Universal Waste Safety Handling Training

Slide 1
Welcome to the Universal Waste Safe Handling Training provided to Local Conservation Corps staff and Corpsmembers to ensure the safe handling and environmental compliance of work activities involving Universal Waste.

This is a required training by the California Department of Toxic Substance Control. Otherwise known as DTSC.

All persons who are or will work in the E-waste collection program must complete this training.

The first six slides are an introduction and background information.

I will let you know when the required training begins.

You may pause the presentation at any time, or go back to repeat anything you may have missed.

Slide 2
Introduction
Employees and Corpsmembers that manage handle, move, transport, store, and label or perform any activities associated with Universal Waste are required by law to be trained on the proper

- Handling
- Storage
- Labeling and
- Recycling of Universal Waste

Universal Waste cannot be tossed in the trash; It is the law which is California Code of Regulations CCR, Title 22, Division 4.5.

This training does not lead to a certification; it is simply the required safety training under certain state and federal regulations.

Corpsmembers should never present themselves or list on their resume that they are certified for Universal Waste safety as no such certification exist.

Rather, it can be mentioned that you received the California Department of Toxic Substance Control required Universal Waste Safety Training.

This training is for all local Corps staff and Corpsmembers that will be involved with the E- Waste Collection program.

Slide 3
The topics to be covered

- Overview of the different types of waste
- Defining Universal Waste
- Who is a Universal Waste handler?
- What are Universal Waste?
- What are the types of Universal Waste regulated in California?
- Health and Environmental Hazards of Universal Waste.
- Legal requirements for labeling, storage and on site accumulation of Universal Waste
- How to respond to Universal Waste emergencies.

Slide 4
General overview of the various types of waste

This is general overview to show you where Universal Waste is categorized with all other types of waste.

Municipal solid waste (MSW) - Many of you are already involved with municipal solid waste, because it involves households, multifamily dwellings, or small businesses and includes recycling, as well as organic or green waste and landfill waste.

Commercial waste - is a sub category of municipal solid waste, which is waste coming from businesses, schools and large apartment complexes.

Agricultural waste - Is a sub category under industrial or commercial waste. Which obviously comes from crops and farming.

Construction and Demolition waste - which is otherwise known as C&D, and is a sub category under MSW

Slide 5
General overview of the various types of waste (cont.)

Finally then is Hazardous Waste – It is category for all waste regulated as hazardous and ranges from extremely hazardous, such as nuclear waste to the least toxic, such as Universal Waste, which is what we're covering in this training.

A couple more categories are Bio Medical, or infectious waste, otherwise known as biohazard, which is a sub category under hazardous waste; and Industrial waste, which can also be hazardous waste from manufacturing, and or from raw material processing, such as mining and the like.

This is a brief overview of the various categories of waste so you get an idea where Universal Waste is found in the waste hierarchy.

Slide 6
Universal Waste defined
It is kind of an unusual term, but it is a general descriptive term used to describe waste that are generated by a large diverse population i.e. home, schools, business, manufacturing, basically everyone.

Actually, in all of those categories I mentioned above, they all may have Universal Waste and it involves businesses as well as households that generate Universal Waste.

Although Universal Waste is listed in the hazardous waste category, it is the least toxic of all waste in the category of hazardous waste, and therefore has reduced requirements (or regulations) for handling.

This term is intended to be broad so that a wider range of waste may be managed under the reduced requirements of Universal Waste regulations. In fact, there are seven categories of Universal Waste and we will cover each of them here.

Universal Waste regulation is intended to promote recycling as well as the proper disposal of this waste if recycling is not a viable option by easing certain regulatory requirements.

What that means is if a City or County is looking at ways to dispose of items that fall under the Universal Waste category, there is fewer regulations, and less requirements for disposing of Universal Waste. As opposed to the more toxic hazardous waste which is required to be manifested and tracked since it is usually more toxic. Universal waste is also less expensive to dispose of then manifested hazardous waste.

