

# Maintaining a Universal Waste Shed

This guide will cover what types of waste should and should not be stored in a Universal Waste shed, proper procedures for receiving and storing Universal Waste, how to clean up mercury spills and broken fluorescent lightbulbs, how to arrange a pickup of Universal Waste, and what resources are available from Reworld to aid in this process.

Universal Waste encompasses mercury-containing devices such as thermometers, thermostats, switches, barometers, blood pressure cuffs, fluorescent lamps, and button cell batteries. Rechargeable or lithium batteries are also considered Universal Waste, and these additional items may be collected in the Universal Waste Shed. On a case-by-case basis, as funds allow, until Extended Producer Responsibility or similar program is implemented, Reworld is covering the cost of lithium-ion and lithium primary battery recycling. This is for household and small tool sizes only. **See further clarification below on receiving batteries.**

Residents, non-profits, schools, municipal departments, and even small businesses should all have access to the shed. Methods to get the word out can include putting up posters in town buildings and other public places and posting digital posters and information on a website. The goal is to make the information as easy to find as possible. Use every opportunity to let people know they should not throw a mercury-containing device in the trash.

In partnership with Reworld, CET hosts sharable content and printable posters to help you get the word out about safe mercury disposal at [www.cetonline.org/programs/reworld](http://www.cetonline.org/programs/reworld). CET also has pre-printed posters and rack cards that are available upon request for municipal offices, welcome packets, and fairs/events.

CET created a Universal Waste Shed maintenance video which contains useful information (scan the QR code).



## An Important Note About Liquid Mercury



Universal waste sheds are for the collection of mercury-containing devices, **NOT** the collection of liquid mercury. This is a hazardous material, and residents should not transport it themselves. Residents may be able to receive a no-cost pickup of elemental mercury directly from their homes from Complete Recycling Solutions/Terracycle at 1-866-277-9797 x705. CRS will confirm the pickup request with CET/ Reworld based on quantity and location.

However, sometimes elemental mercury does incidentally arrive. Put gloves on and place the container in double containment using plastic bags and rigid plastic containers. Label as Elemental Mercury. Call Complete Recycling Solutions/TerraCycle for **immediate** pickup at 1-866-277-9797 x705.

You can find more information on the safe management of mercury on the MassDEP website:

**[www.mass.gov/guides/massdep-mercury-information](http://www.mass.gov/guides/massdep-mercury-information)**

For non-emergency questions:

866-9MERCURY (866-963-7287)

[mercury.programs@mass.gov](mailto:mercury.programs@mass.gov)

For assistance during a mercury spill of more than 2 tablespoons:

Call MassDEP's 24/7 Spill Hotline: 888-304-1133

**Or**

Call your local fire department at 911

**And**

Notify your Health Department

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(Record local health department phone number here)

## Materials to Have on Hand

- Disposable gloves & safety glasses
- Packaging tape - double sided preferred for spill area containment
- Markers
- Universal Waste labels/or can write information directly on containers
- Zip seal bags-for double containing mercury devices or spill material
- Index cards or stiff paper-for cleaning up broken fluorescent bulb glass and powder
- Extra rigid plastic container with lid (If no DOT container is available, use kitty litter tub, yogurt container, etc.)
- Universal Waste spill kit (available by request from Reworld/CET or through safety supply companies)

## Universal Waste Regulations

The shed must be maintained in accordance with MassDEP Universal Waste Regulations. Sheds are subject to regulatory inspection.

30.1000: STANDARDS FOR UNIVERSAL WASTE MANAGEMENT  
(page 436-453) (scan the QR code).

- Your Universal Waste shed should be maintained so that it is always dry and secure. It should also have a locked door or be behind a locked gate when not staffed to prevent illegal dumping.



