Waste Characterization and Generator Status

Office of Waste Management & Radiological Protection

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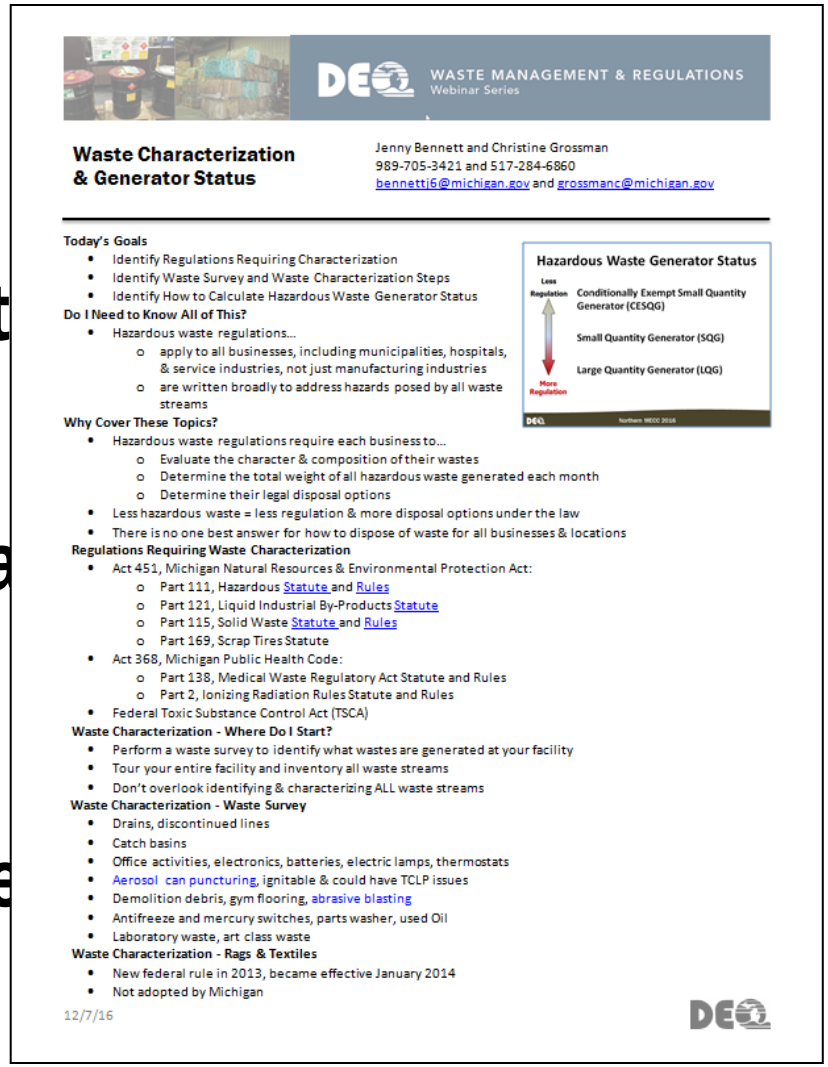

WASTE MANAGEMENT & REGULATIONS
Webinar Series

Waste Characterization & Generator Status

Jenny Bennett and Christine Grossman
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Today's Goals
- Identify Regulations Requiring Characterization
- Identify Waste Survey and Waste Characterization Steps
- Identify How to Calculate Hazardous Waste Generator Status

Do I Need to Know All of This?
- Hazardous waste regulations…
  - apply to all businesses, including municipalities, hospitals, & service industries, not just manufacturing industries
  - are written broadly to address hazards posed by all waste streams

Why Cover These Topics?
- Hazardous waste regulations require each business to…
  - Evaluate the character & composition of their wastes
  - Determine the total weight of all hazardous waste generated each month
  - Determine their legal disposal options
- 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

Regulations Requiring Waste Characterization
- Act 451, Michigan Natural Resources & Environmental Protection Act:
  - Part 111, Hazardous Statute and Rules
  - Part 121, Liquid Industrial By-Products Statute
  - Part 115, Solid Waste Statute and Rules
  - Part 169, Scrap Tires Statute
- Act 368, Michigan Public Health Code:
  - Part 138, Medical Waste Regulatory Act Statute and Rules
  - Part 2, Ionizing Radiation Rules Statute and Rules
- Federal Toxic Substance Control Act (TSCA)