Slide 7
Who is a Universal Waste handler?

From this point forward begins the required DTSC training. Feel free to take any notes that you wish throughout the remainder of this presentation.

A Universal Waste Handler may be:

1. A person, an example is, a household or business who generates Universal Waste, but does not accept Universal Waste from others.

2. A person or business who accepts and accumulates Universal Waste generated by others at their facility. Such as Local Conservation Corps.
   So all the Corps fall into this number 2 category. You collect, accept and accumulate Universal Waste generated from others from businesses, schools, households, or wherever you are doing a collections.

3. A person or business who accepts Universal Waste generated by others and conducts certain treatment and recycling activities allowed by the Universal Waste handler regulations.

These are E waste recyclers where your Local Conservation Corps is going to send all the E waste that they collect.

Slide 8
Potential Universal Waste Handlers

Potential Universal Waste Handler at your facility include:

- Corpsmembers
- Supervisors and staff
- Maintenance workers
- Custodians
- Facility manager

As we go through the remaining slides, you will understand why I have listed Maintenance workers, Custodians and Facility managers as people who may also handle Universal Waste at your facility other than just Corpsmembers, supervisors and staff.

Slide 9
What are Universal Waste?

- Universal Waste are hazardous waste that are widely generated by households and many different types of businesses.

- Universal Waste includes old style televisions and monitors, flat panel monitors and televisions, computers and other electronic devices, as well as used batteries, fluorescent lamps, mercury thermostats and devices, and non-empty aerosol cans.

- Universal Waste Regulations are codified in other words, they are put into the regulations, and in this case, they are both federal and state regulations.

    - The Federal is 40 CFR 273

    - Chapter 22, California Code of Regulations 66273 (State of California)

Slide 10
What are Universal Waste?

Also under the California hazardous waste regulations is:

- California Code of Regulations (CCR) 66261.9

- And the Health and Safety Code (HSC), 25201.16

These regulations identify the seven categories of hazardous waste that can be managed as Universal Waste.

Although your facility may only be collecting E waste as an approved Universal Waste handler, it is necessary that you receive the training on all seven the Universal Waste categories.

As you will see as we go through the training, it is not just a matter of only collecting Universal Waste, but which of the Universal Waste categories may be used on site at your facility.

Any unwanted item that falls within one of the seven categories must be handled, transported and recycled following the requirements as set forth in the California Universal Waste Regulations.

Slide 11
Seven Categories of Universal Waste #1

Electronic devices:

- CRT monitors, which stands for Cathode Ray tube. Shown in the picture in the lower right on the video. These are the old style computer monitors and televisions

- LCD or liquid crystal displays also known as flat panel computer monitors and televisions and also includes laptop computers

- This category also includes computers, tower computers and all the other miscellaneous and mixed electronics, so anything that has a circuit board in it is considered as electronic waste

Slide 12
Seven Categories of Universal Waste #2

Category number two are used batteries

Batteries may show up in your E-waste collection program, but we will get into some of the safety on those in a moment. They include all rechargeable batteries such as nickel cadmium, nickel metal hydride, lithium Ion, and small button batteries, which you see in the picture on the right, the silver disc, or coin looking items, are button batteries.

This category also includes the non-rechargeable batteries, the standard alkaline batteries, and includes other batteries that exhibit a characterization of hazardous waste.

There are many different chemistries that are in batteries.
All batteries in California are banned from being placed in the trash to go to landfill.

You may also see batteries shown in the lower right hand side. These are rechargeable batteries for different power tools.

The battery pictured at the top might be in laptops.

Slide 13
Seven Categories of Universal Waste #3

<u>The third category is used lamps</u>

- Fluorescent tubes and bulbs
- Sodium vapor lamps
- High intensity discharge lamps
- Or other lamps that exhibit hazardous waste contained in them, such as Mercury and other such chemicals.

