management: Management and Use Requirements](#) (SLAC-I-730-0A09S-038)
  - [Chemical Management Services \(CMS\)](#)

- [Chapter 52, “Hazardous Materials and Waste Transportation”](#)
  - [Hazardous Materials and Waste Transportation: On-site Transportation Requirements](#) (SLAC-I-730-0A09S-037)
- [Chapter 53, “Chemical Safety”](#)
  - [Chemical Safety: Personal Protective Equipment Requirements](#) (SLAC-I-730-0A09S-017)
- [Chapter 58, “Laboratory Safety”](#)



# SLAC Waste Management Group

## HAZARDOUS WASTE PICK-UP AND EMPTY CONTAINER REQUEST FORM

(For waste from NON-RMMA, see reverse for instructions)

IDENTIFIER

**This section  
WM use only**

FORM NUMBER

Request Date: \_\_\_\_\_ First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

DATE RECEIVED: \_\_\_/\_\_\_/\_\_\_ DATE MODIFIED: \_\_\_/\_\_\_/\_\_\_

Department: \_\_\_\_\_ Building: \_\_\_\_\_ SLAC Extension: \_\_\_\_\_ Pager Number: \_\_\_\_\_ Mail Stop: \_\_\_\_\_

DATE ENTERED: \_\_\_/\_\_\_/\_\_\_ DATE CLOSED: \_\_\_/\_\_\_/\_\_\_

WASTE ID #	SERVICE REQUEST (mark all that apply)	(G) GENERATION LOCATION - list the building/room number or location where the waste was generated.  (P) PROCESS - describe the process that generated the waste.  (D) DESCRIPTION - describe the waste by its chemical or trade name and the estimated purity or concentration. Example: Trichloroethane 80% / water 20% - (must total 100%)  <b>Note:</b> If only the Trade Name is used, a Material Safety Data Sheet, the (MSDS) must be included.	# CONTAINERS	WASTE QUANTITY (amount and units)  Examples: -40 gallons -5 ounces -2 kilograms -50 pounds -EC (empty container)	CONTAINER DESCRIPTION (capacity and type)  Examples: -55gallon poly drum -5 gallon metal drum -16 ounce glass bottle -5 quart box -large pallet -32 gallon bag -1 gallon can	COMPLETION DATE: ___/___/___	LOG-IN BY: _____	Q.C. BY: _____
Notes: _____								

WASTE ID #	SERVICE REQUEST (mark all that apply)	(G) GENERATION LOCATION (P) PROCESS (D) DESCRIPTION	#	WASTE QUANTITY	CONTAINER DESCRIPTION	Waste ID	CD#1	SLAC Profile # / NH	Final Weight (kg)	Void
						- no waste - remedial - non-routine	CD#2	Load #		
	<input type="checkbox"/> Pickup <input type="checkbox"/> Deliver <input type="checkbox"/> Replace	G= P= D=								
	<input type="checkbox"/> Pickup <input type="checkbox"/> Deliver <input type="checkbox"/> Replace	G= P= D=								
	<input type="checkbox"/> Pickup <input type="checkbox"/> Deliver <input type="checkbox"/> Replace	G= P= D=								
	<input type="checkbox"/> Pickup <input type="checkbox"/> Deliver <input type="checkbox"/> Replace	G= P= D=								
	<input type="checkbox"/> Pickup <input type="checkbox"/> Deliver <input type="checkbox"/> Replace	G= P= D=								
	<input type="checkbox"/> Pickup <input type="checkbox"/> Deliver <input type="checkbox"/> Replace	G= P= D=								

NOTE: All electrical equipment must be fully discharged prior to pick-up by WM.





Chapter 17: [Hazardous Waste](#)  
**Container and Collection Area Weekly  
 Inspection Checklist**

**ENVIRONMENT, SAFETY & HEALTH DIVISION**

Product ID: [92](#) | Revision ID: 2411 | Date Published: 26 May 2021 | Date Effective: 26 May 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/hazwasteChecklistInspectArea.pdf>

This checklist is used to guide required weekly inspections of hazardous waste containers and collection areas (*satellite waste accumulation areas [SWAAs], waste accumulation areas [WAAs], and generic waste collection areas*). These inspections do not need to be documented but they must be performed. (See [Hazardous Waste: Management Requirements](#) [SLAC-I-750-0A08S-001].)

When a storage area contains both hazardous materials and waste, the most restrictive combination of inspection requirements applies. For inspection requirements for hazardous materials, see [Chapter 40, "Chemical Lifecycle Management"](#).

## 1 Section A Satellite Waste Accumulation Area

All waste containers stored in an SWAA must also be inspected using Section B, "Hazardous Waste Items and Containers".

*Note All SWAAs must be formally designated as such by Waste Management, and all requirements listed below must be met.*

Meets requirements		What to look for	Comments / corrective actions
No	Yes		
<input type="checkbox"/>	<input type="checkbox"/>	<b>Accumulation Time</b>	
<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>If the maximum accumulation time of nine months is nearing, Waste Management was contacted for removal</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Within 3 days of reaching the 55-gallon or 1-quart limit, the container was marked with the date the quantity limit was reached, and a request was sent to Waste Management for prompt removal</li> </ul>	
<b>Other SWAA-specific Requirements</b>			
<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>The waste is accumulated in a container located at or near the point of waste generation</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>The initial date of accumulation (that is, the date waste was first placed in the container) is clearly marked on the container label and is visible</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>The total amount of each waste stream present at each satellite accumulation point is equal to or less than 55 gallons of hazardous waste or equal to or less than 1 quart of acutely or extremely hazardous waste</li> </ul>	

## 2 Section B Hazardous Waste Items and Containers

Also inspect the area using Section A for SWAAs or Section B for WAAs and generic waste collection areas.

