Regulatory Compliance Seminar at NEORSD
May 10, 2018

Hazardous Waste Training & RCRA Update
An Overview of Ohio’s Hazardous Waste Requirements

Timothy Killeen
Hazardous Waste Program
Division of Environmental Response and Revitalization

Timothy.Killeen@epa.ohio.gov
(614) 728-8961
NEDO
(330) 963-1200
What We Will Cover

• Hazardous Waste Basics
  – Waste Evaluation
  – Generator Categories
  – Generator Requirements

• Universal Waste, Ohio Specific Universal Waste rules and Used Oil Basics

• Solvent Contaminated Wipes

• Training Requirements

• Rulemaking Updates

• Resources
Resource Conservation and Recovery Act (RCRA)
Cradle-To-Grave Management
Waste Evaluation
The Cornerstone of RCRA

This Photo by Unknown Author is licensed under CC BY-NC-ND

Ohio Environmental Protection Agency
Don’t throw any waste into the dumpster unless you have confirmed and demonstrated that it is NOT a hazardous waste.
Hazardous Waste Evaluation

• Under Ohio’s laws, all wastes must be evaluated by the generator (OAC rule 3745-52-11)

• Generator – any person, by site, whose act or process produces or causes a hazardous waste to become subject to the hazardous waste rules.
What Is A Waste?

A waste is any material that will be discarded:

A "discarded material" is any material which is:

(a) Abandoned, as explained in paragraph (B) of this rule; or
(b) Recycled, as explained in paragraph (C) of this rule; or
(c) Considered inherently waste-like, as explained in paragraph (D) of this rule; or
(d) A military munition identified as a waste in rule 3745-266-202.
What Is A Waste?

Materials are waste if they are abandoned by being:

- Disposal
- Burning
- Storing or treating in lieu of discard
- Recycling
  - Used on the ground
  - Burned for energy
  - Speculatively accumulated
What Is A Waste?

(C) Materials are wastes if they are recycled:
   (1) Used in a manner constituting disposal
   (2) Burning for energy recovery
   (3) Reclaimed. Materials noted (*) in column 3 of the table in this rule are wastes when reclaimed
   – (D) Inherently waste-like materials
      • F020, F021, F022, F023, F026, and F028
What is Not a Waste?

• Commercial chemical products if reclaimed
• Excluded waste (51-04)
  – Wastes specifically defined in rule as not being a waste or a hazardous waste
• Household waste
• Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly owned treatment works
Hazardous Waste Evaluation

Tools you can use:

• Ohio hazardous waste rules
• Lab analysis of waste
• Generator knowledge
  – Information from vendor/supplier
  – Safety Data Sheet (SDS)
  – Process inputs

**Need to document your evaluation and keep on file**
Steps To Properly Evaluate Your Waste

1st – Determine if your waste is excluded

2nd – Determine if your waste is listed

3rd – Determine if your waste exhibits a characteristic
Excluded Wastes

- Excluded wastes are not subject to Ohio’s hazardous waste regulations

- Ohio Administrative Code (OAC) rule 3745-51-04

- Examples: Domestic sewage, NPDES discharge, nontern oil filters, shredded circuit boards, excluded scrap metal
Steps To Properly Evaluate Your Waste

• 2nd – Determine if your waste is listed
Listed Hazardous Wastes

• Non-specific waste sources (F listed)
  – OAC rule 3745-51-31

• Specific waste sources (K listed)
  – OAC rule 3745-51-32

• Discarded commercial chemical products (P and U listed)
  – OAC rule 3745-51-33
F Listed Hazardous Wastes

• Non-specific sources
  – Means HW can be generated from any type of manufacturing process

• Examples
  – Spent solvents
    • F001, F002, F003, F004, F005
  – Spent electroplating operation wastes
    • F006, F007, F008, F009
K Listed Hazardous Wastes

• Specific waste sources
  – Meaning waste is only generated from the specific type of industry and process given in the listing description

• Examples
  – Spent pot liners from primary aluminum-K088
  – Iron and steel production
    • Electric arc furnace dust - K061
    • Spent pickle liquor - K062
P or U Listed Hazardous Wastes

• Must be an *unused* commercial chemical product

• Examples of P listed hazardous wastes:
  – Copper cyanide – P029
  – Phosgene – P095

• Examples of U listed hazardous wastes:
  – Acetone – U002
  – Lindane shampoo – U129
Steps To Properly Evaluate Your Waste

• 3rd – Determine if your waste exhibits a characteristic
Characteristic Hazardous Wastes

• 4 categories of characteristic hazardous wastes:
  
  – Ignitable - OAC rule 3745-51-21
  
  – Corrosive - OAC rule 3745-51-22
  
  – Reactive - OAC rule 3745-51-23
  
  – Toxic - OAC rule 3745-51-24
Ignitable Hazardous Wastes
D001 waste code

- Liquid & flash point <140 F (except solution <24% alcohol)
- Flammable compressed gas
- Solid that spontaneously ignites & burns vigorously
- Oxidizer as defined DOT rules
- Examples include:
  - Solvents/degreasers
  - Some metal swarfs
D001 waste code

- Not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.
**Corrosive Hazardous Wastes**

**D002 waste code**

- Aqueous solution; pH ≤ 2 or pH ≥ 12.5

- Liquid that corrodes steel at a specified rate

- Examples include:
  - Acids
  - Alkaline cleaning fluids
  - Waste battery acids
Reactive Hazardous Wastes
D003 waste code

• Must rely on narrative description in OAC 3745-51-23 – Explosive, unstable, reacts violently with water or generates a toxic gas
• No current SW-846 analytical tests for reactivity.
• Generator knowledge

• Examples include:
  – Dynamite
  – Waste peroxides
Toxic Hazardous Wastes
D004 –D043 waste codes

• Contain toxic constituents above regulatory levels
  – 8 metals; 32 organics

• Determined by Toxicity Characteristic Leaching Procedure (TCLP)