I mentioned that even though you are not collecting these, you most likely have some on your premises. As a collector of Universal Waste, there is specific handling procedures and storing them properly, which I will get into in a little bit.

Slide 14
Seven Categories of Universal Waste #4

<u>Category four is used mercury containing equipment</u>

- Mercury thermometers
- Thermostats
- Pressure or vacuum gauges
- Dental amalgams - many people do not realize that the old fillings that were put into our mouths has mercury in them. Those are the grey looking filling in your teeth
- Mercury switches
- Novelties such as jewelry, ornaments and footwear with Mercury added

Perhaps you are thinking….Wow! Footwear? Well, if you ever see those little kids' shoes where they have the flashing lights in them, the reason how those shoes can light up how they flash is
because there's a little mercury switch in there that goes back and forth as the child walks and it opens and closes (on and off). There is also a battery in the shoes to make them light up.

So those shoes technically should be handled as Universal Waste, because not only do they have Mercury in them, they also have batteries in them. It brings up the question; how does some of this stuff get on the market? So, if you have a dog at home that chews shoes make sure they do not get ahold of those shoes. If they chew them the

mercury and battery chemistry can be released into the environment in your house and cause exposer to your children, yourself and your dog

Slide 15
Seven Categories of Universal Waste #5

Category 5 is Bare Cathode Ray Tubes (CRTs)

These are the glass picture tubes, which were removed from old style TV's and computer monitors
Shown in the pictured here on the right.

Very rare that you are going to see one of these show up in your E waste collection program.
If you do get them and they are intact, which means the glass is not shattered they need to be placed in a heavy-duty plastic bag and tied closed. The bagged bare CRT is then placed in a cardboard box, and the box is taped closed. The box is labeled - BARE CRT

Bare CRTs should not just be put in with all the rest of your collected TVs because the bare CRT can become fractured or shattered along the way. If that happens you will have an emergency spill situation which then has to be taken care of following specific procedures that you will learn about in the next video: Universal Waste Emergency Spill Response training

Again, these are requirements under the DTSC regulations, and what your Corps must comply with as an Approved E waste or Universal Waste collector.

Slide 16
Seven Categories of Universal Waste #6

Category six is when the CRT is broken

The glass from a Cathode Ray Tube has fractured. The glass contains lead, and there is other chemicals inside the tube.

You may see these out along roadsides or fields, where somebody illegally dumped them and threw rocks through it or took shots at it, or whatever the case may be. A broken CRT can happen in your own warehouse. As you are stacking them on a pallet and the shrink-wrap was not secured enough and they fell over and shattered.

If that happens you now have an emergency spill situation, which then has to be taken care of following specific procedures that you will learn about in the next video: Universal Waste Emergency Spill Response training

Slide 17
Seven Categories of Universal Waste #7

The last category of Universal Waste is non-empty aerosol cans.

Aerosol cans have a whole bunch of different chemicals in them, which can be hazardous to your health. The regulations on non-empty aerosol cans are in the Health and Safety Code (HSC) Section, 25201.16.

The distinction here is that this concerns non-empty aerosol cans. If the can is empty, and depending on where you are located, it may be permissible to put empty aerosol cans in the municipal solid waste recycling carts, but you need to check and make sure that they are accepted in your cities recycling service.

Slide 18
Pause for optional discussion questions

Slide 19
Health and Environmental Hazards of Universal Waste

What are the things we concerned about?

Universal Waste contains toxic chemicals such as:

- Arsenic lead
- Cadmium
- Mercury
- Other heavy metals
- Flame retardants
- A host of other chemicals that you may find in aerosol cans.

If not handled safely, and properly recycled, these chemicals can do potential harm to an employee's health, the water we drink, air we breathe, and the surrounding environment.

What are toxic heavy metals?

It is any relatively dense metal or metalloid that is noted for its potential toxicity, especially in an environmental context.

The term has particular application to cadmium, mercury, lead and arsenic all of which appear in the World Health Organization's list of 10 chemicals of major public concern.