Waste Characterization - Where Do I Start?
- Perform a waste survey to identify what wastes are generated at your facility
- Tour your entire facility and inventory all waste streams
- Don't overlook identifying & characterizing ALL waste streams

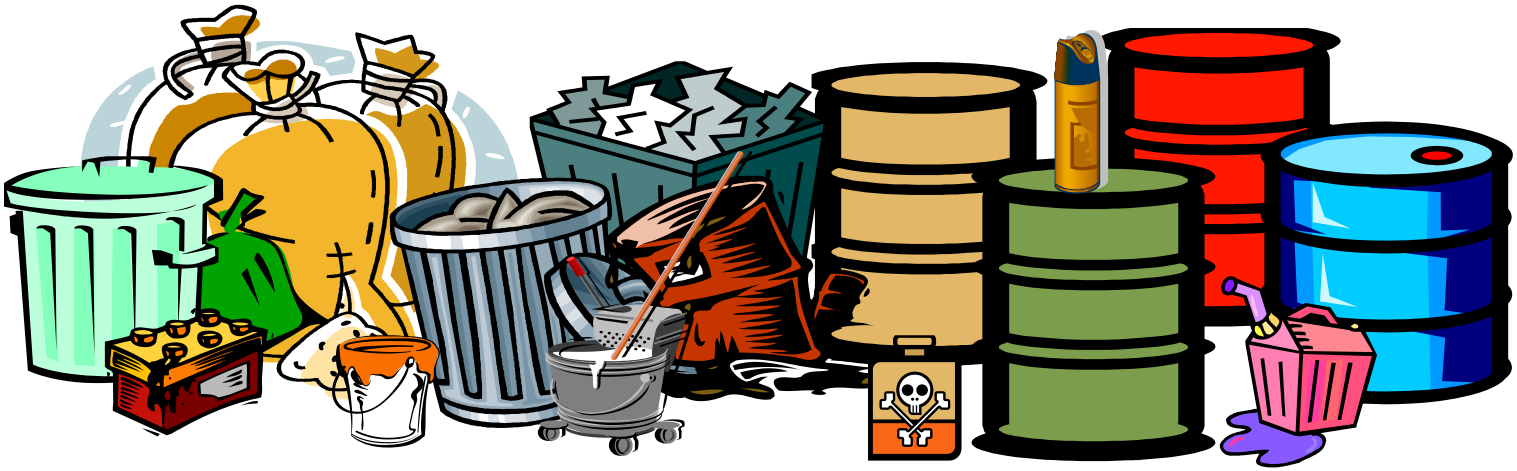
Waste Characterization - Waste Survey
- Drains, discontinued lines
- Catch basins
- Office activities, electronics, batteries, electric lamps, thermostats
- Aerosol can puncturing, ignitable & could have TCLP issues
- Demolition debris, gym flooring, abrasive blasting
- Antifreeze and mercury switches, parts washer, used Oil
- Laboratory waste, art class waste

Waste Characterization - Rags & Textiles
- New federal rule in 2013, became effective January 2014
- Not adopted by Michigan

12/7/16

Hazardous Waste Generator Status
Less Regulation
Conditionally Exempt Small Quantity Generator (CESQG)
Small Quantity Generator (SQG)
Large Quantity Generator (LQG)
More Regulation

WHAT TYPE OF WASTES DO I GENERATE?



Do I Need to Know All of This?

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Why Cover These Topics?

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- **Determine the total weight of all hazardous waste generated each month**
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There is no one best answer for how to dispose of waste for all businesses and locations

Waste Characterization Regulations

Act 451, Michigan Natural Resources & Environmental Protection Act:

- **Part 111, Hazardous**
- **Part 121, Liquid Industrial By-Products**
- **Part 115, Solid Waste**
- **Part 169, Scrap Tires**

Act 368, Michigan Public Health Code:

- **Part 138, Medical Waste Regulatory Act**
- **Part 2, Ionizing Radiation Rules**

Federal Toxic Substance Control Act (TSCA)

Waste Characterization

Where do I start?

