

Florida Department of Environmental Protection



MERCURY RECOVERY & RECLAMATION FACILITIES

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Rules and Regulations

- 40 CFR 273: Standards for Universal Waste Management
- Chapter 62-737: “The Management of Spent Mercury-containing Lamps and Devices Destined for Recycling.”
 - ❖ **62-737.800: Permit Applications Requirements and General Permitting Standards for Mercury Recovery and Mercury Reclamation Facilities**
- Rules/guidance can be found on the FDEP website, Federal Register and the individual facility permit





Definitions



- 62-737.200:
- Definitions
 - **Mercury Reclamation Facility:** means a universal waste lamp or device destination facility where operations or processes are performed or equipment is used to receive and recapture mercury from spent mercury-containing lamps or devices, ampoules, mercury-containing materials or residuals, or pourable, commodity grade mercury materials and that can demonstrate, using a quality control plan approved in accordance with Chapter 62-160, F.A.C., and an EPA analytical test method for determining the total mercury content of a waste material, an effective reclamation rate of at least 99% of the mercury introduced into its process or a resulting total mercury concentration remaining in the processed material that is below the method detection limit; and by which a and by which a commercial grade of mercury is produced for recycling.



Definitions Continued

- **Mercury recovery facility:**
 - Means a universal waste lamp or device destination facility where operations or processes are performed or equipment is used to receive and process spent mercury-containing lamps or devices for the purpose of crushing or dismantling and separating the lamps or devices in a manner as to produce: separated, individual recyclable components such as glass and scrap metal; and mercury-containing phosphor powder or other mercury-containing residuals that will be processed at a mercury reclamation facility for the purpose of reclamation of the mercury .





Definitions Continued

- **Method Detection Limit:**
 - Means the smallest concentration of an analyte of interest that can be measured and reported with 99 percent confidence that the concentration is greater than zero.





Definitions Continued

- **Large Quantity Handler (LQH):**
 - A large quantity handler of universal waste lamps or devices is: a generator or reverse distribution handler accumulating 5,000 kilograms or more of universal waste lamps or devices at any one time; or another handler, excluding a generator or reverse distribution handler, that accumulates 2,000 kilograms or more of lamps or 100 kilograms or more of devices at any one time.
- **Large Quantity Generator (LQG):**
 - Large Quantity Generators (LQG) generate 1,000 kilograms per month or more of hazardous waste, or more than 1 kilogram per month of acutely hazardous waste.



Permit Requirements

- Who has to apply:
- What is required:
- Permit Conditions:
 - General
 - Specific
 - Operating
- Siting Requirements:
- Closure Plan:
- Post-Closure Plan:





Permitted Facilities located in Florida (Veolia)

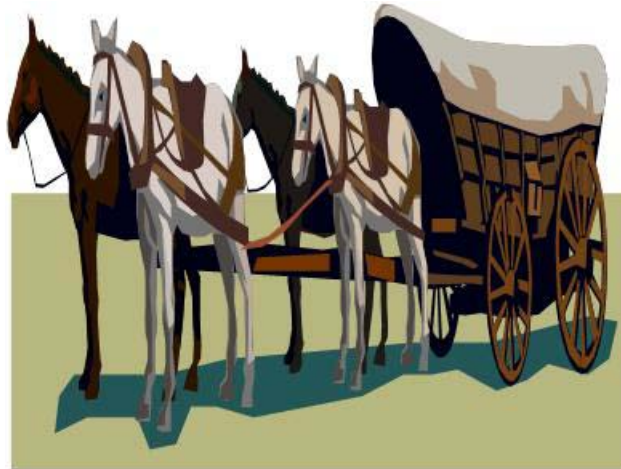
Permitted Facilities

- Application submission:
 - \$2,000 for one facility \$4,000 for both
 - Location not in 100-year Flood Plain
- Operating Permit
 - ❖ The facility must obtain an operating permit from the state of Florida.
- Permit Conditions
 - ❖ These govern the parameters by which the facility operates.



Material Transport to the Facility

- Materials transported to the facility by a variety of haulers.
 - Facility transporters
 - Contracted transporters
 - Secondary transporters





Facility Operations

- Staging areas
 - Loading /Unloading bays
 - Storage areas
 - Pre-Process
 - Post-Process
 - HW Storage
 - UW Storage
 - Automated processing areas
 - Manual processing areas
 - Retort Room
 - Transfer Facilities
 - Other processes not directly associated with Hg Recovery or Reclamation operations



Loading Dock(s)

Loading /Unloading Areas

"The Docks"

- The facility may have various areas where materials are loaded for transport to other destination facilities , recycling, or disposal.
- The unloading of materials for processing.
- Be sure this area & activities are being used as permitted.





Storage Areas

Pre-process storage areas

- Areas where materials are stored once unloaded, before transport to another facility or processing at the facility
- These include;
 - Hazardous Waste Storage Areas
 - Universal Waste Storage Areas; Batteries, Lamps...etc
 - Electronic Waste Storage Areas
 - Container and Supplies Storage Areas





Storage Continued

Pre-process Storage Areas may have containers and materials that have been processed by automated and/or manual means before being sent for retort.



Post-Process Storage Areas:

These areas will contain materials from the retort process. Things found here are Post process retort powder, metal end caps, and glass. Samples of these materials are taken and tested to ensure that these materials are not “hot” for mercury before being sent for recycling /disposal.





Manual Processing Areas

- This area is for pre-automated processing. At this particular facility HID lamps and certain fluorescent lamps are manually separated from the ceramic/metal base before being sent through the automated process.



- For the long tube-like lamps processing can be as simple as removing plastic sheaths or removing duct tape.





Automated Process Areas

- These areas/machines are usually self-contained with minimal human input.
- These areas are for the preparation of the materials (Lamps) for processing through recovery and reclamation process.





Retort Room

The Retort Room is where the process of mercury is separated from the phosphor powder, glass,

1. The materials are heated to a specific temperature where the mercury evaporates.
2. The gaseous mercury is then condensed and decanted into a container.
3. The condensate is containerized and transported by a registered transporter for proper disposal.





Transfer Facilities

Depending on the facility it may have an associated Transfer Area.

- Universal Waste Transfer Areas have a 10-day hold limit .
- Hazardous waste transfer areas have a the same 10-day limit.
- The facility located in the NWD has both a hazardous waste transfer area and universal waste transfer area.
- Check to make sure that what is listed on manifest is what is on the trucks in the transfer area
- Ensure records accurately reflect time of storage and contents.
- Visually verify that site conditions match records.





Other activities that may be associated with these facilities

- Hazardous Waste Transfer Facility
- Universal Waste battery storage
- Electronic (E-Waste storage)
- Transporting of universal wastes



Records

- Sample Analysis for post retort materials
- Alternative Management Plan
- Waste manifests
- Training
- Weekly inspections: Storage Areas and Transfer Facilities
- Contingency Plan



Questions?

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