• Examples may include:
  – Electronic equipment, most cathode ray tubes
  – Spent foundry sand, some clay poker chips, certain waste pesticides
# Toxic Hazardous Waste Examples

<table>
<thead>
<tr>
<th>Ohio EPA Hazardous Waste No.</th>
<th>Contaminant</th>
<th>CAS No</th>
<th>Regulatory Level (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D004</td>
<td>Arsenic</td>
<td>7440-38-2</td>
<td>5.0</td>
</tr>
<tr>
<td>D005</td>
<td>Barium</td>
<td>7440-39-3</td>
<td>100.0</td>
</tr>
<tr>
<td>D006</td>
<td>Cadmium</td>
<td>7440-43-9</td>
<td>1.0</td>
</tr>
<tr>
<td>D007</td>
<td>Chromium</td>
<td>7440-47-3</td>
<td>5.0</td>
</tr>
<tr>
<td>D008</td>
<td>Lead</td>
<td>7439-92-1</td>
<td>5.0</td>
</tr>
<tr>
<td>D009</td>
<td>Mercury</td>
<td>7439-97-6</td>
<td>0.2</td>
</tr>
<tr>
<td>D010</td>
<td>Selenium</td>
<td>7782-49-2</td>
<td>1.0</td>
</tr>
<tr>
<td>D011</td>
<td>Silver</td>
<td>7440-22-4</td>
<td>5.0</td>
</tr>
</tbody>
</table>
How do I know if a waste is characteristic?

• Testing: Test a representative sample of the waste.

• Generator Knowledge: Apply knowledge of hazardous characteristics/constituents in light of the materials or processes used.
What is a representative sample?

• Expected to exhibit average properties.

• Some suggested sampling methods in OAC 3745-51-20.

• American Society for Testing and Materials (ASTM)
Generator Knowledge

- Process description.
- Chemical makeup of all inputs/outputs.
- SDS (account for info. limitations)
- Literature data: similar process & same inputs.
- Analytical data: wastes from similar process & same inputs.
Documentation for Waste Evaluation

• Keep for three years from date waste last sent to onsite treatment or offsite treatment, storage or disposal.

• Waste analysis data.

• Information used to make generator knowledge determination.
Do I Have A Hazardous Waste?

Determine your business has created a waste. Is it excluded?

No

Is the waste on Ohio EPA’s F, K, P or U lists?

No

Does the waste have any hazardous waste characteristics?

No

Not a hazardous waste

Yes

You have a listed hazardous waste

Does the waste have any hazardous waste characteristics?

Yes

You have a listed and characteristic hazardous waste

No

You have a characteristic hazardous waste

Yes

Not a hazardous waste
Generator Categories
Ohio has three hazardous waste generator categories:

- Conditionally Exempt Small Quantity Generators (CESQGs),
- Small Quantity Generators (SQGs), and
- Large Quantity Generators (LQGs).
Determining Your Category

• Total weight of hazardous waste that the entire facility generates (produces) in any given month of the calendar year.
  – For example: Hazardous waste that you generate between May 1\textsuperscript{st} and May 31\textsuperscript{st}

• Total amount of hazardous waste on-site at any given time (only pertains to CESQGs and SQGs)

• NOTE: Generator categories are NOT determined by the weight of waste shipped off-site or by averaging.
Conditionally Exempt Small Quantity Generators (CESQGs)

You are a CESQG if you:

- generate no more than 220 pounds of hazardous waste in a calendar month; AND

- never accumulate more than 2,200 pounds of hazardous waste at your facility

Note:

- 220 pounds is about half of a 55-gallon drum
- 2,200 pounds is about five 55-gallon drums
What If I Go Over The CESQG Limits?

• Generate more than 220 pounds of HW/month
  – you become either an SQG or LQG for that month

• Accumulate more than 2,200 pounds of HW at any given time
  – you become a SQG until that HW is moved off-site
Small Quantity Generators (SQGs)

You are an SQG if you:

• generate more than 220 pounds but less than 2,200 pounds of hazardous waste/month; and

• never accumulate over 13,200 pounds of hazardous waste on-site
What If I Go Over The SQG Limits?

- Generate more than 2,200 pounds of hazardous waste in a calendar month
  - you become an LQG until that hazardous waste is moved off-site

- Accumulate over 13,200 pounds of hazardous waste on-site
  - you become a treatment, storage and disposal facility (TSDF) and must have a hazardous waste installation and operation permit
Large Quantity Generators (LQGs)

You are an LQG if you:

– generate 2,200 or more pounds of hazardous waste/month
– generate or accumulate more than 2.2 pounds of acute hazardous waste (P-code)

Note: LQGs do not have a limit on the amount of hazardous waste stored on-site
What Is Episodic Generation?

• Often termed *episodic generation*

• Must manage your hazardous waste under all applicable generator requirements for hazardous wastes generated that month for as long as that waste remains on-site

• If you reach LQG status at any time during the calendar year, you must file a [biennial report](#) (if the generation is in an odd year)
Generator Requirements
Compliance Assistance Information

• Guidance document: [Hazardous Waste Generator Requirements Summary Table](#)