Meets requirements			What to look for	Comments / corrective actions
N/A	No	Yes	<b>Labeling</b> Each container or item must be clearly marked with the following information	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>The accumulation start date (that is, the date waste was first placed in the container)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>The words HAZARDOUS WASTE, waste composition, and physical state (solid or liquid)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Any hazardous properties (specify: flammable, corrosive, toxic, reactivity, or any other hazards)</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Full identification: name and extension of waste generator, SLAC National Accelerator Laboratory, 2575 Sand Hill Road, Menlo Park, CA 94025</li> </ul>	
<b>Container Condition</b>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Free of structural defects, dents, and leaks, and severe rusting</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Clean and free of chemical residue and any debris</li> </ul>	
<b>Container Management</b>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Containers are kept closed (except when adding or removing waste). Containers are considered closed when all lids, gaskets, and locking rings are in place and secured.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>If funnels are left in place, they must be latched and provide a seal that prevents release of waste.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Containers are not overfilled. Liquids: leave 3" headspace.</li> </ul>	
<b>Secondary Containment</b>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Is in place for containers holding liquid waste or other dispersible waste (such as dust, powders, or shavings). Required for liquid waste containers ≥ 55 gallons.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Is clean, free of debris, residue, and rainwater</li> </ul>	
<b>Incompatible Materials</b>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Container is compatible with the type of waste</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Incompatible wastes are segregated into separate containers</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Wastes are separated from incompatible materials stored nearby</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Hazardous wastes are not mixed with universal or common hazardous waste</li> </ul>	
<b>Empty Hazardous Materials Containers</b>				
All empties must be sent to Waste Management for recycling or disposal. These details must be clearly marked on each container				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>The word EMPTY, LAST CONTAINED X (X = previous contents), DATE EMPTIED (mm/dd/yyyy) (If capacity is greater than 5 gal.)</li> </ul>	

### 3 Section C Waste Accumulation Areas and Generic Waste Collection Areas

Also use Section B to inspect hazardous waste items and containers.

Meets requirements			What to look for	Comments / corrective actions
N/A	No	Yes	<b>Accumulation Time</b>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Hazardous waste has not accumulated for more than approximately 45 days from the accumulation start date on the container label, or nine months for universal waste.</li> </ul>	
<p><b>Requirements that may require an administrative or engineering remedy</b>                      Some of these items may not apply to all WAAs, depending on the storage area location.</p>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Protected from foot and vehicular traffic</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Sheltered from rain or rainwater runoff</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Proper signs and identification are in place at entrance.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>A telephone is readily available and operational.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Access is limited to authorized personnel only and area is locked when not in use.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Signs/instructions are posted for segregation and identification.</li> </ul>	
<p><b>Maintenance</b> <span style="color: grey; font-size: 1.2em;">Sample form, see URL at top of page</span></p>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Adequate aisle space is maintained around hazardous waste containers.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Spill response and cleanup materials and supplies are present or their location is clearly identified.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Personal protective equipment (PPE) as recommended in safety data sheets (SDSs) is present or location is identified.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>General area is clean and free of debris.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Floor surfaces are clean, free of cracks, and in good repair.</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Fire extinguishers with current annual inspection are present (if applicable).</li> </ul>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Safety showers/eyewashes with current inspection are available and functional (if applicable).</li> </ul>	



Chapter 17: [Hazardous Waste](#)

## Universal Waste Requirements

Product ID: [181](#) | Revision ID: 2412 | Date published: 26 May 2021 | Date effective: 26 May 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/hazwasteReqUniversal.pdf>

### 1 Purpose

The purpose of these requirements is to ensure that universal waste is properly managed. They cover handling and disposal of such waste. They apply to workers (as *hazardous waste generators* and *custodians*), supervisors, Facilities and Operations, and Waste Management.

### 2 Requirements

*Universal waste* comes from consumer products containing mercury, lead, cadmium, and other hazardous substances. (Common items considered universal waste are listed below.) These items must not be discarded in the regular trash nor disposed of in landfills. They must be tracked by Waste Management and managed according to the requirements below.

#### 2.1 Small Consumer-type Batteries

Batteries used in items such as flashlights, calculators, pagers, and cameras usually contain lithium, nickel-cadmium, carbon-zinc, silver-oxide, or mercury-oxide. This universal waste is generally collected at established battery collection stations for spent consumer-type batteries. Contact Waste Management to

- Locate the nearest spent-battery collection station
- Establish a new battery pickup station near a particular work area
- Initiate a pickup of spent batteries at a remote site: submit a request to Waste Management

#### 2.2 Light Bulbs and Ballasts

All spent and intact (not broken) light bulbs and lamps are classified as universal waste, including

- Tubular fluorescent lamps
- Compact fluorescent lamps (CFLs)
- Incandescent bulbs
- Sodium lamps
- High intensity discharge (HID) lamps
- Light-emitting diodes (LEDs)

Broken lamps are classified as hazardous waste and usually managed as a 90-day waste. Request a pickup from Waste Management.

Facilities and Operations handles work area light bulb and lamp replacements. To arrange to have bulbs or lamps replaced or to arrange a pickup of working bulbs and lamps that are no longer needed, contact Facilities using the [Facilities Service Request System](#). Contact Waste Management for pickup of any spent or otherwise unusable light bulbs and lamps.

Ballasts from fluorescent lighting fixtures are managed as hazardous waste. Ballasts manufactured before 1979 may contain polychlorinated biphenyl (PCB)-contaminated oil and are managed separately from those that contain only oil. Contact Waste Management for disposal.

## 2.3 Thermostats and Thermometers Containing Mercury

Many thermostats used in residences and businesses used to contain mercury. Each mercury thermostat has an average of 4 grams of mercury; this seemingly small amount could pollute an 80 acre lake or 20 million gallons of water and result in a fish consumption advisory lasting a year. If you have a thermostat or thermometer that contains mercury, carefully place it in a sealed plastic bag and contact Waste Management for disposal.