Other examples include manganese, chromium, cobalt, nickel, copper, zinc, selenium, silver, and antimony.

Some of those chemicals you are going to find in electronics such as copper and cadmium, and others.

Some are in the screens on the flat panel monitors and TVs such as cobalt.

When speaking about toxicity, how the materials have been handled, the concentration and exposure all play a part in how toxic they are.

An example is a higher concentration of material that a person is exposed to for an extended period may be more toxic or not. It depends on the chemical. It also depends on how the person was exposed.

As a general rule, the DTSC regulations for Universal Waste handling sets up specific requirements and guidelines on how to safely handle E-waste and the other six categories so as to minimize the risk of exposure.

The bottom line is; it is important to know regarding E-waste that as long as the devices are not broken and handled correctly, exposure may be minimal.

However, if you have a broken CRT or leaking battery, your exposure of course is greater, particularly if it is not handled or cleaned up properly.

Slide 19
Proper Storage of Universal Waste

Universal wastes must be contained, packaged and stored in a sturdy closed container. Example is a box with flaps, a bucket with lids that prevents from leakage or breakage.

The other example is 4-foot fluorescent lamps. They must be carefully placed in a box with packaging material that prevents breakage, that can be taped closed and stored in a manner that minimizes it from tipping over.

Slide 20
Proper Labeling and Marking of Universal Waste

It is required that all Universal Waste is properly labeled.

The Department of Toxic Substance Control does inspections of all approved Universal Waste handler facilities including Local Conservation Corps. They typically, under normal circumstances, will arrive unannounced.

One of the things they will look for is to make sure that you have your containers labeled properly.

All materials should be labeled in the following manager. Using the words Universal Waste and the items such as

- Universal Waste Batteries
- Universal Waste Mercury Containing Equipment

- Universal Waste Fluorescent lights.

Slide 21
Proper Labeling and Marking of Universal Waste (cont.)

The main topic of this training is about the electronic devices.

All containers and pallets in which electronic devices are contained shall be labeled or marked clearly with one of the following phrases.

- Universal Waste CRT monitors and televisions
- Universal Waste LCD's and laptops
- Universal Waste, Miscellaneous or mixed electronics

Desktop computers are in the miscellaneous or mixed electronics category, but if you get a lot of those you will want to stack them up on a pallet by themselves and label them. Everything else related to E-waste other than CRTs and LCDs (flat panel monitors, TVs and laptops) are in the miscellaneous or mixed electronics category. It is advised if you collect printers and especially those that have a built in scanner (glass platen) that you keep them on their own pallet or Gaylord box. The reason is that the toner can leak and get into everything; or the glass can shatter and not only contaminate all the other E-waste, but it will create the danger of persons receiving a laceration.

For the very large screen televisions, they need to have the sign on it even if it is by itself.

Everything must be labeled as far as electronic devices.

Important to note here that if the DTSC ever visits your facility to do an inspection, they’re going to look for these signs, and they're also going to look for the date that the first item was placed in the box or on the pallet.

At no time should any electronic devices to be placed directly onto the floor of your warehouse, even if you are sorting out the load. To sort the load, all electronics must always be put on a pallet or kept in a box. This is particularly true for CRTs if they should fall over on to the cement floor they have a higher chance of breaking.

Slide 22
Proper Labeling and Marking of Universal Waste (cont.)

The same thing goes with your aerosol cans they should be labeled:

- Universal Waste aerosol cans

Partially filled aerosol cans are usually stored in a steel drum with a lid on it. They are sent to a hazardous waste disposal site.

So again, you may not be involved in collecting Universal Waste beyond E waste, but your facility generates various types of Universal Waste in the seven categories.

As an Authorized collector of Universal Waste it is required to conduct the proper handling, storage and labeling and disposal of any self-generated Universal Waste.

Slide 23
Accumulation Time Limit of Universal Waste

Universal Waste is not to be stored on site for more than one year from the date the Universal Waste was first generated (or collected) and the accumulation began, or was received from another Universal Waste handler.