- Universal Waste can be consolidated from other satellite locations such as schools, municipal buildings, non-profits, and small businesses.
- As a small quantity generator, do not keep more than 5000 kg of mercury or mercury-containing devices on site at any one time, which equates to 11,500 pounds, or approximately 11,500 lightbulbs.
- Universal Waste may not be stored for more than one year from the first date of accumulation. Be sure to schedule a no-cost pick-up at least once a year.
- The shed needs to be labeled clearly with Universal Waste Collection Area. The sign may also show what should and should not be included. People often confuse Hazardous Waste and Universal Waste. Hazardous Waste—items such as chemicals or paint—should not be dropped off in a Universal Waste Shed.
  - Universal Waste includes:
    - Fluorescent Lightbulbs
    - Mercury Containing Devices- thermometers, thermostats, batteries, blood pressure units, barometers, switches, old bilge pump units, certain antiques (pendulum clocks, fishing lures, mirrors)
- To minimize spills and accidental breakage, all boxes, drums, or pails should have a lid, and the lid should remain closed when not in use.
- Containers should be positioned in a way that they will not fall over and smash the contents.
  - Clearly label containers “Universal Waste” then the type of material inside i.e. “Used Thermostats”, “Waste Fluorescent Bulbs”, etc. and the Accumulation Start Date. Pre-printed labels can be used, or the information can be written directly on the containers.



Check the shed and its contents boxes regularly to see if they have gotten wet or damaged. If helpful, start and maintain a weekly log to track these inspections. Some example inspection logs can be found below:

- CET self-inspection sheet (See appendix)
- New Hampshire Dept. Of Environmental Services (scan the lefthand QR code)
- Loureiro via Connecticut Dept. Of Energy and Environmental Protection (scan the righthand QR code)



## Packaging for the Universal Waste Shed

### Bulbs & Lamps

All Bulbs and Lamps should be stored in cardboard boxes or tall fiber drums. Boxes should be labeled with a Universal Waste label. If you need to start a new container, please use a pre-printed label or write the information directly on the container.

Bulb/Lamp Type	Storage Container
8 ft fluorescent tubes	8 ft long rectangular box
4ft fluorescent tubes	tall fiber drums
1ft, 2ft fluorescent tubes	2ft cardboard box
fluorescent u-bulbs, circular bulbs	2ft cardboard box
single bulbs	2ft cardboard box

Residents should remove all bulbs and lamps from the packaging. LED lamps are not accepted for recycling and should be disposed of in the regular household trash.

# Batteries

Battery Type	Common Examples
Nickel-Cadmium (Ni-Cd)	Cordless tools, emergency lighting, some single use batteries
Nickel Metal Hydride (Ni-MH)	Cordless home phones, cordless tools
Lithium Ion	Cell phones, laptops, some single use batteries
Sealed Lead Acid	ATVs, motorcycle (but not car batteries), children's power toys
Primary Batteries (buttons) can be mercury containing hearing aid style or lithium primary nickel shaped	Hearing aids, key fobs, cameras

Batteries should be stored in 5-gallon plastic buckets with or without lids. Button batteries can be stored in smaller plastic containers with lids. If you need to start a new container, please label it with "Universal Waste - Waste [Type of Battery] - [Accumulation Start Date]" or a label.

When possible, please accept only the battery not the device. Some devices have embedded batteries though. Put the device in the appropriate bucket.

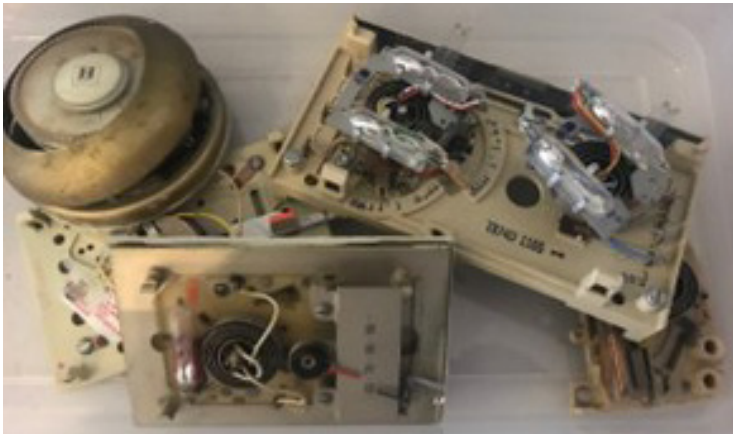
Residents should not leave single-use alkaline batteries. Alkaline batteries are non-hazardous and can be disposed of in the regular household trash.

Car Batteries are accepted separately.

## Mercury-Containing Devices

Mercury-containing devices must be stored in a labeled plastic container or 5-gallon bucket with a tight-fitting lid. The bead of silver mercury will be clearly visible in the device.