## 2.4 Aerosols

Aerosol cans at SLAC are treated as “non-empty” and therefore hazardous waste (because to be considered empty they must be punctured to ensure they are completely drained, and SLAC chooses not to perform any puncturing). Contact Waste Management to

- Locate the nearest aerosol collection container
- Establish a new aerosol pickup station near a particular work area
- Initiate a pickup of aerosols at a remote site: submit a request to Waste Management

## 2.5 Cathode Ray Tubes

A cathode ray tube (CRT) is a glass video display component of an electronic device (usually a computer or television monitor). CRTs are recycled by the SLAC Salvage group, contact them for pickup.

# 3 Forms

The following forms and systems are required by these requirements:

- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001). Form used to request delivery and pickup of waste containers from Waste Management
- [Facilities Service Request System](#). System used to request services from Facilities

## 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

## 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)



Chapter 17: [Hazardous Waste](#)

## Industrial Waste Requirements

Product ID: [182](#) | Revision ID: 2413 | Date published: 26 May 2021 | Date effective: 26 May 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/hazwasteReqIndustrial.pdf>

### 1 Purpose

The purpose of these requirements is to ensure that *industrial wastes* are safely managed. They cover characterization, containment, handling, labeling, tracking, and disposal. They apply to workers (as *hazardous waste generators* and *custodians*), field construction managers, supervisors, line management, the hazardous waste program manager; and Fleet Services, Facilities and Operations, and Waste Management.

### 2 Requirements

All *industrial waste*, defined as waste that contains hazardous materials but in concentrations below regulatory thresholds (typically demolition debris and contaminated soil), must be tracked by Waste Management and managed according to the requirements below.

#### 2.1 Waste Characterization

Because the concentration of contaminants in industrial waste falls below certain regulatory thresholds, it does not need to be managed the same as hazardous waste. (See [Hazardous Waste: Waste Determination and Characterization Guidelines](#).) Indicators that a waste is industrial include the following:

- **Waste type.** Certain types of waste are known to be classified as industrial waste, such as treated wood; soils contaminated with non-hazardous or low levels of polychlorinated biphenyls (PCBs), metals and petroleum hydrocarbons; non-friable asbestos waste; and concrete slurry. In many cases, these wastes result from construction-related projects under the purview of the Facilities and Operations Division. Such operations include excavations, maintenance, remodeling, and building demolition.
- **Waste generation history.** The waste generator's process knowledge of the waste stream can help identify the proper waste category. For excavations waste the excavation permit may identify the waste category.
- **Sampling and analysis.** If the level of contamination is unknown, sampling and analysis can help determine if the waste falls within the industrial waste classification.

For help identifying and categorizing industrial waste, contact Waste Management.

## 2.2 Containment, Handling, and Management

Industrial waste must be properly contained, handled, and managed to avoid health risks and environmental contamination. Any soil or materials that are classified as industrial waste must be

- Placed into an appropriate, labeled container, provided by Waste Management
- Handled using the appropriate personnel protective equipment (PPE)
- Segregated from hazardous and uncontaminated waste
- Properly covered and contained when stored outdoors so that runoff will not be contaminated (for additional information, see [Chapter 26, “Stormwater”](#))
- Periodically inspected to ensure that protective covers are intact and able to prevent rainwater intrusion
- Properly secured to prevent additions of unauthorized waste

Containers must

- Be labelled to match the contents
- Not be over-filled
- Be stored on level ground, easily accessible by vehicle, truck, forklift
- Have no waste on the outside

Contact Waste Management to request appropriate containers to store waste. A minimum of three days advance noticed is required when requesting bulk containers (20-yd bins, end dumps, tanks)

## 2.3 Labeling and Tracking

All industrial waste must be labeled, using a generic container label available from Waste Management

Information that must be clearly indicated on the label includes

- A waste ID number used for tracking, issued by Waste Management
- Accumulation start date
- Waste description

## 2.4 Disposal / Recycling

Industrial wastes are disposed of as expeditiously as practicable and in accordance with best management practices (BMPs) to minimize both environmental impacts and handling and storage costs. Typically, industrial wastes are removed within a year of accumulation start date but also in conjunction with the timeline of the project the waste is associated with.

The generator or field construction manager (FCM) responsible for managing the industrial waste must stay in communication with Waste Management to coordinate proper and timely disposal or recycling.

## 2.5 Oil Filters

Fleet Services generally services SLAC vehicles, including changing the oil filter. Fleet Services crushes used vehicle oil filters in preparation for transport to a recycler. Used oil filters from servicing mechanical equipment such as pumps and generators may also be managed by Fleet Services if

- The filter is not contaminated by polychlorinated biphenyls (PCBs) or a chlorinated solvent.
- The filter fits into the crusher. That is, the filter must be similar in size to an automotive filter.

To prepare a used oil filter for the crusher

1. Drain as much oil as possible from the filter into a leak-proof container and manage the oil as hazardous waste.
2. Place the drained filter in a plastic bag labeled DRAINED USED OIL FILTER.
3. Contact Fleet Services to arrange a pickup by submitting a service request through the [Facilities Service Request System](#).

If the filter is too large to fit in the crusher or if it is known or suspected of containing PCBs or a chlorinated solvent, place the drained filter in a plastic bag and arrange for collection: contact Waste Management for pick up. (See [Hazardous Waste: Management Requirements](#) for more requirements that may apply.)

