



## Waste Regulations 101

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### Goal Today

- Provide an overview of the types of waste regulated by the state and federal regulations

### Types of Waste Regulated by Statute:

- Hazardous Wastes
- Solid Wastes
- Waste Recycling and Reduction
- Liquid Industrial By-Products
- PCB Waste
- Medical Wastes
- Radioactive Waste

### How do I start?

- Identify what wastes are generated at your facility
- Tour your entire facility and inventory all waste streams

### What is a waste?

- A waste is any discarded material
- A waste can be a solid, liquid, semisolid, or gaseous material
- What is a waste?
- Material that cannot be used for its original intended purposes, including materials that are:
  - Burned as fuel
  - Accumulated and recycled or reclaimed
  - Discarded, abandoned or disposed
- As a general rule of thumb...

...less hazardous waste = less regulation & more disposal options under the law

*There is no one best answer for how to dispose of waste for all businesses & locations*

### Hazardous Waste Regulations

- Regulated under Part 111 of Act 451
- Determined to be a threat to human health or the environment
- Apply to all businesses, including municipalities, hospitals, & service industries, not just manufacturing

### Waste Characterization

- Is the waste listed on lists in the hazardous waste rules?
- Does the waste exhibit a characteristic that makes it hazardous?
  - Ignitable
  - Corrosive
  - Toxic
  - Reactive

### Listed Hazardous Waste Codes

- Listed In Part 111 Hazardous Waste Rules
- Wastes from non-specific sources like spent solvents & metal treatment sludges
  - Table 203a
  - F codes
- Wastes from specific industries like petroleum refineries and chemical manufacturer
  - Table 204a
  - K codes
- Commercial chemical products, off-specification products, container and spill residues like nicotine formaldehyde, DDT, & xylene

- Materials with sole active ingredient
- Tables 205 a, b & c
- P & U codes
- P Codes & those with “H” hazard code - all acutely toxic

### Characteristic Hazardous Waste Codes

- Ignitable - D001
- Corrosive - D002
- Reactive - D003
- Toxic - D004 – D043 (Table 201a)
- Severely Toxic – 001S - 007S
  - Table 202, includes dioxins & furans

### Characteristic Waste Common Test

- Flash point – Used for testing Ignitability < 140 F Examples: paints, solvents
- pH – Used for testing corrosivity  $\leq 2$  or  $\geq 12.5$  Examples: acids, bases
- Reactivity – Test as required for DOT classification for materials that are unstable at normal conditions, reacts violently with water, explode, etc.
  - Examples: lithium hydride & trichlorosilane
- TCLP (Toxicity Characteristic Leaching Procedure) - Used for testing leaching potential for the 40 Table 201a hazardous constituents found in the Part 111 rules
  - Examples: Paints or sludges containing metals or MEK, contaminated media

### TCLP Characteristic Hazardous Waste Codes

- Listed In Part 111 Hazardous Waste Rules

### Double Check!

- Once the hazardous wastes have been identified, check for exemptions or exclusions!

### Common Exemptions & Exclusions

- Wastewater discharges to POTW's that are approved by that sewer authority are exempted at the point of discharge to the sewer
- Batteries, pesticides, mercury devices, electric lamps, pharmaceuticals, consumer electronics & antifreeze handled as universal waste enjoy a partial exemption
- Used oils that are recycled
- Petroleum contaminated media from leaking UST systems that fail the TCLP for D018 – D043 only & are being remediated under DEQ approval pursuant to Part 213 of Act 451
- Off-specification fuel (gas, kerosene, diesel, etc.) being recycled into fuel or burned as fuel
- Materials remaining in manufacturing units that would otherwise be hazardous wastes
- - if taken out of service the material becomes a hazardous waste (degreasers, paint pots)
- Laundered rags that are reused that would otherwise be a hazardous waste
- Household waste, including single & multiple residences, hotels & motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, & day-use recreational areas

### Conditionally Exempt Small Quantity Generator Exemption –

- Monthly hazardous waste generation < 220 lbs. or  $\sim 1/2$  drum non-acute and < 2.2 lbs. acute
- Total hazardous waste accumulation always less than 2200 pounds ( $\sim 5$  drums)
- Wastes are properly disposed under other regulations

