



# Sanford

## Underground Research Facility

**South Dakota Science and Technology Authority**

### **Waste Management Standard**

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**Revision History**

<b>Rev</b>	<b>Date</b>	<b>Section</b>	<b>Paragraph</b>	<b>Summary of Change</b>	<b>Authorized by</b>
01	12/20/2022	NA	NA	Initial Release	CCR 659
02	1/9/2024	1.0, 3.0, 4.0, 6.0	NA	Updated purpose, added definition, added Executive Director of SDSTA and Environmental Coordinator in responsibilities, and added reference	CCR 893

## 1.0 Purpose

The purpose of this standard is to provide personnel at Sanford Underground Research Facility (SURF) guidance to ensure compliance with the Resource Conservation and Recovery Act (RCRA), South Dakota Codified Law (SDCL 34-A11) and Administrative Rule (ARSD 74:28).

South Dakota Science and Technology Authority (SDSTA) references the following to fulfill this standard:

- 40 CFR 261.3 – Definitions of Hazardous Waste
- 40 CFR part 262 – Standards Applicable to Generators of Hazardous Waste
- 40 CFR 261.21 – Characteristics of Ignitability
- 40 CFR 261.22 – Characteristics of Corrosivity
- 40 CFR 261.23 – Characteristics of Reactivity
- 40 CFR 261.24 – Characteristics of Toxicity
- 40 CFR 261.30 – General
- 40 CFR 261.31 – Hazardous Wastes from Non-Specific Sources
- 40 CFR 261.32 – Hazardous Wastes from Specific Sources
- 40 CFR 261.33 – Discarded Commercial Chemical Products
- 40 CFR 261.4 (a) – Materials Which are not Solid Wastes
- 40 CFR 260.30 – Non-Waste Determinations and Variances from Classification as Solid Waste
- 40 CFR 260.34 – Standards and Criteria for Non-Waste Determinations
- 40 CFR 273 – Standards for Universal Waste Management
- 40 CFR 279.11 – Used Oil Specifications
- ARSD 74:27:13:17 – Special Wastes

## 2.0 Scope

This standard applies to all South Dakota Science and Technology Authority (SDSTA) personnel, and users of the facility that generate waste. SDSTA is a small quantity generator of hazardous waste.

## 3.0 Definitions

**Accumulation Time Limit** – the maximum time that waste can be accumulated onsite.

- For Hazardous Wastes, the accumulation time limit is 270 days (disposal facility  $\geq$  200 miles) from the time the waste arrives at the Central Accumulation Area.
- For Universal Wastes, the accumulation time limit is 1 year from the time the waste begins to accumulate.

**Central Accumulation Area (CAA)** – a central accumulation area is a designated hazardous waste accumulation area with hazardous waste accumulating in units subject to 40 CFR 262.16

**Disposal** – is the discharge, deposit, injection, dumping, spilling, leaking, or placing of any waste on any land or water.

**Generator** – the producer of a hazardous waste.

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**Hazardous Waste** – a solid waste that exhibits a characteristic defined by the following:

- Ignitability
- Corrosivity
- Reactivity
- Toxicity
- A solid waste is determined to be a characteristic hazardous waste either by testing or by process knowledge. A hazardous waste may also be defined by listing, that is, named in any one of four lists (F-list, K-list, U-list and P-list) found in 40 CFR 261.30 through 40 CFR 261.33.

**Medical Waste** – wastes generated from health care, that may be contaminated by blood, body fluids, or other potentially infectious materials. Medical waste generated at SURF typically includes used sharps and used Personal Protective Equipment. See ESH-(4000-S)-207414 Bloodborne Pathogen Standard for more information.

**Recycling** – the action or process of converting waste into reusable material.

**Satellite Accumulation Area (SAA)** – is a designated collection point for hazardous waste that is located at or near the point of waste generation and is ‘under the control’ of the waste generator.

**Small Quantity Generator** – is a generator which produces between 220 pounds and 2,200 pounds of hazardous waste or no more than 2.2 pounds of acute waste in a calendar month.

**Solid Waste** – is any discarded, abandoned, accumulated, or inherently waste-like material as defined by federal requirements; and that is not excluded from regulation under 40 CFR 261.4 (a) by variance or by a non-waste determination provided for in 40 CFR 260.30 or 40 CFR 260.34. A solid waste may be either a liquid, solid, sludge, or contained gaseous material. Examples of materials regulated as solid waste include materials accumulated for recycling, used in a manner constituting disposal (such as land application), burned for disposal or energy recovery, accumulated speculatively, as well as spent materials, by-products, commercial chemical products, and scrap metals. In general, discarded materials are materials having the potential to enter the environment via mechanisms that are not associated with the material’s intended use as a product. Relevant exclusions include domestic sewage, industrial wastewater that are point source discharges subject to regulation under the section 402 of the Clean Water Act, nuclear materials or by-product material as defined by the Atomic Energy Act of 1954 as amended by 42 U.S.C. 2011, and certain mining waste or oil and gas exploration and production wastes.

**Universal Waste** – are relatively common hazardous wastes that may be managed under the less stringent requirements of 40 CFR 273 that facilitate recycling. These wastes include batteries, pesticides, lamps (such as light bulbs that contain mercury), and mercury-contained equipment (such as floats, thermometers, thermostats, etc.) Note, unused mercury in a flask is not considered a universal waste (but rather a hazardous waste) if it is to be abandoned or discarded. Wastes must be recycled to be managed as universal waste and wastes that are not ultimately recycled cannot be accumulated as universal waste. The State of South Dakota has not adopted the updated federal universal waste rule that places aerosol cans in the universal waste category and therefore aerosol cans cannot be managed as universal waste.