## 3 Forms

The following forms and systems are required by these requirements:

- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001). Form used to request delivery and pickup of waste containers from Waste Management
- [Facilities Service Request System](#). System used to request services from Facilities

## 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

## 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)
  - [Hazardous Waste: Waste Determination and Characterization Guidelines](#) (SLAC-I-750-0A08T-001)
  - [Hazardous Waste: Management Requirements](#) (SLAC-I-750-0A08S-001)
- [Chapter 11, “Excavation Safety”](#)

- [Chapter 27, “Asbestos”](#)
- [Chapter 26, “Stormwater”](#)
- [Chapter 32, “Polychlorinated Biphenyls”](#)

Chapter 17: [Hazardous Waste](#)

## Office Waste Requirements

Product ID: [661](#) | Revision ID: 2414 | Date published: 26 May 2021 | Date effective: 26 May 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/hazwasteReqOffice.pdf>

### 1 Purpose

The purpose of these requirements is to ensure that hazardous *office waste* is properly managed. They cover handling and disposal of such waste. They apply to workers (as *hazardous waste generators* and *custodians*), supervisors, and Waste Management.

### 2 Requirements

Most people assume that waste accumulated in office areas may be disposed in the trash or recycled in the blue containers available for paper and plastic recycling. This is not true. Please see below for some common office wastes that need to be handled and disposed as *hazardous waste*.

#### 2.1 Toner and Inkjet Cartridges

Almost all toner cartridges in laser and inkjet printers, fax machines, and copiers can be recycled and are generally picked up by the office supply vendor on the next scheduled delivery. Certain manufacturers supply prepaid packaging for used cartridges, but vendor pickup is preferred. Check with the administrative assistant in your work area for pickup procedures or contact Waste Management.

#### 2.2 Aerosol Cans – Office

Pressurized aerosol cans containing such products as room freshener and pressurized air (for dust removal) are considered *universal waste*. To dispose of properly, contact Waste Management.

Waste aerosol cans (both empty and partially empty) must be stored in a collection drum specifically designated for aerosol cans. Empty and partially empty aerosol may be mixed, but no aerosol cans may be mixed with other wastes.

For pump spray bottles containing hazardous materials, [Hazardous Waste: Management Requirements](#).

#### 2.3 Miscellaneous Office Products

The following may be disposed of as regular garbage:

- Correction fluid containers

- Used pens
- Empty contact-cement bottles and glue-stick containers
- Empty glass cleaner containers

### 3 Forms

The following forms and systems are required by these requirements:

- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001). Form used to request delivery and pickup of waste containers from Waste Management

### 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

### 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)
  - [Hazardous Waste: Management Requirements](#) (SLAC-I-750-0A08S-001)

Chapter 17: [Hazardous Waste](#)

## Used Automotive Battery Requirements

Product ID: [187](#) | Revision ID: 2415 | Date published: 26 May 2021 | Date effective: 26 May 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/hazwasteReqBattery.pdf>

### 1 Purpose

The purpose of these requirements is to ensure that used lead-acid batteries are safely managed. They cover handling, labeling, storage, and transport. They apply to workers (as *hazardous waste generators* and *custodians*), supervisors, Fleet Services, and Waste Management.

### 2 Requirements

Automotive-type lead-acid wet-cell and gel-cell batteries include those typically used in cars, trucks, forklifts, electric carts, and in certain type of emergency lighting. These batteries are available in a range of sizes and have a capacity of six volts or more. Such batteries, when used, must be handled, labeled, stored, and transported according to the following requirements.

*Note*      *Lead-acid gel-cell batteries not originating from automotive or emergency lighting applications are managed as universal waste. Arrange a pickup by Waste Management for such batteries by completing a [Hazardous Waste Pick-Up and Empty Container Request Form](#).*

#### 2.1 Undamaged Batteries

Fleet Services, part of the Facilities Division, manages all undamaged used lead-acid batteries and arranges for their transport to an off-site recycling facility.

##### 2.1.1 Handling

Wet-cell batteries contain hazardous materials, including lead electrodes and acid in liquid or gel form. Used batteries may be damaged or missing a cap, so safety glasses and acid-resistant gloves must be worn when handling them to protect from potentially leaking acid, which can severely damage eyes and skin.

Missing caps must be replaced the immediately, if possible. If no replacement is available, the battery must be treated as damaged (see Section 2.2”).

##### 2.1.2 Labeling

To make sure used lead-acid batteries are not stored on-site for more than a year, each must be marked with the date (mm/dd/yyyy) it was taken out of service, written in large letters with a weather-resistant marker (such as indelible ink or paint).

### 2.1.3 Storing

Used lead-acid batteries must be stored

- In a designated area, apart from other types of batteries
- In a single layer (stacking increases the risk of short circuits and acid leaks)
- With secondary containment that is resistant to acid (such as polyethylene)
- For no more than a year, within which they must be shipped off-site for recycling (see Section 2.1.5)

An eyewash station must be located in the area (or a sign posted indicating the location of the nearest one).

The following supplies must be kept on hand in the area:

- Acid-resistant gloves
- Polyethylene plastic bags (six millimeter or thicker, sized to contain the largest battery expected for storage)
- A weather-resistant pen or paint pen (for marking used batteries)
- Rags or disposable wipes (for acid leak cleanup)
- Appropriate absorbent (for spill cleanup)

A copy of this exhibit must be posted in the area.

### 2.1.4 Transporting On-site

For transportation on-site of used lead-acid batteries, contact Fleet Services by submitting a service request through the [Facilities Service Request System](#).

### 2.1.5 Shipping Off-site for Recycling

Used lead-acid batteries must be shipped off-site for recycling within a year. Used batteries are picked up periodically by the vendor that supplies batteries to Fleet Services, usually every 45 days. The following requirements pertain to this off-site transport.

#### 2.1.5.1 Transporter Requirements

The transporter must agree that

- No other hazardous material will be transported in the same vehicle with lead-acid batteries
- The lead-acid batteries must be loaded or secured to prevent damage and short circuits during transit
- Other material (such as a dolly or spare tire) in the vehicle must also be secured to prevent damage to the batteries
- The transport vehicle may not carry material shipped by any other person other than the shipper of the batteries

### 2.1.5.2 Fleet Services Requirements

Fleet Services must

- Have the transporter read and sign a document describing the transporter requirements listed above, acknowledging that he will understand and comply
- Ensure that the transporter complies
- Inspect the transporter vehicle after the batteries have been loaded and secured
- Attach the signed document to the SLAC copy of the bill-of-lading and retain for a minimum of three years.