• CESQG, SQG or LQG compliance requirements

• OAC references
## Compliance Assistance Information

### Hazardous Waste Generator Requirement Summary Table

<table>
<thead>
<tr>
<th>Generator Requirements and OAC reference</th>
<th>CESQG</th>
<th>SQG</th>
<th>LQG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monthly Generation</strong> 3745-52-34</td>
<td>≤ 2.2 lbs of &quot;acute&quot; hazardous waste ≤ 220 lbs of hazardous waste about ½ (55)g drum¹</td>
<td>≤ 2.2 lbs of &quot;acute&quot; hazardous waste &gt; 220 lbs about ½ (55)g Drum to ≤ 2,200 lbs about (5) (55)g drums of hazardous waste</td>
<td>&gt; 2.2 lbs of &quot;acute&quot; hazardous waste ≥ 2,200 lbs or more than 5 (55)g drums of hazardous waste</td>
</tr>
<tr>
<td><strong>Total Accumulation On-site</strong> 3745-52-34</td>
<td>≤ 2.2 lbs of &quot;acute&quot; hazardous waste ≤ 2,200 lbs, about (5) (55)g drums of hazardous waste</td>
<td>≤ 2.2 lbs of &quot;acute&quot; hazardous waste &gt; 220 lbs and &lt; 13,200 lbs of hazardous waste, about 30 (55)g drums</td>
<td>&gt; 2.2 lbs of &quot;acute&quot; hazardous waste ≥ 13,200 lbs of hazardous waste</td>
</tr>
<tr>
<td><strong>Hazardous Waste Determination</strong> 3745-52-11</td>
<td>Required through process knowledge or analysis (documentation required)</td>
<td>Required through process knowledge or analysis (documentation required)</td>
<td>Required through process knowledge or analysis (documentation required)</td>
</tr>
</tbody>
</table>

¹ Drum weight must be specified in the report.
Hazardous Waste Determination

• Applies to all generators

• Failure to properly evaluate your waste may lead to unsafe conditions or violations from improper management

• OAC rule 3745-52-11
Hazardous Waste Determination

- 3745-51-04 Exclusions.
- (A) Materials which are not wastes. The following materials are not wastes for the purpose of Chapter 3745-51 of the Administrative Code:
  - (1) Domestic sewage; and:
  - (a) Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly owned treatment works (POTW) for treatment.
  - (b) As used in Chapter 3745-51 of the Administrative Code, "domestic sewage" means untreated sanitary wastes that pass through a sewer system.

- This exclusion does not extend to the sludge
U.S. EPA Identification Number* (12-digit)

- **CESQGs** - Not Required – but...
  - Transporter or TSD may request that you obtain one

- **SQGs** and **LQGs** – Required

  - Site specific, identifies the facility that generated the waste

- To obtain, complete Site ID form (Form 9029)
  
  epa.ohio.gov/portals/32/pdf/WasteActivityBook.pdf
What Is Satellite Accumulation?

- Use of this rule reduces some regulatory requirements for storage areas
- Only applies to SQGs and LQGs
- Guidance document: Satellite Accumulation
- Found in OAC rule 3745-52-34(C)
What Requirements Apply to Satellite Accumulation Areas?

• Up to 55 gallons of hazardous waste in containers at or near each point of generation

• Containers must be under control of the operator of the process which generated the waste

• Containers must be compatible with waste and in good condition – not leaking
What Requirements Apply to Satellite Accumulation Areas?

• Containers must be marked with the words “Hazardous Waste” (or other words that identify contents)

• Containers must remain closed except when adding or removing hazardous waste
What Happens When I Reach the 55-Gallon Limit?

• **Within 3 days**
  • Put the date on container

• Move the container to accumulation area

• Comply with accumulation requirements (90/180 day storage limits)
What Are My Container Management Requirements For SQGs and LQGs?

• Clearly labeled as “Hazardous Waste” with an accumulation start date visible for inspection

• Closed

• Good condition

• Compatible with the waste and area
What Are My Container Management Requirements For SQGs and LQGs? (cont.)

• Maintain aisle space
• Conduct weekly inspections
• Ignitable/reactive HW stored at least 50 feet (15 meters) from facility’s property line
• U.S. EPA air emission standards (i.e. AA, BB, CC) for LQGs
• Guidance document Are You Properly Managing Your Hazardous Waste Containers?
What Are My Tank Management Requirements?

- They only apply to SQGs and LQGs
- **Large Quantity Generator**
- **Tank System Requirements**

Found in OAC rules [3745-66-90 through 3745-66-101](#)
What Are The LQG Tank Management Requirements?

- Secondary containment
- Daily Inspections
- Leak detection system
- Tank system assessment/certification by PE
- Closure
- U.S. EPA air emission standards (i.e. AA, BB, CC)
What Are The LQG Tank Management Requirements?

- Be able to show - emptied/turned over once every 90 days
- Good condition
- Compatible with waste
- Labeled as “Hazardous Waste”
- Daily inspections (includes Saturday and Sunday)
What Are My SQG Tank Management Requirements?

- Be able to show - emptied/turned over once every 180 days
- Good condition
- Compatible with waste
- Labeled as “Hazardous Waste”
- Daily inspections
- Remove all hazardous waste from tank system when facility closes

OAC rule 3745-66-101 specific to SQGs
Container or Tank

Portable Container

Stationary Tank
What Am I Required To Do When I Ship My HW Off-site?

**CESQGs** are not required to prepare a manifest

**SQGs** and **LQGs** must prepare manifest and:

- Package your HW
- Label each package of HW
- Mark each package of HW
- Placard or offer the initial transporter the appropriate placards
- Found in OAC rules [3745-52-30 to 3745-52-33](#)
Does My Business Need Personnel Training?

• **CESQGs** are not required to conduct personnel training

• **SQGs** must:
  – ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures

• **LQGs** must:
  – conduct classroom instruction or on-the-job personnel training for facility employees
  – conduct annual refreshers
  – prepare/maintain training records

OAC rules [3745-65-16](https://www.ohio.gov/agency/ohio-agency-code) and [3745-52-34](https://www.ohio.gov/agency/ohio-agency-code)
How Do I Prepare For Emergencies?