**Used Oil** – is any petroleum product that has been refined from crude oil or any synthetic oil that has been used and as a result is contaminated by physical or chemical impurities.

## 4.0 Responsibilities

### 4.1. Environmental Manager and/or Environmental Coordinator

- 4.1.1. Develops, implements, and updates this standard.
- 4.1.2. Communicates this standard to all personnel.
- 4.1.3. Develops and provides waste management training to operations staff, science, and certain other users of SURF.
- 4.1.4. Understands federal, state, and local laws and regulations relating to solid and hazardous waste and staying current with changes in the laws, rules, and regulations.
- 4.1.5. Interfaces with federal, state, and local regulatory agencies.
- 4.1.6. Maintains the required documents and records of waste training, generation, shipment, and disposal as outlined in the record keeping section of this document.
- 4.1.7. Conducts weekly inspections of the CAA.
- 4.1.8. Arranges waste pick up and ensures the disposal is performed at an appropriate facility.
- 4.1.9. Manages waste disposal contracts.
- 4.1.10. Signs hazardous waste manifests.

### 4.2. Executive Director of SDSTA

- 4.2.1. Ensures personnel, financial, and administrative resources to maintain compliance with this standard.

### 4.3. Department Directors

- 4.3.1. Communicate this standard throughout their department.
- 4.3.2. Ensure that departmental staff comply with this standard.

### 4.4. SDSTA Personnel and Users

- 4.4.1. Adhere to this standard.
- 4.4.2. Conduct work in a manner that minimizes environmental impacts of waste generation.
- 4.4.3. Plan activities and experiments so that waste generation is minimized.
- 4.4.4. Complete required waste management training.
- 4.4.5. Identify waste streams arising from work activities and reporting them to the Environmental Manager.
- 4.4.6. Store wastes in compliance with regulations and the Waste Management Standard.
- 4.4.7. Familiarize themselves with the properties, health risks, and precautions required for handling waste.
- 4.4.8. Contact the Environmental Manager with questions regarding waste management including training, waste identification, regulations, reference materials, signage, container requirements, or other aspects of waste management.
- 4.4.9. Remove waste from satellite accumulation areas (SAAs) and transferring to the CAA in accordance with Section 5.3 of this standard.

## 5.0 Instructions

- 5.1. Solid waste, which may include hazardous waste, is generated by SDSTA personnel and users of the facility. SDSTA waste is generated in support of the underground and surface infrastructure and science waste is generated by performing work related to a specific experiment or group of experiments by a science group or person. SDSTA is considered the generator of the waste derived by both SDSTA personnel and users and therefore is responsible for the management and recycling or disposal of the waste. Contractors are responsible for their own waste

management and disposal, including complying with all applicable state and federal laws and regulations.

- 5.2.** Potential waste generation shall be discussed with the Environmental Manager or Environmental Coordinator at the start of a project or work. Waste characterization, container type, labeling, storage, handling, and disposal practices will be discussed. Waste generated will be classified as non-hazardous, hazardous, or universal using the ESH-(8000-F)-202461 Waste Characterization Profile Form and the completed form will be saved as a record. The records will be maintained by the Environmental Manager.
- Wastes must be segregated into the appropriate waste streams prior to placement in the applicable, compatible waste container. Waste generated on site may include, but are not limited to:
    - **Recyclable Cardboard**
    - **Recyclable Scrap Metal**
    - **Recyclable Paper**
    - **Recyclable Plastic, Glass, Aluminum**
    - **Construction and Demolition Waste (C&D)**
    - **Aerosol Cans**
    - **Used Oil**
    - **Used Grease**
    - **Used Antifreeze**
    - **Oily Rags**
      - ◆ Oily rags must be free of free liquids before they can be double-bagged and deposited into the general trash dumpster.
    - **Compressed Gas Cylinders**
    - **Regulated Medical Waste**
      - ◆ SDSTA utilizes Stericycle to properly manage and dispose of regulated medical waste.
    - **Waste Copper Refining Bath Solution (Majorana Acid)**
    - **Universal Waste**
      - ◆ Batteries
      - ◆ Pesticides
      - ◆ Mercury-containing equipment
      - ◆ Waste lamps
- 5.3.** Hazardous wastes will typically be generated and initially stored at a Satellite Accumulation Area (SAA), or other designated areas approved by the Environmental Manager or Environmental Coordinator. Containers in SAAs must be at or near the point of generation, closed when wastes are not being added, and labeled with the contents and the words “Hazardous Waste”. Each SAA can accumulate up to 55 gallons of the designated hazardous waste. SAA containers must be labeled with the date the container was filled and must be moved to the Central Accumulation Area (CAA) within 3 days of the fill date.

- 5.4. Hazardous waste containers must be shipped for disposal within 180 days (TSDf <200 miles) or 270 days (TSDf >200 miles) of the date that they were filled.
- 5.5. Training
  - New hire and annual refresher waste management training will be given to SDSTA personnel and facility users.
- 5.6. Record Keeping
  - Hazardous waste manifests will be kept on site for a minimum of three years from the Treatment, Storage, and Disposal Facility returned copy date. Manifests beyond this date may be stored in archives for a minimum of thirty years.
  - Land Disposal Restriction (LDR) notices, LDR determination records, Hazardous Waste Profile Sheets, and Exception Reports will be kept with the associated manifests. These documents are to be kept with the manifest for the time specified in 5.6.
  - Personnel training records on current personnel will be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility.

## **6.0 Documented Information/Related Document**

- 6.1. ESH-(8000-F)-202461 Waste Characterization Profile Form
- 6.2. ESH-(4000-S)-207414 Bloodborne Pathogen Standard