*Note*      *The bill of lading must include the names and addresses of the generator, transporter, and receiving location, and also the number of batteries transported.*

## 2.2 Damaged Batteries / Spills

Waste Management manages damaged batteries. To prepare damaged batteries to be picked up by Waste Management:

1. At a minimum, wear safety glasses and acid-resistant gloves to protect skin and eyes.
2. Clean up any spilled battery acid with rags or disposable wipes and appropriate absorbent.
3. Double-bag the damaged or leaking battery, as well as all material used to clean up any battery spill, in six-millimeter polyethylene bags. (Or place in an acid debris waste accumulation container provided by Waste Management, if available.)
4. Mark the bag with the date (mm/dd/yyyy) taken out of service, written in large letters with a weather-resistant marker (such as indelible ink or paint). (Damaged batteries that are not leaking acid also qualify to be returned to the vendor.)
5. Contact Waste Management to initiate a pickup by submitting a completed [Hazardous Waste Pick-Up and Empty Container Request Form](#). If battery acid has been spilled contact Waste Management within a day.

## 3 Forms

The following forms and systems are required by these requirements:

- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001). Form used to request delivery and pickup of waste containers from Waste Management
- [Facilities Service Request System](#). System used to request services from Facilities

## 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- Fleet Services must maintain records for off-site battery shipments, attaching the signed transporter document to the SLAC copy of the bill-of-lading and retaining for a minimum of three years.

## 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)
  - [Hazardous Waste: Management Requirements](#) (SLAC-I-750-0A08S-001)

## Chapter 17: [Hazardous Waste](#)

# Treatment Requirements

Product ID: [186](#) | Revision ID: 2416 | Date published: 26 May 2021 | Date effective: 26 May 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/hazwasteReqTreatment.pdf>

## 1 Purpose

The purpose of these requirements is to ensure on-site treatment of hazardous waste is performed safely and in accordance with the California Tiered Permit Program. They cover planning and operating on-site treatment units. They apply to workers (as *hazardous waste treatment operators*), line management, the hazardous waste treatment program manager, and Waste Management.

## 2 Requirements

Hazardous waste treatment is a highly regulated operation, usually performed at a properly permitted *treatment, storage, and disposal facility (TSDF)*. SLAC is not a TSDF. SLAC is, however, allowed under the California Tiered Permit Program to perform limited on-site treatment of specific types of hazardous waste generated on-site. The following is an overview of the administrative and technical requirements for these operations.

### 2.1 Administrative Requirements

#### 2.1.1 Authorization

Authorization for on-site treatment is coordinated between SLAC departments and regulatory agencies by the hazardous waste treatment program manager, who also works with SLAC departments to determine the feasibility of proposed treatment units as well as process adjustments.

##### 2.1.1.1 Determining the Feasibility of a Proposed Treatment Unit

Any department considering hazardous waste treatment must consult with the hazardous waste treatment program manager in the earliest planning stages to verify that a proposed treatment system will effectively reduce or eliminate the hazardous waste, since treatment may not be the preferred waste minimization option; proper disposal and/or off-site recycling of the hazardous waste may have fewer environmental impacts.

##### 2.1.1.2 Coordinating the Operation and Operational Changes

Management must designate a hazardous waste treatment operator to operate and manage the permitted treatment unit.

Any significant operational changes in any unit or associated equipment must be reported to the hazardous waste treatment program manager as soon as such changes are planned.

## 2.1.2 Initial and Annual Documentation Requirements

To qualify for and maintain the appropriate level of permit, departments operating hazardous waste treatment systems must collaborate with Environment, Safety, Health, and Quality (ESHQ) program managers to

- Prepare intent to treat documentation, which includes
  1. Treatment unit-specific information
  2. Environmental Protection Agency (EPA) ID number and Board of Equalization (BOE) account number
  3. Treatment processes and process descriptions
  4. Description of waste types to be treated
  5. Financial assurance certification forms
  6. Written certification assessing tank system integrity by an independent, professional engineer
  7. A statement documenting any judgments from agency actions in last three years
- Plan the construction and certification of tanks and secondary containment system(s)
- Prepare an annual waste analysis plan
- Prepare a hazardous waste source reduction plan
- Prepare a written closure plan and update closure costs annually
- Prepare records to demonstrate compliance with applicable sanitary sewer pretreatment standards
- Provide copies of local air quality district permits for operating the unit
- Prepare an operating manual/ instructions
- Administer and document an employee training program

## 2.1.3 Ongoing Documentation Requirements

### 2.1.3.1 Hazardous Waste Treatment Records

Complete records of the hazardous waste treated must be kept, including

- Date the waste was received and treated
- Quantity of waste treated
- Hazardous waste characteristics, such as hazard type, concentration, state, pH, presence of volatile organic compounds (VOCs)

### 2.1.3.2 Treatment Unit Operations Log

Each treatment unit must keep an operations log for each day the unit operates. The log must include inspections and must list

- Each treatment unit malfunction and date
- Corrective actions, and date when the corrective action was implemented

### 2.1.3.3 Waste Accumulation Area Inspection

The waste accumulation area associated with each treatment unit must be inspected weekly and the inspection must be documented and kept on file for three years. For inspection items, see Section 2.2.3, “Inspection Items”.

### 2.1.3.4 Operating Manual Updates

The operating manual/instructions must be reviewed annually or sooner if an operational adjustment or change is made.

## 2.2 Technical Requirements

### 2.2.1 Treatment Unit Operation and Emergency Response

The treatment unit operator must operate treatment units in accordance with the manual or instructions in order to recognize a process upset and implement best management practices. In the event of a spill or emergency, the operator must handle spills in accordance with [Chapter 16, “Spills”](#) and any facility-specific emergency plan.

