



## **Standard Operating Procedure for Universal Waste Collection**

### **Purpose**

To ensure that universal waste: fluorescent and high intensity discharge (HID)<sup>1</sup> lamps, batteries<sup>2</sup> and ballasts<sup>3</sup> are handled safely and in compliance with State of New Hampshire DES, Federal EPA and OSHA regulations.

### **Scope**

This SOP applies to all people who change, handle and/or transport any universal waste for recycling/ disposal at Dartmouth College.

### **Responsibility**

The following roles and responsibilities apply:

- Custodial Services Director - Direct responsibility for management of the Universal Waste Program on campus including management and disposal of universal waste. Oversees the universal waste area in the McKenzie yard. Manages and sets up training for employees performing work under this plan.
- Solid Waste Truck Crew - Responsible for the collection, transportation, storage and preparation for shipment of all universal waste under this plan.

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<sup>1</sup> HID lamps may also contain small quantities of lead. Incandescent lamps may contain lead and cadmium. Mercury and other heavy metals may pose a hazard to human health and the environment when improperly managed. Mercury can accumulate in living tissue and cause adverse health effects.

<sup>2</sup> Batteries currently contain one or more of the following eight metals: mercury, cadmium, lead, zinc, manganese, nickel, silver and lithium. When disposed of in an unlined landfill, a battery can leach its toxic constituents and contaminate groundwater. If incinerated, some metals can volatilize, be released to the environment as inhalable emissions or as leachable elements in the ash.

<sup>3</sup> Ballasts although not considered "universal waste" is managed under this program due to their recyclable value.

- Custodial Staff/Electrical Shop/Building Maintenance Staff- Responsible for day to day removal, replacement and packaging for disposal of universal waste under this plan. This includes using proper packaging, labeling and placement for pick-up.
- Environmental Health and Safety - Responsible for emergency response services related to catastrophic spills or releases of Universal Waste. Responsible for periodic audit and review of this and all associated policies and procedures.
- All Employees - Responsible removal and proper placement into recycling containers.

### **Collection Areas**

- Main Accumulation Area: Located in the McKenzie yard. All universal waste must be disposed from this area within one (1) year of the accumulation start date. Universal Wastes must be picked up by an approved recycler in a timely fashion and no less than once (1) per year.
- Satellite Accumulation Areas: Contact FOM for current site locations.

*For the collection of lamps:*

### **Procedure**

#### **General Safety Requirements**

- Wear safety glasses/goggles when handling lamps. Glass from broken fluorescent tubes can travel great distances. Cut resistant leather or Kevlar gloves (NitraSafe) gloves can be worn when changing light bulbs.
- Whenever possible, the power supply to the fixture must be turned off.
- Appropriate, nonconductive, ladders and step stools must be used to reach fixtures. Never use desks, chairs, carts or other in appropriate means to reach an overhead fixture.
- Use care to avoid breaking the lamps. Ensure that all new and used lamps are protected against breakage.
- Never store old lamps in the same container as new ones.

## Supplies & Pick-up Requests

- *Supplies:* Contact your custodial supervisor for fluorescent fiber barrels: 4' and 8" containers.
- *Container Pick-ups:* Custodial Staff and Building Trades: As needed, place full containers at the **identified** trash recycling area or - **depending on weather** - place on the loading dock. No work order or call is required for a pick-up. Pickups are as needed.

## Satellite Accumulation Area – Collection & Storage Requirements

- Store used intact lamps in **either** the same box that new lamps were shipped in, another box of similar size or a fiberboard drum. Ensure containers are sturdy; without holes, rips or tears; and stable.
- Boxes must be labeled: “**Universal Waste – Lamps**”.