No requirements for CESQGs

SQGs and LQGs must:

• Maintain emergency equipment on-site
• Maintain and operate your facility to minimize the possibility of emergencies
• *Test and maintain your emergency equipment ‘as necessary’ and record the inspections in a log*
• *Maintain adequate aisle space*
  – Movement of personnel and emergency response equipment
• Make arrangements with local emergency authorities

Found in OAC rules 3745-65-30 to 3745-65-37
Emergency Procedures & Contingency Plan

• **SQGs** – at least one employee on-site or on-call to respond to all emergencies.
• Has the emergency information been posted by the telephone:
• Are employees familiar with waste handling and emergency procedures? [3745-52-34(D)(5)]

Example contingency plan available
Emergency Procedures & Contingency Plan

- **LQGs** – at least one employee on-site or on-call to respond to all emergencies.
- Prepare and maintain a written contingency plan (emergency coordinators, response actions, etc.)
  - Maintain all reports of contingency plan implementation on-file and report the incidents to Ohio EPA
  - A copy of your contingency plan must be maintained at your facility & submitted to local police, fire, hospitals, emergency response teams but no longer Ohio EPA

[Example contingency plan available](#)
What Are My Recordkeeping Requirements?

- CESQG must be able to demonstrate that they evaluated their waste
- Have ensured proper disposal

Found in OAC rule 3745-52-05(G)
What Are My Recordkeeping Requirements?

• SQGs and LQGs must keep a copy of the following for at least 3 years:
  – Test results
  – Waste evaluation
  – or other determinations made in accordance with rule 3745-52-11

Found in OAC rule 3745-52-40
What Are SQG’s Additional Recordkeeping Requirements?

– Weekly container inspections;

– Emergency equipment inspections (as necessary)

– Manifests;

– Land disposal restriction notifications, certifications and waste analysis data;

– Daily tank inspections (Includes Weekends)
What Are LQG’s Additional Recordkeeping Requirements?

– Everything mentioned in the previous two slides;

– Personnel training documents;

– Biennial reports

Guidance document: Generator Record Keeping Requirements Summary Table
What Are My Manifesting Requirements?

- **SQGs** and **LQGs** must use a HW manifest
  - Each person who transports, stores, treats or disposes must sign & retain a copy
  - Must receive signed copy of your manifest from the final destination facility
  - Each transporter must have a copy for their records
  - Destination facility must have a copy

Found in OAC rules [3745-52-20 to 3745-52-23](#)
Manifests are HW tracking documents

Uniform hazardous waste manifest
Manifests are HW tracking documents
Uniform hazardous waste manifest

• **15. GENERATOR’S/OFFEROR’S CERTIFICATION:**
  I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.
  • If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
  • I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.
What Is An Exception Report?

- Exception reports are part of the RCRA manifest tracking system

- After you send waste off-site for disposal, the TSDF is required to return to you a copy of the original manifest

- If you don't receive the manifest from the TSDF, then you must submit an exception report to Ohio EPA

Found in OAC rule 3745-52-42
Am I Required To File An Exception Report?

• CESQGs - Not Required

• SQGs – Required
  – If you do not receive a copy of the manifest signed by the designated facility within 60 days: Send exception report to Ohio EPA

• LQGs – Required
  – If you do not receive a copy of the signed manifest within 35 days: Contact transporter and/or the designated facility
  – If you do not receive a copy of the signed manifest within 45 days: Send exception report to Ohio EPA
What Are The Land Disposal Restrictions (LDRs)?

- These only apply to SQGs and LQGs, Found in OAC Chapter 3745-270

- Standards developed to ensure that toxic constituents present in hazardous waste are properly treated before land disposal

- Under LDRs, generators need to complete a notification (one-time) which accompanies manifest to TSD facility

- TSDFs treat your HW to meet LDRs

- Guidance document: Land Disposal Restrictions (An Overview)
What Are The Land Disposal Restrictions (LDRs)?

• If the generator chooses not to make the determination of whether his waste must be treated, the generator must send a one-time written notice to each treatment or storage facility receiving the waste. . [3745-270-07(A)(2)]
  – Are the EPA hazardous waste numbers and manifest number of the first shipment
  – It state "This hazardous waste may or may not be subject to the LDR treatment standards? The treatment facility must make that determination."
Must I File a Biennial Report?

• Only LQGs file biennial reports
  – Includes episodic generators who became LQGs

• Report provides Ohio EPA and U.S. EPA with data concerning your facility’s hazardous waste generation, management and waste minimization activities

• Due by March 1st in even numbered years for previous calendar year.

OAC rule 3745-52-41
Training Requirements

• Many of the training requirements are site specific
• We recommend that training is given only to individuals involved in the management of hazardous waste.
Training Requirements

• Does the generator have a training program which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to their positions? 3745-65-16(A)(2)
Training Requirements

• Does the personnel training program, at a minimum, include instructions to ensure that facility personnel are able to respond effectively to emergencies involving hazardous waste by familiarizing them with emergency procedures, emergency equipment and emergency systems (where applicable)? [3745-65-16(A)(3)]
Training Requirements – Contingency Plan

• Actions to be taken in response to fires, explosions or any unplanned release of hazardous waste? [3745-65-52(A)]
• Arrangements with local police departments, fire departments, hospitals, contractors, state and local emergency response teams to coordinate emergency services? [3745-65-52(C)]
• A current list of names, home addresses and telephone numbers (home or cellular telephone numbers) of all persons qualified to act as emergency coordinator? [3745-65-52(D)]
• A list of all emergency equipment, including: location, a physical description and brief outline of capabilities? [3745-65-52(E)]
• An evacuation plan for facility personnel where there is possibility that evacuation may be necessary? [3745-65-52(F)]
Training Requirements

• Job titles for each position at the facility related to hazardous waste management, and the name of the employee filling each job? [3745-65-16(D)(1)]

• A written job description for each position listed under a Job title description? [3745-65-16(D)(2)]
Training Requirements

• A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph (D)(1) of this rule? [3745-65-16(D)(3)]

• Completed training or job experience required? [3745-65-16(D)(4)]
Training Requirements

• Are training records for current personnel kept until closure of the facility and are training records for former employees kept for at least three years from the date the employee last worked at the facility? [3745-65-16(E)]
Training Requirements

• Site specific training for the contingency plan.
Break
Universal Waste Rules
Types of Universal Waste

- **Hazardous waste pesticides**
  - Recalled or suspended under FIFRA

- **Mercury-containing devices**
  - Includes all mercury-containing devices

- **Discarded batteries**
  - Alternative option for lead acid batteries

- **Light bulbs**
  - Includes incandescent, fluorescent, compact fluorescent, LED, high intensity discharge, neon, high pressure sodium, etc.
What are the UW handler categories?

