MANAGING HAZARDOUS WASTE
A Practical Approach
REGULATION UPDATE

• Where we are in the process.
Steps to Basic Hazardous Waste Management

1. **Material**
   - Is the material a waste? (40 CFR § 261.3)
     - Abandoned
     - Recycled
     - Inherently waste-like
     - Military munition
   - **Yes**
     - From a Solid Waste - (40 CFR § 261.4(a))
     - **Excluded?**
   - **No**
     - From a Hazardous Waste - (40 CFR § 261.4(b))
     - **Excluded?**
   - **Yes**
   - **Solid Waste or Hazardous Waste rules do not apply**
     - *Ensure documentation and record maintenance*

2. **Material Destined for Use**
   - **Yes**
   - **No**

3. **Solid Waste Rules Do Not Apply**
   - **Listed**
     - (40 CFR § 261, Subpart D)
   - **Characteristic**
     - (40 CFR § 261, Subpart C)
   - **Mixture Rule**
     - (40 CFR § 261.3(a)(2)(iv))
   - **Derived From Rule**
     - (40 CFR § 261.3(c)(2)(i))

4. **Hazardous Waste**
   - **Determine Generator Status**
     - CESQG
     - SQG
     - LQG
What is a Hazardous Waste?

“Hazardous Waste” is a waste which could potentially threaten human health or the environment. Hazardous Waste is defined in 40 CFR Part 260. This includes waste which exhibit one of four hazardous characteristics:

- Ignitability (flammability)
- Corrosivity
- Reactivity (oxidizer)
- Toxicity (poison)
The Hazardous Waste Determination

• A generator of a waste, all waste,
• must determine what, if any, hazards
• it contains.
• The determination must be documented
• and records retained.
MIXTURE RULE & DERIVED-FROM RULE

• A “mixture” of hazardous waste with solid waste (e.g., motor oil, trash, debris) may become a hazardous waste.

• The waste “derived from” the treatment, storage, or disposal of hazardous waste may also be a hazardous waste.
When Does A Hazardous Waste Cease To Be A Hazardous Waste?

• Listed Waste, Mixtures With or Derived From Listed Waste - When It Has Been Excluded (Delisted) Under 40 CFR 260.20 and 260.22 and Does Not Exhibit Any of the Characteristics.
When Does A Hazardous Waste Cease To Be A Hazardous Waste?

• **Characteristic Waste** - When It No Longer Exhibits Any of the Characteristics and Meets LDR Treatment Standards (UTS) at 40 CFR 268.48.

**NOTE:** Many UTS limits are Lower Than Characteristic Concentrations.
Exceptions To The Mixture Rule

• Mixtures of Solid Waste and Hazardous Waste Listed Solely for a Characteristic (I,C,R, or E), Where Resulting Mixture No Longer Exhibits Any Characteristics (F003)

• Specified Wastewater Mixtures
Exceptions To The "Derived From" Rule

- Lime Stabilized Waste Pickle Liquor Sludge That Is Not Characteristically Hazardous
- Residues From Burning Certain Exempt Petroleum Refinery Fuels
- Delisted Waste Materials
- Hazardous Debris Meeting Debris LDR Treatment Standards Using Extraction Or Destruction Technologies
The Hazardous Waste Determination

• Make a determination on ALL waste generated on-site

• Treat unknown material as a HW during the determination process (label, close, date, etc.)

• Keep necessary documentation for both hazardous and non-hazardous waste
Characteristic Wastes

- **D001** - Ignitable Wastes (flashpoint is less than 140º F) includes oxidizers
- **D002** - Corrosive Wastes (pH less than or equal to 2 or greater than or equal to 12.5)
- **D003** - Reactive Wastes (water reactive, normally unstable materials, cyanides & sulfides, etc)
- **D004** - TCLP Wastes
Satellite Accumulation

• The accumulation location must be at or near the point of waste generation and under the control of the person in charge of the process generating the waste;

• The total quantity of hazardous waste accumulated in the satellite storage area shall not exceed a total of 55 gallons of hazardous waste or 1 quart of acutely hazardous waste;

• The hazardous waste cannot be accumulated in tanks;

• Once the quantity of hazardous waste stored within a Satellite Storage Area reaches the applicable quantity limitations of 55 gallons or 1 quart of acute HW, the container must be labeled with the final accumulation date, within 3 days and the waste transported to the Storage Area.
Satellite Accumulation

• **Conditions of Containers.** If a container holding a hazardous waste is not in good condition or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition ....

• **Compatibility of Waste with Containers.** Container used must be made of or lined with materials which will not react with and are otherwise compatible with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

• **Management of Containers.** Container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.
Satellite Accumulation

• What is wrong with this picture?
Storage Area - Time Limits

• **LQG**: 90-Days

• **SQG**: 180-Days or 270-Days (200 mile rule)

• **CESQG**: None
Storage Area- Containers

- Ensure containers are properly labeled;
- Always check the integrity of the containers;
- Aisle space- this is a safety concern!
- Weekly inspections- Take your time!
- Tracking sheets- Always a good idea.