<b>UNIVERSAL WASTE-</b>	
<b>LAMP(S)</b>	
DESCRIPTION _____	
_____	
_____	
_____	
GENERATOR INFORMATION:	TELEPHONE _____
NAME _____	
ADDRESS _____	
CITY _____	STATE _____ ZIP _____
APPROVAL CODE _____	DOCUMENT NO. _____
<b>HANDLE WITH CARE!</b>	
<small>PRINTED BY: G.C LABEL 1-800-947-0990 PRINTED IN U.S.A. ITEM# CUSTOM UNIVERSAL WASTE PURPLE TYVEK</small>	

- Keep box closed except when adding contents.
- **DO NOT TAPE LAMPS TOGETHER.**
- Boxes should be stored upright.
- Metal halide, mercury vapor and High Intensity Discharge (HID) lamps should be wrapped or packaged individually.
- Do not pack too many lamps into a container; the pressure could lead to breakage.
- If you have containers that are not full – Fill the free space with paper or packing material to prevent movement of the lamps.
- Do not store boxes outside where they will be exposed to moisture.
- Do not store lamps in a metal drum because this can lead to breakage.
- If a lamp breaks, clean up the spill immediately. (*See spill procedure below.*)

## Main Accumulation Area Storage Requirements

*For boxes received into the McKenzie Universal Waste Storage Area:*

- Ensure the containers are labeled:

<b>UNIVERSAL WASTE- LAMP(S)</b>	
DESCRIPTION _____	
_____	
_____	
GENERATOR INFORMATION: _____	TELEPHONE _____
NAME _____	
ADDRESS _____	
CITY _____	STATE _____ ZIP _____
APPROVAL CODE _____ DOCUMENT NO. _____	
<b>HANDLE WITH CARE!</b>	
<small>PRINTED BY: G.C. LABEL 1-800-997-0960 PRINTED IN U.S.A. ITEM# CUSTOM UNIVERSAL WASTE PURPLE-TYVEK</small>	

- Enter “Date Received” on each box. (You must be able to demonstrate how long the lamps have been stored in this area.)
- Ensure all boxes are in good condition. If not, transfer to a sturdy box.
- Store boxes in the designated storage area – not outside.
- Do not over stack.
- Stacks should be no higher than four feet so lamps on the bottom are not crushed by the weight.
- Do not store lamps in a metal drum because this can lead to breakage.
- The storage area must be kept locked unless someone is actively adding or removing waste.
- Clean up spills promptly. (*See spill procedure below*)
- Keep the area clean of miscellaneous debris.

*For collection of batteries:*

## Procedure

### General Safety Requirements

- Heavy duty green nitrile gloves should be worn when handling batteries.
- Safety glasses must be worn when handling wet cell batteries.

### Supplies & Pick-up Requests

- *Supplies:* Contact your custodial supervisor for small battery collection containers.
- *Container Pick-ups:* Custodial Staff and Building Trades: As needed, place full containers at the **identified** trash recycling area or - **depending on weather** - place on the loading dock. No work order or call is required for a pick-up. Pickups are as needed.

### Satellite Accumulation Area – Collection & Storage Requirements

- Use designated pails labeled with the words “Universal Waste - Batteries”

<b>UNIVERSAL WASTE- BATTERY(IES)</b>	
DESCRIPTION _____ _____ _____	
GENERATOR INFORMATION: NAME _____	TELEPHONE _____
ADDRESS _____	
CITY _____	STATE _____ ZIP _____
APPROVAL CODE _____	DOCUMENT NO. _____
<b>HANDLE WITH CARE!</b>	

- Pails must be kept closed except when adding contents.

### Main Accumulation Area Storage Requirements

*For containers received into the McKenzie Universal Waste Storage Area:*

- Ensure all pails/drums are labeled:

<b>UNIVERSAL WASTE- BATTERY(IES)</b>	
DESCRIPTION _____	
_____	
_____	
_____	
GENERATOR INFORMATION: TELEPHONE _____	
NAME _____	
ADDRESS _____	
CITY _____	STATE _____ ZIP _____
APPROVAL CODE _____ DOCUMENT NO. _____	
<b>HANDLE WITH CARE!</b>	

- **Enter DATE RECEIVED** (*You must be able to demonstrate how long the batteries have been stored in this area.*)
- Keep containers closed except when adding contents.
- Store containers in the designated storage area – not outside.
- The storage area must be kept locked unless someone is actively adding or removing universal waste.
- For leaking batteries, contact EHS at 646-1762.