• Two categories:
  – Small quantity handlers
    • Accumulates on-site less than 5,000 kilograms (11,023 pounds) of UW (not by type) at any time.
  
  – Large quantity handlers
    • Accumulates on-site more than 5,000 kilograms (11,023 pounds) of UW (not by type) at any time.
Universal Waste

• "Universal waste handler":
• (1) Means either of the following:
• (a) A "generator" (as defined in this rule) of universal waste.
• (b) The owner or operator of a facility, including all contiguous property, that receives universal waste from other universal waste handlers, accumulates universal waste, and sends universal waste to another universal waste handler, to a destination facility, or to a foreign destination.
New Universal Waste

• (2) Does not mean either of the following:
  • (a) A person who treats [except under paragraph (A), (C), (E), (F), or (G) of rule 3745-273-13 of the Administrative Code, or paragraph (A), (C), (E), (F), or (G) of rule 3745-273-33 of the Administrative Code], disposes of, or recycles universal waste.
  • (b) A person engaged in the off-site transportation of universal waste by air, rail, highway, or water, including a universal waste transfer facility.
Am I required to notify Ohio EPA of my UW activities?

• Small quantity handlers are NOT required to notify Ohio EPA or to obtain a U.S. EPA identification number

• Large quantity handlers **ARE** required to notify and obtain a **U.S. EPA identification number** (unless you already have one)
Where do I send my UW?

• **Another UW handler**

OR

• **Permitted UW destination facility**
  - A facility permitted to treat, dispose of or recycle your UW
Do I count my UW towards my hazardous waste generator category?

No

UW does **not** count towards your hazardous waste category.

** do not confuse these categories with the hazardous waste generator categories
(CESQG, SQG, or LQG)
What are the packaging requirements for UW?

Batteries
- only required if leaking

Mercury-Containing Devices, Light Bulbs and Pesticides
- place in closed container
- must be designed to contain potential releases
- broken or damaged light bulbs can be sent to a permitted facility
What are the labeling requirements for UW?

• Each category of UW must be clearly marked with the appropriate wording
  – For example: “Universal Waste Lamps;” “Waste Lamps;” or “Used Lamps”

• Be able to demonstrate accumulation time
How long can I accumulate UW?

• Up to one year on-site regardless of your handler category

• If greater than one year is required, you must be able to prove why it is necessary
Do I Need a HW manifest my UW?

NO

– UW handlers are not required to use a HW manifest off-site shipments of UW

– UW handlers, however, must ensure delivery to another UW handler or to a permitted destination facility
What about those “green” light bulbs?

• They still contain mercury
  – regulatory level 0.2 mg/L

• We encourage recycling rather than disposal

• If disposed, must evaluate and retain documentation for three years
Can I use a crusher to crush my light bulbs?

• It Depends

• UWR prohibits handlers from crushing light bulbs

• If you crush your bulbs, you must manage them under the hazardous waste requirements
Bulb Crushing

• There is a high potential for exposure to harmful mercury vapors when lamps are crushed.

• Crushing operations should following the OSHA and bulb crushers manufactures guidelines

• OSHA’s fact sheet is titled: Protecting Workers from Mercury Exposure While Crushing and Recycling Fluorescent Bulbs.
DOT rules for batteries

• Batteries destined for recycling need to be properly packaged per DOT rules

• Some batteries present a fire hazard if they short circuit

• > 9 volt terminals must be taped, or batteries placed in individual bags or original containers
“Ohio Specific” New Universal Waste

- December 21, 2017
- Three new universal waste rules become effective only within the confines of the State of Ohio
  - Antifreeze
  - Non empty Aerosol Containers
  - Spent Paint and Paint Related Waste
“Ohio Specific” New Universal Waste

• The new universal waste have most of the same management requirements as the previous universal waste.

• I will highlight some of the differences when discussing each.

• A handler of universal waste shall manage universal waste in a way that prevents releases of any universal waste or any component of a universal waste to the environment, as follows: 3745-273-13, 3745-273-33
Antifreeze

• “Antifreeze" means propylene glycol or ethylene glycol including aggregated batches of propylene glycol or ethylene glycol used as a heat transfer medium in an internal combustion engine; heating, ventilating, and air conditioning units; and electronics cooling applications; or used for winterizing equipment. [OAC 3745-273-09](https://example.com) (C)
Antifreeze

- A handler of universal waste antifreeze shall:
  - (1) If antifreeze is stored in a tank complies with paragraphs (B) to (H) of rule 3745-66-101
  - (2) shall not commingle or contaminate antifreeze subsequent to the removal of the antifreeze from a heat exchanger or other equipment when used to winterize that equipment
  - (3) A handler of universal waste shall develop and maintain at the facility a procedure that describes how antifreeze will be prevented from being commingled or contaminated subsequent to removal
  - (4) A handler shall use dedicated antifreeze collection and storage containers and tanks for the management of antifreeze.
Antifreeze

- Antifreeze (subsequent to generation) mixed w/used oil is classified as a used oil & subject to the used oil rules.
Antifreeze reclamation

• Handler of universal waste may reclaim antifreeze provided
  
  – (a) shall use commercially available equipment, or equipment specifically custom designed or retrofitted to reclaim the antifreeze

  – (b) shall use reclamation equipment that has sufficient processing capacity to reclaim the quantity of antifreeze received or generated by the handler within one year
Antifreeze reclamation

– (c) The handler of universal waste shall train each operator of the reclamation equipment regarding the proper operation and maintenance