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Universal Waste
UNIVERSAL WASTE TYPES

• There are five (5) categories of universal waste, which include:
  • lamps
  • lamp ballasts;
  • universal waste batteries;
  • pesticides; and
  • mercury-containing equipment.
Universal Waste Lamps

- Universal waste lamps consist of:
  - fluorescent lamps and ballasts;
  - high intensity lamps;
  - neon lamps;
  - mercury vapor lamps;
  - high pressure sodium lamps; and
  - metal halide lamps.

- Incandescent bulbs are non-hazardous and may be thrown in regular trash.
Universal Waste Lamps Proper Handling Procedures

• Lamps must be placed in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps, i.e. fiber box or drum.
Universal Waste Lamps Proper Handling Procedures

• It is common practice and recommended that the original box which the lamp was purchased in be used to store the waste lamp.

• **Containers and packages must remain closed** unless adding or removing lamps and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

• Do not tear the flaps off of the lamp containers and tape the flaps closed when lamps are not being added to the container.
Universal Waste Lamps
Proper Handling Procedures

• As soon as the first lamp (if multiple lamps are being stored in a single container) is placed in the container then the container must be labeled with the words Universal Waste-Lamp(s) and must be dated.

• You may either bring the universal waste to a designated storage area or create a designated storage area where the waste is generated.

• There is a one year limit that universal waste lamps can be stored
Universal Waste Batteries

• Universal Waste Batteries consist of:
  • Nickel-Cadmium batteries;
  • Metal hydride batteries;
  • Lead-acid batteries;
  • Silver oxide
  • Mercury oxide;
  • Lithium;
  • Zinc air; and
  • Zinc carbon.

• These batteries are commonly used in pagers, cell phones, cameras, and computers.

• Alkaline batteries (e.g., AA, AAA, C, etc.) are non-hazardous and may be thrown in regular trash.
Universal Waste Batteries
Proper Handling Procedures

• It is recommended that universal waste batteries be stored in an approved 5 gallon plastic container with the proper label affixed and filled-out.

• Cover positive and negative terminals (electricians tape or a similar material works well) prior to placing in the container.
Universal Waste Batteries

• If you choose to place each battery in a larger container, then as soon as the first battery is placed in the container the container must be labeled with the words *Universal Waste Batteries* and must be dated.

• You may either bring the universal waste to a designated storage area or create a designated storage area where the waste is generated.

• There is a one year limit that universal waste batteries can be stored.
Universal Waste
Mercury-Containing Equipment

• Mercury-Containing Equipment (MCE) is defined as a device or part of a device that contains elemental mercury integral to its function.

• Various types of MCE waste include instruments that are used in industry, hospitals and households.

• Some commonly recognized items include, but are not limited to, thermometers, thermostats, barometers, manometers, temperature and pressure gauges, and mercury switches.
Universal Waste
Mercury-Containing Equipment

• Universal waste MCE must be managed in a way that prevents releases of any universal waste or component of a universal waste to the environment.

• The MCE must be labeled with the words “Universal Waste – Mercury-Containing Equipment” and must also be labeled with the date they became a waste. There is a one year limit that universal waste MCE can be stored.
Key Points to Remember

• Sealed batteries, MCE, certain pesticides, and lamps become universal wastes when they are sent for reclamation or discarded

• All universal wastes contain toxic metals and must be handled with care

• Place each type of universal waste in designated containers and label properly
Waste Shipment

• On or Before the waste is transported off-site:
  • The container(s) should be inspected on the spot using a hazardous waste tracking sheet.
  • Visible leakage.
  • Secure caps or lids.

• Manifest:
  • Fill out all information in Lines 1-14.
  • Please ensure any special handling precautions are listed in Line 14.
  • Sign and date the manifest on Line 15.
Waste Shipment

- In March 2005, EPA standardized the content and appearance of the manifest form.

- A hazardous waste generator may report up to six federal and state codes in Item 13 for each waste stream identified in Item 9b.

- A generator may report additional waste codes in the “Additional Description and Special Handling” box (i.e., Item 14)
Waste Shipment

• If a LQG doesn’t receive a sign copy of the manifest within 35 days of shipping the waste - contact the transporter and/or designated receiving facility.

• If the generator has not received a signed copy within 45 days - Exception Report

• Retain copies of manifest for 3 years.
Hazardous Waste Training

- Initial training
- Annual refresher training
- Documentation
- Relevant to job duties performed
- Training program led by qualified individual
Hazardous Waste Training

Job titles —
• Environmental staff
• Lab staff
• Material handler
• Production employee
• Safety team

Job descriptions
What questions should I be asking myself?

• Do I understand the requirements?

• Do I know where to find information?

• Self-audit readiness?
Summary: Keys To Success

• Know your processes
• Always make a waste determination
• Know your satellite containers and locations
• Proper management of storage containers and areas
• Waste shipment procedures- know them!

• Training ultimately is your greatest ally.
QUESTIONS?
CONTACT US

Tom J. Richmond
Hazardous Waste Compliance

Bureau of Land and Waste Management
S.C. Dept. of Health & Environmental Control
Office: (803) 898-0464
Fax: (803) 898-1415
Connect: www.scdhec.gov  Facebook  Twitter

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