## Procedure

### General Safety Requirements

- Wear safety glasses/goggles/chemical resistant gloves (either heavy duty green nitrile or cut resistant Nitrasafe® ) when handling ballasts.
- The power supply to the fixture must be turned off.
- Appropriate, nonconductive, ladders and step stools must be used to reach fixtures. Never use desks, chairs, carts or other inappropriate means to reach an overhead fixture.

### Supplies & Pick-up Requests

- *Supplies:* Use a plastic clear bag or box for ballasts to be picked up.
- *Container Pick-ups:* Custodial Staff and Building Trades: As needed, place bag/box at the **identified** trash recycling area or - **depending on weather** - place on the loading dock. No work order or call is required for a pick-up. Pickups are as needed.

### **Satellite Accumulation Area – Collection & Storage Requirements**

*For simplicity— all ballasts collected will now be treated as if they contain PCB—No sorting is necessary.*

- Store ballasts in a clear plastic bag or box
- When ballasts are changed out, they must always be brought back to the nearest Universal Waste Collection site or the Universal Waste Storage area in the McKenzie yard.
- DO NOT LEAVE AT THE SITE.
- If major renovations are being done and all fixtures are being removed from a building, please contact the custodial supervisor for collection drums and instructions prior to the start of the project.

### **Main Accumulation Area Storage Requirements**

*For Ballasts received into the McKenzie Universal Waste Storage Area:*

- Remove ballasts from bags or boxes and place into drums labeled with:  
**Ballasts**
- **Ensure the drum is dated.** (You must be able to demonstrate how long the ballasts have been stored in this area.)
- Ensure all drums are in good condition
- Keep drums closed except when adding contents
- Store drums in the designated storage area – not outside.

## Spill Clean-Up Procedures:

### *Lamps*

#### **For breakage on a hard surface –**

- 1) Allow a few minutes for the phosphor powder in the lamps to settle before beginning clean-up activities.
- 2) Ventilate the room by closing all interior doors and vents, opening windows and any exterior doors in the room and leave the room (restrict access) for at least 15 minutes.
- 3) Remove all broken lamp pieces you can and **DO NOT VACUUM**.
  - ✓ Wear safety glasses and disposable gloves.
  - ✓ Carefully clean up the glass fragments and residue with a stiff paper or cardboard.
  - ✓ Pick up any remaining small pieces of glass and residue using tweezers and sticky tape, such as masking or duct tape.
  - ✓ Wipe the area clean with a damp paper towel, cloth or disposable wet wipe.
- 4) Place all remnants and cleanup materials (cardboard, gloves, tape, etc.) in a tightly sealed container or plastic bag.
- 5) Label the container “broken universal lamps for recycle”.
- 6) Put the container with the rest of the lamps for pick up for recycling.
- 7) Wash your hands.
- 8) Leave windows in the affected room open as long as practical (weather permitting).

#### **For breakage on carpet -**

Complete steps 1 through 6 above then:

- 1) If the rug is removable, take it outside, shake, and air out as long as practical.
- 2) If the rug is not removable, after the cleanup, you may use a vacuum equipped with a HEPA filter to vacuum the area where the lamp was broken, shut the door to the room or close off the area as much as possible and ventilate the room when vacuuming. Remove the vacuum bag when done cleaning the area, wipe vacuum with wet wipe and put the bag and/or vacuum debris, including cleaning materials, into a plastic bag, along with the rest of the broken lamp debris. Label the bag "broken



- universal lamps for recycle". Place bag with other recyclable waste for pick-up.
- 3) After vacuuming, keep window open and door closed for one to two hours.

### ***Batteries***

- Leaking batteries should be stored in structurally sound, closed containers
- Immediately contain and clean up all releases of from broken, leaking or damaged batteries.
- Place any broken or damaged batteries and any residues resulting from breakage or damage in a waste container and label "Universal Waste-Leaking Battery". Place out for pick-up with other universal waste.

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