– (d) A handler of universal waste shall determine if the wastes generated from the reclamation of antifreeze are "hazardous wastes"
Antifreeze Release

• Upon detection of a release of antifreeze
  – (a) Stop the release of antifreeze.
  – (b) Contain the released antifreeze.
  – (c) Clean up and properly manage and dispose the released antifreeze

• Spilled universal waste antifreeze that is recovered in liquid form or materials used to absorb a spill of universal waste antifreeze may be managed as universal waste antifreeze
Training

• A handler of universal waste who manages antifreeze shall train employees who manage antifreeze regarding the universal waste requirements applicable to antifreeze, the proper management of antifreeze, the procedure to prevent contamination of antifreeze with characteristic hazardous waste or listed hazardous waste, and the proper response to a release of antifreeze.
Paint and Paint related Ohio-specific UW Management Standards

• Paint
  – Mixture of pigment, binder, and liquid; powder coatings
  – Forms adhering surface coating
  – HW due to metal content or ignitability

• Paint-related wastes
  – A material contaminated with paint
  – Purge solvent, Rags, PPE, Paint scrapings
  – HW due to metal content, corrosivity, ignitability
Paint and Paint related Ohio-specific UW Management Standards

• Handler may puncture and crush paint containers
  – Use appropriately designed equipment with sufficient processing capacity
  – Collect contents of the containers
  – Train operator regarding proper operation and maintenance of equipment

• If paint waste is solely collected from an aerosol can it may be classified as UW paint
Paint and Paint related Ohio-specific UW Management Standards

• Recycling paint and paint-related waste

  – Paint can be reclaimed by any handler

  – Paint-related wastes can only be reclaimed on-site by the handler that generated the wastes or by a destination facility (i.e., permitted HW facility)

  – Tank storage in accordance with that complies with rules 3745-66-90 to 3745-66-99 except paragraph (C) of rule 3745-66-97.
Paint and Paint related Ohio-specific UW Management Standards

• Wastes generated from the reclamation of paint or paint-related wastes are not UWs
  – It needs to be evaluated

• Train operator regarding proper operation and maintenance of reclamation equipment
Aerosol containers

- Non-empty containers

- HW due to propellant or contents
Aerosol containers

• Satellite accumulation area
  – One bulk container ≤ 55 gal or a cabinet area
  – Container or cabinet needs labelled but not dated
  – Move aerosol containers to main UW storage area when bulk container/cabinet area full
    • Now date storage container
    • Starts 1-year accumulation time clock
Aerosol containers

• A handler may puncture and crush aerosol containers

  – Use appropriately designed equipment with sufficient processing capacity

  – Collect contents of aerosol containers

  – Puncture & crush in a ventilated area

  – Protect equipment from ignition source
Aerosol containers

• Train operators regarding proper operation and maintenance of equipment

• Do not mix incompatible wastes

• Determine if contents removed from an aerosol container is a hazardous waste; it is not a UW
  – Exception: collected contents consisting solely of paint can be UW
Aerosol containers

• Some aerosol containers you may want to send to another handler who is more familiar with these types of waste

  – Insecticides
  – Expanding foam
  – Adhesives
  – Pepper spray
  – Reactive
Labeling

- Each container or tank accumulating Ohio Specific universal waste shall be labeled with words that identify the contents of the container or tank (for example, used antifreeze, spent antifreeze, UW antifreeze, recyclable antifreeze, aerosol can, Paint waste etc). 3745-273-14
Ohio-specific UWs
Transported Out-of-State

• While in Ohio, the waste is a UW

• Upon entering another state, classify waste per the receiving state’s rules

• If receiving state adopted 2015 Definition of Solid Waste rule:
  – waste will likely be classified as a HW in the receiving state; check w/ receiving state
Used Oil Requirements
Used Oil Introduction

• Used oil rules are separate from hazardous waste rules and only address Used Oil
  – Ohio Administrative Code 3745-279-20 through 279-24

• Rules are based on the premise that used oil will be recycled
What is used oil?

• Petroleum based (or synthetic oils) that have been **used** and as a result are **contaminated** with physical or chemical impurities

  – Contaminates can include dirt, metal shavings, water or fuel.
Used Oil Includes

- Cutting oils or Coolants
- Engine oils
- Lubricating and insulating oils
- Brake and transmission fluids
- Hydraulic fluids
- Industrial process oils
- Compressor and refrigerant oil
Used Oil Does Not Include

• Unused oils
• Cleanup materials from virgin oil spills
• Animal or vegetable oils
• Oil sludge from virgin oil storage tanks
• Antifreeze
• Kerosene (unless used as a lubricant)
• Petroleum products/distillates used as solvents
How should I manage my used oil on-site?

• Ensure containers/tanks are in good condition

• Label containers/tanks “Used Oil”

• Take quick actions if repairs are needed or spills occur
How should I recycle my used oil?

• Send to a recycler
  – Use transporters with an EPA ID number

• Take used oil to a registered collection center or aggregation point
  – You can self transport up to fifty-five gallons if you use your own vehicle or a vehicle owned by an employee
How are used oils regulated that are sent off site for disposal.