### 2.2.2 Handling Hazardous Waste

All treatment operations must adhere to the requirements outlined in [Hazardous Waste: Management Requirements](#). In addition, the following requirements apply.

#### 2.2.2.1 Tanks and Container Management

The treatment unit operator must coordinate with Waste Management to ensure that

- All containers are compatible with the hazardous waste generated by the treatment system. To obtain suitable containers, contact Waste Management by submitting a [Hazardous Waste Pick-Up and Empty Container Request Form](#).
- All containers and tanks that accumulate or temporarily store hazardous waste are labeled HAZARDOUS WASTE
- All containers and tanks must remain closed
- All containers for hazardous waste do not exceed the SLAC-designated *accumulation time* limit, which is generally 45 days

*Note*      *Tanks used for processing waste may exceed the general accumulation time limit for processing purposes.*

#### 2.2.2.2 Hazardous Waste Treatment Unit Signs

For each hazardous waste treatment unit identified in the permit, signs must be posted that include the number and name of the unit, the unit operator, and operator telephone number.

#### 2.2.3 Inspection Items

Hazardous waste containers, tanks, and secondary containment must be inspected according to these requirements, in addition to those outlined in [Hazardous Waste: Management Requirements](#):

- Tanks containing hazardous waste and associated secondary containment must be inspected each day the unit is in operation. The inspector must check for leaks and signs of tank or containment damage.
- All hazardous waste containers must be inspected weekly for leaks and container condition.
- Inspection results that require corrective actions that may impact permit requirements must be immediately reported to the hazardous waste treatment program manager.
- Corrective action must be documented and implemented.
- Inspection logs must be completed and kept on file for three years.

#### 2.2.4 Responding to Tank Leaks

If a tank containing hazardous waste leaks

- Notify the hazardous waste treatment program manager immediately.
- Remove the tank from service and replace it unless it can be fully repaired immediately.
- Handle spills in accordance with [Chapter 16, “Spills”](#)

### 3 Forms

The following forms and systems are required by these requirements:

- None

### 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- See Section 2.1, “Administrative Requirements”.

### 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)
  - [Hazardous Waste: Management Requirements](#) (SLAC-I-750-0A08S-001)

- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001)
- [Chapter 16, “Spills”](#)

Other Documents

- Unidocs. [Hazardous Waste Tiered Permit Audit Checklist - Permit by Rule \(PBR\)](#) (UN-089)



# 851>Cal/OSHA Implementation Plan: Hazardous Waste

This form is for documenting changes to a program and the program's supporting resources (ESH Manual chapter or similar program description, training courses, databases, and so on) resulting from the adoption of the model Revolutionary Working Group (RWG) contract (see below) and the associated DOE variance from 10 CFR 851, "Worker Safety and Health Program". The purpose is to ensure consistent, concise descriptions of the resulting changes. The form is to be completed by the program manager and sent to the DOE as a cover sheet with the revised documents. The general process is as follows:

1. Program manager completes form
2. Changes to program resources made and reviewed following normal revision processes
3. DOE sent draft form and revisions
4. Changes to program resources published
5. DOE sent final form and revisions

## 1 Introduction

The RWG model contract and 10 CFR 851 variance are intended to simplify and improve the implementation of worker safety and health requirements by tailoring the laws, regulations, and standards that apply while achieving a level of protection equivalent to the requirements of 10 CFR 851. This mostly entails replacing federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910 and 1926) with Cal/OSHA regulations (8 CCR) as external requirements to be complied with but may also involve other laws and regulations and either different versions of industry standards than those cited in 10 CFR 851 or entirely different standards. (One purpose of this form is to capture the specific changes in external requirements for each program.) (For more information on this effort, see the variance application in [851>Cal/OSHA](#) resources.)

## 2 Plan

Field Number	Field Name	Field
1.	Program name	<a href="#">Hazardous Waste</a>
2.	Program manager	<a href="#">Pilastro, Yolanda L.</a>
3.	LBNL counterpart	? ( <a href="#">SME list</a> ) ( <a href="#">LBNL Phonebook</a> )
4.	Program documents	<p><i>The following is a list of existing program documents, to be reviewed by the program manager to determine which will need to be revised to reflect 851&gt;Cal/OSHA changes.</i></p> <ul style="list-style-type: none"><li>▪ <a href="#">ESH Manual Chapter 17: Hazardous Waste</a></li><li>▪ <a href="#">Hazardous Waste: Quick Start Summary</a></li><li>▪ <a href="#">Hazardous Waste: Waste Determination and Characterization Guidelines</a></li><li>▪ <a href="#">Hazardous Waste: Management Requirements</a></li><li>▪ <a href="#">Hazardous Waste Pick-Up and Empty Container Request Form</a></li><li>▪ <a href="#">Hazardous Waste: Container and Collection Area Weekly Inspection Checklist</a></li><li>▪ <a href="#">Hazardous Waste: Universal Waste Requirements</a></li><li>▪ <a href="#">Hazardous Waste: Industrial Waste Requirements</a></li><li>▪ <a href="#">Hazardous Waste: Office Waste Requirements</a></li></ul>