Digital thermostats, smoke detectors (with a sealed battery) and carbon monoxide detectors do not contain mercury and can be disposed of in regular household trash.



Mercury-Containing Device	Common Examples
Thermostats	All non-digital thermostats
Fever thermometers	Older glass thermometers with visible bead of mercury
Barometers	Will have a mercury-filled tube

**PCB and non-PCB Ballasts- not part of the MSP collection program – for informational purposes only. CRS can accept ballasts.**

Ballasts should be removed from the metal housing and stored in a labeled 5-gallon bucket. Electronic ballasts can be treated as e-waste. PCB ballasts are labeled and must be kept separate and handled properly.

If the resident has the entire metal housing containing the ballast, they will need to remove the ballast for recycling. The whole unit is not accepted as Universal Waste.

## Receiving Items for the Universal Waste Shed

### Bulbs & Lamps

- Containers for straight four-, six- or eight-foot bulbs can be boxes from recycling vendor, original boxes the light bulbs came in, or large fiber drums for holding many bulbs.
- If bulbs are taped, do not try to peel the tape off because that can break the bulbs. If you have scissors, you can cut the tape and separate the bulbs.
- The 2' boxes can be used for 1-2' straight bulb, circline and U-shaped bulbs.
- Compact fluorescent lamps (CFL) can be put in their own 2' box. CFL's are identified by a swirly bulb and the symbol for mercury Hg. Some bulbs are designed with the swirl inside an outer glass covering.
- Metal Halide- High Intensity Discharge- and Neon bulbs also contain mercury. This identification chart can be helpful in sorting bulbs. Incandescent and LED bulbs do not contain mercury.
- Make sure the containers are labeled with "Universal Waste", what the contents are, and the accumulation start date. Reminder: Universal Waste has to be picked up within 12 months of the date the first bulb was placed in the container. You do not need a pre-printed label; you can write information directly on the box.
- Secure boxes so they cannot fall over.
  - Racks or shelves can be bought or built to hold the boxes or fiber drums at an angle, so residents and staff can load the bulbs easily and neatly.
- Remember boxes need to be able to close easily after the bulbs have been added.
- Two-foot boxes work well for receiving U-style, circline or short straight bulbs with or without cardboard packaging.
- Smaller bulbs can be collected in two-foot boxes or five-gallon pails. Compact fluorescent light bulbs (typically have a swirl shape, but may just have the swirl inside), metal halide, and mercury vapor lamps are all types that should be collected.
- All bulbs should be placed gently into the boxes so as not to break them.

### Light Bulb Recycling Guide

There are many light bulb options on the market today. Only certain ones are recyclable. The following light bulbs contain mercury, and should be recycled.

#### Compact Fluorescent Lamps (CFLs)



These come in many shapes and some have covers to mimic traditional bulbs.

#### Fluorescent Straight Tubes



These come in all lengths up to 8ft. Ones with green tips need to be recycled as well.

#### Circline Fluorescent Lamps



These lamps are in the shape of a circle and are commonly used in ceiling fixtures.

#### U-Bend Fluorescent Lamps



These lamps are in the shape of a U and can be up to two feet in length.

#### Metal Halide Lamps



Mainly commercial uses.

#### Mercury Vapor Lamps



Mainly commercial uses.

The following light bulbs **should not** be recycled. They do not contain mercury.

#### Incandescent Bulbs



These traditional screw-in bulbs should be disposed of as trash. Do not include in any recycling program.

#### Halogen Lamps



This form of incandescent bulb should be disposed of as trash. Do not include in any recycling program.

#### LED Lamps



These are the new highly energy efficient bulbs being used more and more. Check the original packaging for recycling options.



Difficult-to-Manage  
Items Booklet

# Batteries

As shown in the rightside graphic, lithium primary, lithium-ion rechargeable, other rechargeables, and button batteries are all considered universal waste. However, not all these batteries contain mercury.

## Button Cell Batteries:

### *Hearing aid style*

These batteries that may still contain mercury should be collected separately from other types of batteries.

### *Lithium-primary (nickel size and shape)*

These batteries are commonly used in digital devices like thermometers, watches, and cameras. They are flammable if damaged, defective, or recalled and so should be treated carefully.



Button cell batteries should be taped or put in bags, so that the terminals don't touch each other. They should be labeled "Universal Waste-Button Cell Batteries" with the accumulation start date.