• Used oils or items that are contaminated with used oils are no longer regulated as used oil

• It is a spent material

• Which now must be evaluated to determine if it is or is not a hazardous waste.
Ohio Rulemaking Developments Concerning Hazardous Waste
State and Federal Regulatory Updates

• Definition of Solid Waste Rule
  – Adopted by USEPA in 1/13/2015
  – Pertains to the reclamation of HW
  – USEPA was sued; Court tentatively vacated two components of the rule
    • Verified recyclers exclusion
    • Legitimacy criteria 4 (toxics-along-for-the-ride)
    • Final court decision expected early 2018
  – Ohio EPA has postponed rule development for the time being
State and Federal Regulatory Updates

• Generator Improvements Rule
  – Adopted by USEPA 11/18/2016
  – USEPA was sued
  – USEPA is in negotiations to resolve issues of concern
  – Ohio EPA has begun rulemaking process to adopt the rule; expected adoption early 2019
State and Federal Regulatory Updates

• Federal
  – Revise the ignitability characteristic
  – Pharmaceutical rule expected Spring 2018
  – Universal waste aerosol can rule

• Ohio
  – State-specific exclusion for HW contaminated textiles that are laundered
  – Solvent contaminated wipes are not eligible
Solvent Contaminated Wipes

Specifically, the rule includes:

• A conditional exclusion from the definition of solid waste for solvent-contaminated wipes sent for cleaning (“reusable wipes”) OAC rule 51-04(A)(26)

• A conditional exemption from the hazardous waste rules for solvent-contaminated wipes sent for disposal (“disposable wipes”) OAC rule 51-04(B)(18)
Solvent Contaminated Wipes Details

The final rule provides a definition for “wipe” (159) and “solvent-contaminated wipe” (118) in OAC rule 3745-50-10(A)

• *Wipe* means a woven or non-woven shop towel, rag, pad, or swab made of wood pulp, fabric, cotton, polyester blends, or other material.

• *Solvent-contaminated wipe* means
  – A wipe that, after use or after cleaning up a spill, either:
  – Contains one or more of the F001 through F005 solvents;
  – Exhibits a hazardous characteristic when that characteristic results from a listed solvent; or
  – Exhibits only the hazardous waste characteristic of ignitability due to the presence of solvents that are not listed.
Solvent Contaminated Wipes Details

The definition for “solvent-contaminated wipe” in OAC rule 3745-50-10. refers the reader to what's is not eligible for the exclusions in paragraphs (A)(26) and (B)(18) of rule 3745-51-04 of the Administrative Code.

- Solvent-contaminated wipes that contain listed hazardous waste other than solvents, or exhibit the characteristic of toxicity, corrosivity, or reactivity due to contaminants other than solvents, are not eligible for the exclusions.
Solvent Contaminated Wipes Details

• The final rule includes *conditions for the* exclusion of solvent contaminated wipes.

• Meaning that if one or more of the conditions are violated, the solvent contaminated wipes could lose their status and become subject to hazardous waste regulation from the point of generation.

• The conditions for both the reusable wipes and disposable wipes exclusion are practically the same, which should ease implementation and compliance.
# Solvent Contaminated Wipes - Conditions

<table>
<thead>
<tr>
<th>Solvent-Contaminated Reusable Wipes</th>
<th>Solvent-Contaminated Disposable Wipes</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Wipes containing one or more F001-F005 listed solvents listed in § 261.31 or the corresponding P- or U- listed solvents found in § 261.33, including:</td>
<td>➢ Wipes that contain listed hazardous waste other than solvents.</td>
</tr>
<tr>
<td>➢ Wipes that exhibit a hazardous characteristic resulting from a solvent listed in part 261.</td>
<td>➢ Wipes that contain listed hazardous waste other than solvents.</td>
</tr>
<tr>
<td>➢ Wipes that exhibit only the hazardous characteristic of ignitability when containing one or more non-listed solvents.</td>
<td>➢ Wipes that exhibit the characteristic of toxicity, corrosivity, or reactivity due to non-listed solvents or contaminants other than solvents.</td>
</tr>
<tr>
<td>➢ Wipes that contain listed hazardous waste other than solvents.</td>
<td>➢ Wipes that are hazardous waste due to the presence of trichloroethylene.</td>
</tr>
</tbody>
</table>

- Acetone
- Benzene
- n-Butanol
- Chlorobenzene
- Creosols
- Cyclohexanone
- 1,2-Dichlorobenzene
- Ethyl acetate
- Ethyl benzene
- 2-Ethoxyethanol
- Isobutyl alcohol
- Methanol
- Methyl ethyl ketone
- Methyl isobutyl ketone
- Methylene chloride
- Tetrachloroethylene
- Toluene
- 1,1,2-Trichloroethane
- Trichloroethylene (*For reusable wipes only.)
- Xylenes
Solvent Contaminated Wipes - Conditions

Storage

• The rule uses a performance-based standard, rather than specifying types of containers.

• Solvent-contaminated wipes must be accumulated, stored, and transported in non-leaking, closed containers.

• The containers must be able to contain free liquids, if they occur (for example, from compression of the wipes).
Solvent Contaminated Wipes - Conditions
Closed vs Sealed

Storage

- Containers must be **closed** during the accumulation period except when adding or removing wipes.

- A container must be **sealed** when the container is full, when the wipes are no longer being accumulated, and during transportation.
Solvent Contaminated Wipes - Conditions Closed vs Sealed

• The standard is performance-based; facilities have flexibility in determining how to meet the standard.

  – Wipes accumulated in an open-head drum or container would be considered **closed** when the cover makes complete contact between the fitted lid and the rim.

  – After accumulation and during transport, this same container must be **sealed** to meet this standard; thus, the rings must be clamped or bolted to the container.
Solvent Contaminated Wipes - Conditions
Closed vs Sealed

Other examples that may meet the standard:

– Containers **closed** by a foot pedal (e.g., flip-top or spring-loaded lid) or with a self-closing swinging door;

– Bags can be used, provided they meet the standard (i.e., the neck of the bag is tightly bound and **sealed**, the bag is able to contain liquids, and is non-leaking).

• Examples that do not meet the standard:
  Bags leaving a trail of liquid on the ground;
  Cardboard boxes
  cloth laundry bags.
Solvent Contaminated Wipes – Conditions

Labeling

- Containers of solvent-contaminated wipes must be labeled “Excluded Solvent-Contaminated Wipes.”

- Containers must be labeled during accumulation, storage, and transportation.
Solvent Contaminated Wipes - Conditions

Accumulation Time Limit

• Solvent-contaminated wipes may be accumulated by the generator for up to 180 days from the start date of accumulation for each container.