Field Number	Field Name	Field
		<ul style="list-style-type: none"> <li>▪ <a href="#">Hazardous Waste: Used Automotive Battery Requirements</a></li> <li>▪ <a href="#">Hazardous Waste: Treatment Requirements</a></li> </ul>
5.	Training courses	<p><i>The following is a list of existing training courses, to be reviewed by the program manager to determine which will need to be revised to reflect 851&gt;Cal/OSHA changes.</i></p> <p><i>Course materials are available for review.</i></p> <ul style="list-style-type: none"> <li>▪ ESH Course 105, Hazardous Waste Management (<a href="#">ESH Course 105</a>)</li> <li>▪ ESH Course 105R, Haz Waste Management Refresher (<a href="#">ESH Course 105R</a>)</li> <li>▪ ESH Course 197, Hazardous Waste Treatment Training (<a href="#">ESH Course 197</a>)</li> <li>▪ ESH Course 285, Haz Waste Ops (HAZWOPR) 8 Hour (<a href="#">ESH Course 285</a>)</li> <li>▪ ESH Course 299, Haz Waste Ops (HAZWOPR) 24 or 40 Hour (<a href="#">ESH Course 299</a>)</li> <li>▪ ESH Course 255, Personal Protective Equipment (PPE) (<a href="#">ESH Course 255</a>)</li> </ul>
6.	Other program resources	<p><i>The following is a list of existing program resources, to be reviewed by the program manager to determine which will need to be revised to reflect 851&gt;Cal/OSHA changes.</i></p> <ul style="list-style-type: none"> <li>▪ <a href="#">Chemical Management Services (CMS)</a></li> <li>▪ <a href="#">Hazard Communication and MSDS References</a></li> </ul>
7.	Current external requirements	<p><i>The following is a list of current external requirements for this program, as identified in the program documents above.</i></p> <ul style="list-style-type: none"> <li>▪ Title 42, United States Code, "The Public Health and Welfare", Chapter 82, "Solid Waste Disposal", Subchapter 3, "Hazardous Waste Management", Section 6921, "Identification and Listing of Hazardous Waste" (<a href="#">42 USC 6921</a>)</li> <li>▪ Title 42, United States Code, "The Public Health and Welfare", Chapter 82, "Solid Waste Disposal", Subchapter 3, "Hazardous Waste Management", Section 6922, "Standards Applicable to Generators of Hazardous Waste" (<a href="#">42 USC 6922</a>)</li> <li>▪ Title 42, United States Code, "The Public Health and Welfare", Chapter 82, "Solid Waste Disposal", Subchapter 3, "Hazardous Waste Management", Section 6923, "Standards Applicable to Transporters of Hazardous Waste" (<a href="#">42 USC 6923</a>)</li> <li>▪ Title 29, Code of Federal Regulations, "Labor", Subtitle B, "Regulations Relating to Labor" (Continued), Chapter 17, "Occupational Safety and Health Administration, Department of Labor", Part 1910, "Occupational Safety and Health Standards", Subpart Z, "Toxic and Hazardous Substances" (<a href="#">29 CFR 1910.1000–1910.1450</a>), except 29 CFR 1910.1096, "Ionizing Radiation"</li> <li>▪ Title 29, Code of Federal Regulations, "Labor", Subtitle B, "Regulations Relating to Labor" (Continued), Chapter 17, "Occupational Safety and Health Administration, Department of Labor", Part 1926, "Safety and Health Regulations for Construction", Subpart D, "Occupational Health and Environmental Controls" (<a href="#">29 CFR 1926.50–1926.66</a>)</li> <li>▪ Title 40, Code of Federal Regulations, "Protection of the Environment", Chapter 1, "Environmental Protection Agency", Subchapter E, "Pesticide Programs", Part 170, "Worker Protection Standard" (<a href="#">40 CFR 170</a>)</li> <li>▪ Title 40, Code of Federal Regulations, "Protection of the Environment", Chapter 1, "Environmental Protection Agency", Subchapter I, "Solid Wastes (Continued)", Part 260, "Hazardous Waste Management System: General" (<a href="#">40 CFR 260</a>)</li> <li>▪ Title 40, Code of Federal Regulations, "Protection of the Environment", Chapter 1, "Environmental Protection Agency", Subchapter I, "Solid Wastes (Continued)", Part 261,</li> </ul>

Field Number	Field Name	Field
		<p>"Identification and Listing of Hazardous Waste" (<a href="#">40 CFR 261</a>)</p> <ul style="list-style-type: none"> <li>▪ Title 40, Code of Federal Regulations, "Protection of the Environment", Chapter 1, "Environmental Protection Agency", Subchapter I, "Solid Wastes (Continued)", Part 262, "Standards Applicable to Generators of Hazardous Waste" (<a href="#">40 CFR 262</a>)</li> <li>▪ Title 40, Code of Federal Regulations, "Protection of the Environment", Chapter 1, "Environmental Protection Agency", Subchapter I, "Solid Wastes (Continued)", Part 263, "Standards Applicable to Transporters of Hazardous Waste" (<a href="#">40 CFR 263</a>)</li> <li>▪ Title 40, Code of Federal Regulations, "Protection of the Environment", Chapter 1, "Environmental Protection Agency", Subchapter I, "Solid Wastes (Continued)", Part 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities" (<a href="#">40 CFR 265</a>); only those sections required in 40 CFR 262 for hazardous waste generators</li> <li>▪ Title 40, Code of Federal Regulations, "Protection of the Environment", Chapter 1, "Environmental Protection Agency", Subchapter I, "Solid Wastes (Continued)", Part 268, "Land Disposal Restrictions" (<a href="#">40 CFR 268</a>)</li> <li>▪ Title 40, Code of Federal Regulations, "Protection of the Environment", Chapter 1, "Environmental Protection Agency", Subchapter R, "Toxic Substances Control Act", Part 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions" (<a href="#">40 CFR 761</a>)</li> <li>▪ Title 49, Code of Federal Regulations, "Transportation", Subtitle B, "Other Regulations Relating to Transportation", Chapter 1, "Pipeline and Hazardous Materials Safety Administration, Department of Transportation" (<a href="#">49 CFR 100-185</a>)</li> <li>▪ California Health and Safety Code, Division 20, "Miscellaneous Health and Safety Provisions", Chapter 6.5, "Hazardous Waste Control" (<a href="#">HSC 25100-25250.28</a>)</li> <li>▪ Title 22, California Code of Regulations, "Social Security", Division 4.5, "Environmental Health Standards for the Management of Hazardous Waste", Chapter 11, "Identification and Listing of Hazardous Waste" (<a href="#">22 CCR 66261.1-66261.126</a>)</li> <li>▪ Title 22, California Code of Regulations, "Social Security", Division 4.5, "Environmental Health Standards for the Management of Hazardous Waste", Chapter 12, "Standards Applicable to Generators of Hazardous Waste" (<a href="#">22 CCR 66262.10-66262.89</a>)</li> <li>▪ Title 22, California Code of Regulations, "Social Security", Division 4.5, "Environmental Health Standards for the Management of Hazardous Waste", Chapter 13, "Standards Applicable to Transporters of Hazardous Waste" (<a href="#">22 CCR 66263.10-66263.50</a>)</li> <li>▪ Title 22, California Code of Regulations, "Social Security", Division 4.5, "Environmental Health Standards for the Management of Hazardous Waste", Chapter 18, "Land Disposal Restrictions" (<a href="#">22 CCR 66268.1-66268.124</a>)</li> <li>▪ Title 22, California Code of Regulations, "Social Security", Division 4.5, "Environmental Health Standards for the Management of Hazardous Waste", Chapter 45, "Requirements for Units and Facilities Deemed to Have a Permit by Rule", Article 1, "Permit by Rule", Sections 67450.1 through 67450.3 (<a href="#">22 CCR 67450.1-3</a>)</li> </ul> <p><i>The following is a list of current external reference/guidance documents.</i></p> <ul style="list-style-type: none"> <li>▪ <a href="#">Radioactive Waste Manual</a></li> <li>▪ <a href="#">Facilities Service Request System</a></li> <li>▪ California Environmental Protection Agency, Department of Toxic Substances Control. <a href="#">Fact Sheet: Fixed Treatment Unit Operating under Permit by Rule</a> (FS-03-037-HWM)</li> </ul>