## Lithium Primary and Lithium-Ion Household Batteries in Household Shape:

Tape battery ends or place in individual bags before putting in designated battery pail. Alkaline batteries are not hazardous. CRS can recycle them for a fee, but they can also be discarded in the trash. However, alkaline batteries can look just like rechargeable ni-cad or lithium batteries which can cause fires and need to be kept out of the trash, so please sort carefully.

**Damaged, Defective, Recalled, or Leaking Batteries:** Please see appendix for handling, packing, and notification procedures.

## Mercury-Containing Devices

- CRS can supply collection buckets with secure screw top lids for containment and collection.
- If you have a larger or heavier device or if elemental mercury arrives, please put it in a separate bucket, label it, close the lid, and call CRS for pickup. Since elemental mercury is a hazardous waste, the labeling is different.
- Always handle mercury-containing devices with care and place them gently into containment.

## BATTERY DISPOSAL GUIDE:

Batteries can cause **fires!** Here's how to handle and dispose of each type.  
*Check with your municipality for their specific collection options.*

### BRING TO RETAIL AND/OR MUNICIPAL BATTERY COLLECTION

*Put tape on battery terminals and bring to local retailer or municipal collection site*



**Lithium-Ion Rechargeable:** These batteries are typically found in cell phones, laptops, and small power tools. If damaged, they can be extremely flammable.

**Rechargeable AA, AAA, C, D, 9V (Ni-Cad): Do not put rechargeable batteries in the trash or recycling.** They may contain heavy metals that pose risks to human health and the environment.

**Button:** These batteries are about 1/3" across. Commonly found in hearing aids. May contain mercury; bring to a municipal collection site.

### HANDLE AS HOUSEHOLD HAZARDOUS WASTE

*Call your municipality or local recycling center for household hazardous waste collection information*



**Lithium-Primary:** These batteries come in a variety of household sizes, including flat nickel-shaped batteries that may not be labeled as lithium. **Do not put in trash or recycling** as they can be flammable if damaged or defective. **Put tape on terminals** and handle with care.

**Lead Acid Automotive or Sealed:** These batteries are commonly found in vehicles, lawnmowers, and some tools. They may be accepted at transfer stations or exchanged with new purchases. Leaking lead acid batteries are considered hazardous waste.

### NON-HAZARDOUS BATTERIES

*These battery types no longer contain mercury and can be disposed in regular trash*



**Traditional Everyday (AA, AAA, C, D, 9V):** Single use, alkaline batteries.



- Label the bucket as Universal Waste- Waste Mercury Containing Devices and the accumulation start date. Make sure the bucket has a secure lid and place it in a safe area where it won't get knocked over and spill the contents.
- If you receive other mercury-containing devices such as blood pressure cuffs, monometers, barometers, or switches, they are typically very heavy, so do not place them in the same bin as the delicate thermometers. Instead, use a separate bucket labeled "Mercury Containing Products". Put the devices in secondary containment if possible.
- If you receive a larger device, that won't fit in a 5-gallon bucket. Contain the device in a large plastic bag with tape or a zip tie to keep it closed securely. Label the bag and call Complete Recycling Solutions/Terracycle for **immediate** pickup at 1-866-277-9797 x705.

If incidental elemental mercury does arrive at your shed. Place it in secondary containment, label it and call Complete Recycling Solutions/Terracycle for **immediate** pickup at 1-866-277-9797 x705.

## EPA Spill & Clean Up Guidance

### Bulbs & Lamps

#### Before Cleanup

- Have people and pets leave the room.
- Air out the room for 5-10 minutes by opening a window or door to the outdoor environment.
- Shut off the central forced air heating/air-conditioning system, if you have one.
- Collect materials needed to clean up broken bulb:
  - Stiff paper or cardboard;
  - Sticky tape;
  - Damp paper towels or disposable wet wipes (for hard surfaces); and
  - A glass jar with a metal lid or a sealable plastic bag.



More Information

#### During Cleanup

- **DO NOT VACUUM.** Vacuuming is not recommended unless broken glass remains after all other cleanup steps have been taken. Vacuuming could spread mercury-containing powder or mercury vapor.
- Be thorough in collecting broken glass and visible powder. Scoop up glass fragments and powder using stiff paper or cardboard. Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder. Place the used tape in the glass jar or plastic bag. See the detailed cleanup instructions for more information, and for differences in cleaning up hard surfaces versus carpeting or rugs.
- Place cleanup materials in a sealable container.