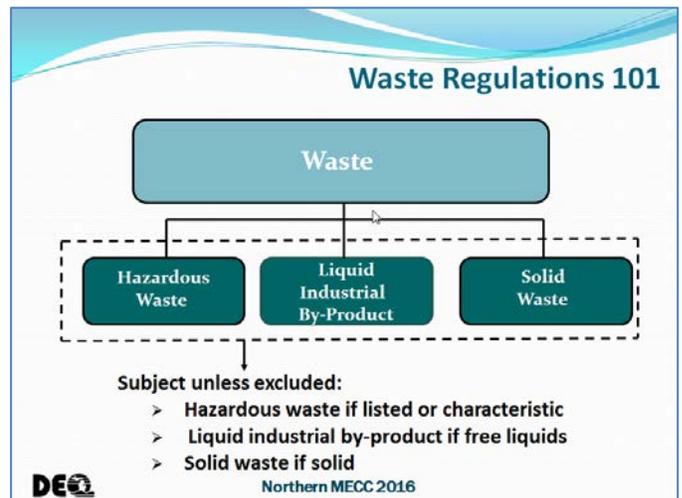
### Regulation of Waste – least to greatest

- Solid Waste
- Liquid Industrial By-Products Generators (LIB)
- Universal Waste Generators
- Conditionally Exempt Small Quantity Generators (CESQGs)
- Small Quantity Generators (SQGs)
- Large Quantity Generators (LQGs)



## Hazardous Waste Generator Status

- Hazardous waste generator status is based:
  - Total quantity of hazardous waste generated each calendar month AND
  - Total amount of hazardous waste accumulated at any point in one time
- This information is used to determine the handling & disposal requirements for the waste!!!
- Do not count the following wastes when determining your monthly generator status:
  - Waste excluded from definition of hazardous waste (e.g. recycled scrap metal, recycled fuel, POTW permitted disposal)
  - Universal waste (discussed later)
  - Used oil
  - Empty containers
  - Liquid industrial by-product



## Hazardous Waste Generator Requirements

See Chapter 2, Table 2.6 on page 2-41 of your Guidebook for a summary table!

### Minimum Hazardous Waste Records for All Generators

- Generators must maintain records on site for at least 3 years:
  - Waste characterization
  - Hazardous Waste Manifest (SQG & LQG)
  - Shipping records (CESQG)

### Liquid Industrial By-Product

- Liquid waste that is not a listed or characteristic hazardous waste
- Regulated under Part 121 of Act 451
- Formally “Liquid Industrial Waste”
- Determined by using the Paint Filter Test, EPA Method 9095 of SW-846.
- If there are any free liquids in the waste it should be managed as a liquid industrial by-product
- Includes liquid CESQG hazardous waste
- Includes exempted hazardous waste like fuel re-refined for use as fuel
- Includes other liquids that are generally not hazardous like:
  - Used oil
  - Catch basin clean-out waste
  - Antifreeze
  - Wastewaters
  - Fats, oils, and grease
- Generators must maintain records on site for at least 3 years for:
  - Waste characterization
  - Shipping records
- Generators must manage liquid industrial by-product in tanks or container that are...
  - in good condition
  - closed
  - non leaking
  - labeled to identify contents
  - Protected from weather, fire, physical damage, and vandals
- All liquid industrial by-product handlers must
  - have exterior of all vehicles, containers and tanks free of use oil residues
  - Prevent release to the environment
- All liquid industrial by-product must be transported by an Act 138 permitted registered transporter that maintains spill insurance unless:

- the by-product is from equipment in which the transporter has an ownership interested
- the transporter generated the by-product and
- spill insurance on the MCS-90 form is maintained

### **Solid Waste**

- If the waste meets a hazardous waste exemptions or exclusions, it is subject to non- hazardous solid waste regulation if it is solid
- Regulated under Part 115 of Act 451
- Solid waste must at disposed in a Type II Municipal Solid Waste Landfill unless:
  - Recycled or
  - Diverted
- Landfills require special waste approval prior to shipment for special waste (e.g. CESQG solid hazardous waste, aerosol cans, contaminated soil, etc.)
- Several wastes are prohibited from landfill disposal under Part 115. Those include...
 