Example: At your facility, for burned out fluorescent bulbs, or non-empty aerosol cans, or batteries, that was used at the Corps are not to be stored for more than one year from when they first went into the collection, bucket or box.

The same is true of any E waste that you collected.

On the signs that are placed on all Universal Waste, write the date when the first item was placed on the pallet, or in the box, or however it is being accumulated. Then continue to add to it, and add to it until it gets full, or you are getting close to the one-year mark from the first date. At that point, it is then sent to recycling.

Slide 24
Universal Waste Labeling

An example of a preprinted label for Universal Waste.

- In this case, the label was designated for used batteries.
- The accumulation start date when the first batteries were placed in the container is written in
- Who the shipper is, or organization, and the address is also written in.

These type of labels are mostly used when sending out Universal Waste to Hazardous Waste disposal or recycler.

The signs used for your E waste can be large printed signs. Examples of those signs were sent to all Corps supervisors and staff. Copies can be printed and there is a place at the bottom to write the date.

Slide 25
Pause for optional discussion questions

Slide 26
Universal Waste Emergencies

As mentioned before there can be Universal Waste Emergencies such as:

- Leaking battery.
- Broken Fluorescent lamps
- Broken devises containing mercury
- Broken CRTs
- Leaking aerosol can.

Knowing how to respond to an emergency is an important part of this whole process. The next module will cover how to respond to the emergencies.

For now, we want to touch upon it just a little bit.

Slide 27
Universal Waste Emergencies

In the event of a Universal Waste emergency, (a broken CRT, broken lamps, leaking batteries etc.) Corpsmember's are to notify your supervisor immediately.

If you are a staff person that has been safety trained on how to respond to Universal Waste spillage or breakage, put on the appropriate safety gear and proceed with cleanup of the materials

The emergency procedure spill kit contains the step-by-step procedures how to conduct the cleanup.

It is suggested that only staff members do the cleanups because it is very detailed process with additional training. For Corpsmembers, the first thing you will do is secure the area so that people are not walking through any of the spilled materials or broken glass and then you inform your supervisor, or your crew leader who will then come and do the cleanup.

Slide 28
Pause for optional discussion questions

Slide 29
Review What You Have Learned

1. We are at the end of this training. To review quickly what we have covered so far.

2. By law, you required to go through the Universal Waste training If you manage handle, move, transport, or if you conduct other activities associated with Universal Waste (e.g. recycler)

3. We covered who are Universal Waste handlers, which is all Corps involved with the E- waste program, but it also includes other items that you may have which are generated on site; such as Fluorescent lights and batteries and other materials within the seven Universal Waste categories. The Local Conservation

Corps are not E-waste recyclers. Corps operate as collectors of E-waste and are designated as E-waste handlers

4. We defined Universal Waste as the subset of hazardous waste and that it is regulated waste.

5. We covered the seven categories of Universal Waste, which again includes
    - E-waste
    - Mercury containing bulbs
    - Mercury containing devices
    - Batteries
    - Broken CRT's, which is the glass
    - Bare CRT's that have been removed from the TV or monitor housing
    - Partially filled aerosol cans

We also mentioned which regulations concern Universal Waste

We also covered that all Universal Waste must be labeled, stored safely and cannot be accumulated on site for more than one year.

Any questions about Universal Waste or handling, please contact your supervisor.

Slide 30
Quiz

You will now receive the quiz. The purpose of the quiz to ensure you understood what you learned today and that you will be able to respond to Universal Waste emergencies such as broken Mercury containing lamps or devices and broken CRT monitors and TV's.

A passing score of 70% or greater on both the Universal Waste Safety Training Quiz, and the Universal Waste Emergency Response Quiz must be achieved to be able to work in the E-waste collection program.

The Universal Waste Safety Training is now completed and you may proceed with taking your quiz.

Thank you and good luck.