#### After Cleanup

- Promptly place all bulb debris and cleanup materials, including vacuum cleaner bags, outdoors in a trash container or protected area until materials can be disposed of. Avoid leaving any bulb fragments or cleanup materials indoors.
- Label the container: Universal Waste - Broken Fluorescent Bulb - Accumulation Start Date and have CRS pick up.
- If practical, continue to air out the room where the bulb was broken and leave the heating/air conditioning system shut off for several hours.

# Thermometers - Spill Kit instructions in appendix

## What NEVER to Do After a Mercury Spill

- Never use a vacuum cleaner to clean up mercury. The vacuum will put mercury into the air and increase exposure.
- Never use a broom to clean up mercury. It will break the mercury into smaller droplets and spread them.
- Never pour mercury down a drain. It may lodge in the plumbing and cause future problems during plumbing repairs. If discharged, it can cause pollution of the septic tank or sewage treatment plant.
- Never walk around if your shoes might be contaminated with mercury. Contaminated clothing can also spread mercury around.

## Before Cleanup

***NOTE: These instructions also apply to spills from other sources if the amount spilled is less than or similar to the amount in a thermometer. If your spill is greater than the amount in a thermometer, then read the "EPA Guidance on Larger Spills."***

- Have everyone else leave the area; don't let anyone walk through the mercury on their way out. Make sure all pets are removed from the area. Open all windows and doors to the outside; shut all doors to other parts of the house.
- DO NOT allow children to help you clean up the spill.
- Mercury can be cleaned up easily from the following surfaces: wood, linoleum, tile and any similarly smooth surfaces.
- If a spill occurs on carpet, curtains, upholstery or other absorbent surfaces, these contaminated items should be thrown away in accordance with the disposal means outlined below. Only cut and remove the affected portion of the contaminated carpet for disposal.

## During Cleanup

- Put on gloves.
- If there are any broken pieces of glass or sharp objects, pick them up with care. Place all broken objects on a paper towel. Fold the paper towel and place it in a zip locking bag. Secure the bag and label it as directed by your local health or fire department.
- Locate visible mercury beads. Use a squeegee or cardboard to gather mercury beads into small mercury balls. Use slow sweeping motions to keep mercury from becoming uncontrollable. Take a flashlight, hold it at a low angle close to the floor in a darkened room and look for additional glistening beads of mercury that may be sticking to the surface or in small, cracked areas of the surface.

***Note: Mercury can move surprising distances on hard-flat surfaces, so be sure to inspect the entire room, including any cracks in the floor, when searching.***

- Use the eyedropper to collect or draw up the mercury beads. Slowly and carefully squeeze mercury onto a damp paper towel. Alternatively, use two pieces of cardboard paper to roll the mercury beads onto the paper towel or into the bag. Place the paper towel in a zip locking bag and secure. Make sure to label the bag as directed by your local health or fire department.
- After you remove larger beads, put shaving cream on top of small paint brush and gently "dot" the affected area to pick up smaller hard-to-see beads. Alternatively, use sticky tape, such as duct tape, to pick up any remaining small glass fragments (peel the tape very slowly from the floor to keep the mercury beads stuck to the tape). Place the paint brush or duct tape in a zip locking bag and secure. Make sure to label the bag as directed by your local health or fire department.

- **OPTIONAL STEP:**

- It is **OPTIONAL** to use commercially available powdered sulfur to absorb the beads that are too small to see. The sulfur does two things:
- It makes the mercury easier to see since there may be a color change from yellow to brown; and
- It binds the mercury so that it can be easily removed and suppresses the vapor of any missing mercury.

Where to get powdered sulfur? It is sometimes found in the gardening departments at hardware stores, near the fertilizer, or with garden pesticides and fungicides. Pharmacists may also have it.

***Note: Powdered sulfur may stain fabrics a dark color. When using powdered sulfur, do not breathe in the powder as it can be moderately toxic. Additionally, users should read and understand product information before use.***

- Place all materials used with the cleanup, including gloves, in a trash bag. Place all mercury beads and objects into the containment bag. Place the trash bag outside in a secured area and label it as directed by your local health or fire department.
- Label the container "Hazardous Waste - broken mercury containing device - [Accumulation Start Date.]" Contact CRS for pick up information. Reworld may be able to cover pick up costs on a case-by-case basis but the MSP program is preventative and covers intact mercury devices.