○ Used Oil	○ Medical Waste
○ Liquid Waste	○ Empty Drums
○ Lead Acid Batteries	○ Whole Tires
○ Hazardous Waste from SQG & LQG	○ Returnable Beverage Containers
○ Low Level Radioactive Waste	○ Sewage
○ PCB Waste	○ Asbestos (unless landfill approved)

### **Solid Waste Recycling Exemptions**

- Concrete Grinding Slurry
- Ethanol
- Lime Sludge
- Manure, Paunch and Pen Waste
- Backyard Composting
- Gypsum Drywall
- Fish Waste
- Scrap Wood

### **Inert Materials**

- Inert means there are no listed hazardous wastes, or, hazardous substances present in a waste at concentrations above current Part 201 cleanup criteria
- Inert materials can include dredged spoils, excavated soils, cement kiln dust, asphalt, certain construction materials, rock, etc., natural wood
- Inert materials can be used as alternate daily cover in landfills with DEQ approval or as fill

### **Beneficial Reuse and Recycling**

- Beneficial use recycles waste materials like coal and wood bottom ash, paper pulp, cement kiln dust and foundry sand for use in industrial settings.
- Statute identifies specific use conditions that must be met for a beneficial use for the materials identified

### **Examples of Diverted Waste**

- Household hazardous wastes or CESQG exempt hazardous waste that can lawfully be landfilled which is collected and diverted to an environmental preferred management method :
- Examples of diverted waste include
  - Medications diverted to a permitted municipal waste incinerator
  - Computer, televisions, cell phones and tablets recycling
  - Paint & solvent waste send for hazardous waste disposal, or hazardous waste fuel blending
  - Fluorescent light bulb recycling

### **Toxic Substances Control Act (TSCA)**

- Regulation of TSCA is implemented by EPA
- Applies to the manufacture, processing, distribution, marking, use, storage, cleanup, and disposal of PCB-containing wastes
- Sources of PCBs include dielectric fluids, heat transfer fluids, capacitors, hydraulic fluids, etc.

## Toxic Substances Control Act

- There are generally 3 action levels of total PCB concentrations:
  - <50 ppm
  - $\geq$  50ppm to <500 ppm
  - $\geq$  500 ppm
- See Chapter 4.5, Page 4-26 and contact EPA Region 5 at 312-886-7890, 800-621-8431, or 213-353-2318, or [www.epa.gov/pcb](http://www.epa.gov/pcb) for more information

## Scrap Tires

- Regulated by Part 169 of Act 451 Requirements for scrap tire generators include:
  - Store tires safely at the location of generation
  - Ensure scrap tires are taken to a registered tire collection site
  - Use only register hauler
  - Obtain and keep copies of scrap tire manifests
- Can look up registered haulers and collection sites at [www.michigan.gov/scrap tires](http://www.michigan.gov/scrap tires)
- Can self-transport up to 10 tires without a manifest to a registered collection locations
- See Guidebook Section 2.2.2 Page 2-17 for more details

## Medical Wastes

- Regulated under Part 138 of Act 368, Michigan Public Health Code
- Includes infectious biohazardous waste like:
  - Blood and body fluids from human and animals
  - Pathological waste like organs and tissue
  - infectious agents like live or attenuated viruses in vaccinations
  - Sharps or needles and scalpels
- Medical waste does not include pharmaceuticals unless they contain live or attenuated vaccines in which case they're dual/mixed waste
- Many agencies regulate medical waste, including
  - DEQ – Regulates how producers must manage medical waste from point of generation to disposal
  - U.S. EPA – Produces guidelines for land disposal and requires air permitting for incineration
  - MSP/U.S. DOT – Specifies packaging, labeling, securing and shipping documents for safe transport
  - MIOSHA – Specified work protections for handling of blood borne infection materials
- Medical Waste Regulatory Act requires:
  - Producer registration every 3 years
  - Medical Waste Management Plan
  - Employee training records
  - Proper packaging
  - Storage no longer than 90 days
  - Shipment records

## Radioactive Wastes

- NARM and LLMW wastes are possibly exempt from the definition of hazardous waste if certain conditions apply, such as if it meets the acceptance criteria of a low-level radioactive waste disposal facility or eligible NARM waste
- NARM and LLMW waste shall meet or be treated to meet LDR treatment standards

## Asbestos

- Used in more than 3000 products over the past 100 years for it's insulation and fire protective properties
- Common products include pipe insulation, floor and ceiling tiles, and electrical appliances
- Found in a wide range of settings including industrial and manufacturing, school and universities, and residential properties
- Generally disposed in Type II Municipal Solid Waste landfill if the landfill has been approved to accept asbestos-containing wastes
- Regulated by MIOSHA under the National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Asbestos is the general name of a group of minerals with a similar propensity to become airborne and cause damage to lungs. These minerals include Chrysotile, Amosite, and Crocidolite
- Additional information: DEQ's Air Quality Division, NESHAPs Asbestos Coordinator at 517-373-7064