Field Number	Field Name	Field
		<ul style="list-style-type: none"> <li>▪ Unidocs. <a href="#">Hazardous Waste Tiered Permit Audit Checklist - Permit by Rule (PBR)</a> (UN-089)</li> <li>▪ Lawrence Berkeley National Laboratory. <a href="#">Health and Safety Manual, Chapter 20, "Waste Management"</a></li> <li>▪ Lawrence Berkeley National Laboratory. <a href="#">Guidelines for Generators to Meet HWHF Acceptance Requirements for Hazardous, Radioactive, and Mixed Wastes at Berkeley Lab</a> (PUB-3092)</li> </ul>
8.	Proposed external requirements	<p><i>The following is a list of current external requirements for this program, as identified in the program documents above.</i></p> <ul style="list-style-type: none"> <li>▪ Replaced references to 29 CFR 1910, Subpart Z, "Toxic and Hazardous Substances" and 29 CFR 1926, Subpart D, "Occupational Health and Environmental Controls", with a reference to 8 CCR 5160–5199, "Hazardous Substances and Processes"</li> <li>▪ Deleted regulations and standards covered under other programs</li> </ul>
9.	Proposed substantive changes	<p><i>Describe (list) the substantive changes to be made in the program, based on the new external requirements. <b>Enter "no changes" if none.</b></i></p> <ul style="list-style-type: none"> <li>▪ No changes</li> </ul>
10.	Additional proposed substantive changes	<p><i>Describe (list) the substantive changes to be made in the program, in addition to those based on the new external requirements. For example, those due to stakeholder input, other reviews and audits, operating experience. <b>Enter "no changes" if none.</b></i></p> <ul style="list-style-type: none"> <li>▪ Added description of ESH coordinator role and responsibilities</li> <li>▪ Clarified Waste Management and Fleet Services responsibilities</li> <li>▪ Changed time limit for collecting waste from waste collection areas from 320 days to nine months</li> <li>▪ Added description of methods for contacting Waste Management</li> <li>▪ Added physical requirements for storage areas</li> <li>▪ Added recordkeeping requirements</li> <li>▪ Added requirement to allow three days for Waste Management to provide bulk storage for industrial waste</li> </ul>
11.	Affected program documents	<p><i>List program documents affected by the changes above. <b>Enter "no changes" if none.</b></i></p> <ul style="list-style-type: none"> <li>▪ <a href="#">ESH Manual Chapter 17: Hazardous Waste</a></li> <li>▪ <a href="#">Hazardous Waste: Management Requirements</a></li> <li>▪ <a href="#">Hazardous Waste: Container and Collection Area Weekly Inspection Checklist</a></li> <li>▪ <a href="#">Hazardous Waste: Universal Waste Requirements</a></li> <li>▪ <a href="#">Hazardous Waste: Industrial Waste Requirements</a></li> </ul>
12.	Affected training courses	<p><i>List training courses affected by the changes above. <b>Enter "no changes" if none.</b></i></p> <ul style="list-style-type: none"> <li>▪ ESH Course 285, Haz Waste Ops (HAZWOPR) 8 Hour (<a href="#">ESH Course 285</a>)</li> <li>▪ ESH Course 299, Haz Waste Ops (HAZWOPR) 24 or 40 Hour (<a href="#">ESH Course 299</a>)</li> <li>▪ ESH Course 255, Personal Protective Equipment (PPE) (<a href="#">ESH Course 255</a>)</li> </ul>

Field Number	Field Name	Field
13.	Other affected program resources	<i>List other program resources affected by the changes above. <b>Enter “no changes” if none.</b></i> ■ No changes
14.	Comments/Questions/Issues	<i>Add any comments or questions regarding applicable requirements or changes.</i> [ Add text ]
15.	Status	<input checked="" type="checkbox"/> Initial draft (proposed changes) <input checked="" type="checkbox"/> Draft (for DOE review) <input checked="" type="checkbox"/> Final (published changes)
16.	Date completed	9/9/20 (rev 9/23/2020)                                11/25/2020                                5/26/2021