**ATSDR Public Health Statement on Mercury**

immediately. View information on health effects related to exposures to vapors from metallic mercury. For additional information on health effects, the Agency for Toxic Substances and Disease Registry (ATSDR) provides a Public Health Statement on Mercury that also presents information on health effects related to exposures to vapors from metallic mercury.

#### **After Cleanup**

- Remember to keep the area well-ventilated to the outside (i.e., windows open and fans in exterior windows running) for at least 24 hours after your successful cleanup. You may want to request the services of a contractor who has monitoring equipment to screen for mercury vapors. Consult your local environmental or health agency to inquire about contractors in your area.
- Continue to keep pets and children out of the cleanup area.
- If sickness occurs, seek medical attention



**Information on Health Effects of Exposure to Metallic Mercury Vapors**



**More Information**

## **Larger Mercury Spills**

### **What NEVER to Do After a Mercury Spill**

- Never use a vacuum cleaner to clean up mercury. The vacuum will put mercury into the air and increase exposure.
- Never use a broom to clean up mercury. It will break the mercury into smaller droplets and spread them.

- Never pour mercury down a drain. It may lodge in the plumbing and cause future problems during plumbing repairs. If discharged, it can cause pollution of the septic tank or sewage treatment plant.
- Never walk around if your shoes might be contaminated with mercury.

### Cleanup Instructions

- Have everyone else leave the area; don't let anyone walk through the mercury on their way out.
- Open all windows and doors to the outside.
- Turn down the temperature.
- Shut all doors to other parts of the house and leave the area.
- **Do not vacuum.**
- **Call your local health department as soon as possible. If it is after-hours, please call your local fire department. If you have questions about potential health effects, you can call your physician, or your local poison control center at (800) 222-1222.**



National Response Center

### Spills of One Pound or More (i.e., if it Looks like Two Tablespoons or More)

Any time one pound or more of mercury is released to the environment, it is mandatory to call the National Response Center (NRC). The NRC hotline operates 24 hours a day, 7 days a week. Call (800) 424-8802. Note that because mercury is heavy, only two tablespoons of mercury weigh about one pound.

For assistance during a mercury spill of more than 2 tablespoons:

Call MassDEP's 24/7 Spill Hotline: 888-304-1133

Or

Call your local fire department at 911

And

Notify your Health Department

(Record local health department phone number here)



More Information

## Items to Reject or Redirect

Try to give alternative options or they will likely end up in the trash.

- Household hazardous waste
- Alkaline batteries
- Incandescent lightbulbs
- Sharps, needles, and medications
- E-Cigarettes
- Smoke detectors
- LED, incandescent and halogen light bulbs
- Electronics such as TV's/CRT's, computers, laptops, or flat screen monitors.

# Pick Up Procedures

Other than the large limit for small quantity generator Universal Waste storage or the date limit of 1 year, you may decide what works best for your municipality for pickup. To optimize transportation costs, Reworld suggests calling CRS for a pickup when there are 10 or more boxes of bulbs and a couple of full buckets of mercury devices.

Complete Recycling Solutions: 1-866-277-9797 x705

Be prepared with:

- The street address and town where the pickup is needed.
- How many full containers and what type (to be sure there's room on the truck)
- How many replacement containers are being requested
- Any special instructions such as days of the week to avoid or calling ahead for access.

CRS truck drivers charge Reworld for packaging time starting after 30 minutes. Your municipality can be prepared for the pickup by making sure the bulb boxes are closed and taped for transport. Reworld will cover 1 hour of packing time. After that the packing time will be the responsibility of the municipality.

If your municipality has items to ship with CRS that are not covered under the MSP program, CRS will split the invoice and charge the municipality appropriately. Some examples may include Cathode Ray Tubes, electronics, ballasts, rechargeable (non-lithium) batteries, and other TerraCycle accepted items.

For Questions about receiving items, packing items, shipping items, Jeff Cabral from Complete Recycling Solutions/TerraCycle has offered his cell phone number: 617-513-9867.

**For general program questions and support with the above questions. Please call Heather Billings at CET 508-479-3713.**