• Generators must keep documentation that the 180-day accumulation time limit is being met.
  – No satellite accumulation

• Note: Since wipes may not be accumulated for more than 180 days from the start date.
  – including a start date on the accumulation container would add a degree of certainty to that process. However, that is not required.
  – There are other methods to document that the 180-day accumulation is being met, such as an established schedule for pickups, a log of container dates, etc.
Solvent Contaminated Wipes - Conditions

“No free liquids” – the Heart of the Rule

- Solvent-contaminated wipes may not contain free liquids at the point of being sent for cleaning on site or sent off site for cleaning or disposal.

- “No free liquids” is defined in OAC rule 3745-50-10 (A)(88) and is determined using the Paint Filter Liquids Test (Method 9095B in SW-846).

- Paint Filter Liquids Test consists of placing a portion of the solvent-contaminated wipe in a paint filter and if any of the material passes through and drops from the filter within five minutes, the material is deemed to contain free liquids.
Solvent Contaminated Wipes - Conditions

“No free liquids” – a requirement of the Rule

• Generators must document the process they are using to meet the “no free liquids” condition.

• Free liquid (spent solvents) that are removed from the wipes is subject to hazardous waste regulation.
Paint Filter Liquids Test
Solvent Contaminated Wipes - Conditions

Recordkeeping (laundering or disposal)

• Generators must maintain the following documentation at their site:

• Name and address of the destination facility (laundry, combustor, or landfill) that is receiving the solvent-contaminated wipes.
Solvent Contaminated Wipes - Conditions

Recordkeeping (laundering or disposal)

- Documentation that the 180-day accumulation time limit is being met.
  - This could include a service contract specifying frequency of pick-up, a log that lists the start date of each container, or container labels with the start date.
Solvent Contaminated Wipes - Conditions

Recordkeeping (laundering or disposal)

• Description of the process the generator is using to meet the “no free liquids” condition.
  – A description of technologies, methods, sampling, or knowledge that a generator is using to ensure wipes contain no free liquids at the point of transport.
Solvent Contaminated Wipes - Conditions

- Handling Facilities
- Cleaning
- Reusable wipes must be sent to a laundry or dry cleaner whose discharge, if any, is regulated under sections 301 (effluent discharge restrictions) and 402 (permitting requirements) or section 307 (indirect discharge to a POTW) of the Clean Water Act.
Solvent Contaminated Wipes - Conditions

• Disposable wipes must go to either
  – a combustor regulated under section 129 of the Clean Air Act or a hazardous waste combustor, boiler, or industrial furnace regulated under 3745-56, 68, or 266 of the Administrative Code.
  – Disposal in a municipal waste landfill unit subject to, or that otherwise meets, the requirements of rule 3745-27-08 or 3745-29-08 of the Administrative Code.
  – Disposal in a permitted hazardous waste landfill.

• Any free liquids found by handling facilities must be removed and they are subject to hazardous waste regulation.
Solvent Contaminated Wipes - Conditions

• Ohio EPA Guidance
• Options for the Management of Solvent Contaminated Rags and Wipes:
  http://epa.ohio.gov/Portals/32/Solvent%20Wipes.pdf
State and Federal Regulatory Updates

• Definition of Solid Waste Rule
  – Adopted by USEPA in 1/13/2015
  – Pertains to the reclamation of HW
  – USEPA was sued; Court tentatively vacated two components of the rule
    • Verified recyclers exclusion
    • Legitimacy criteria 4 (toxics-along-for-the-ride)
    • Final court decision expected early 2018
  – Ohio EPA has postponed rule development
State and Federal Regulatory Updates

• Generator Improvements Rule
  – Adopted by USEPA 11/18/2016
  – USEPA was sued
  – USEPA is in negotiations to resolve issues of concern
  – Ohio EPA has begun rulemaking process to adopt the rule; expected adoption early 2019
State and Federal Regulatory Updates

• Federal
  – Revise the ignitability characteristic
  – Pharmaceutical rule expected Spring 2018
  – Universal waste aerosol can rule

• Ohio
  – State-specific exclusion for HW contaminated textiles that are laundered
  – Solvent contaminated wipes are not eligible
Resources
Ohio EPA Resources

Answer Place

Division of Environmental Response and Revitalization – Central Office
Hazardous Waste Inspection and Compliance Assistance
   Weekdays, 8 AM – 5 PM
   (614) 644-2924

Office of Compliance Assistance & Pollution Prevention
   Weekdays, 8 AM – 5 PM
   (800) 329-7518

Northeast District Office – (330) 963-1200
DERR - Hazardous Waste Program’s Web site

Division Home Page
http://epa.ohio.gov/derr/EnvironmentalResponseandRevitalization.aspx#113282717-programs

Hazardous Waste Program Page
http://epa.ohio.gov/derr/hazwaste.aspx

Rules
http://epa.ohio.gov/derr/derrrules/rcra.aspx

Publications/Guidance Documents
http://ohioepapubs.custhelp.com/
DERR - Hazardous Waste Program’s Web site (cont.)

Generator Requirements
http://epa.ohio.gov/derr/hazwaste/generator_requirements.aspx

Used Oil
http://epa.ohio.gov/derr/hazwaste/usedoil.aspx

Universal Waste
http://epa.ohio.gov/derr/hazwaste/universalwaste.aspx

Ohio Commercial Hazardous Waste Receiving Facilities
https://ebiz.epa.ohio.gov/Recyclers/jsp/results.jsp?category=29

Recyclers List
https://ebiz.epa.ohio.gov/Recyclers/jsp/search.jsp
Guidance Documents (examples)

Identifying Your Hazardous Waste

Hazardous Waste Generator Handbook
www.epa.ohio.gov/portals/32/pdf/gen_handbook.pdf

Hazardous Waste Generator Categories and Episodic Generation

Generator Requirements Summary Table
www.epa.ohio.gov/portals/32/pdf/GeneratorRequirementsTable.pdf
Questions?