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- Tour your entire facility and inventory all waste streams
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Waste Survey

Drains and Discontinued Lines

Drains

Automatically subject to waste regulations 90 days after taken out of service

Discontinued lines

Waste Survey

Catch Basins

Waste Survey
Office Activities

Electronics

Batteries

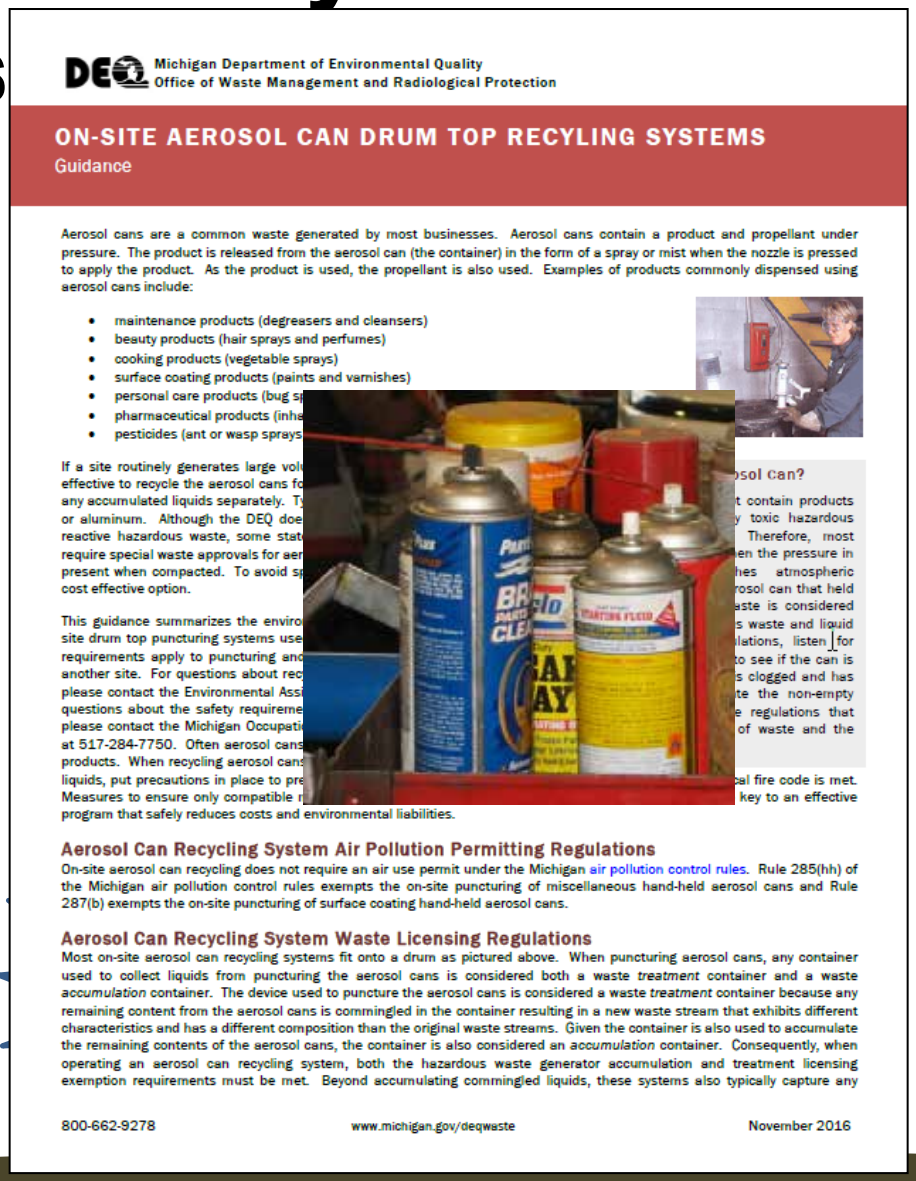
Electric lamps

Thermostats with mercury switches

Waste Survey

Aeros

Can crushing & puncturing



Michigan Department of Environmental Quality
Office of Waste Management and Radiological Protection

ON-SITE AEROSOL CAN DRUM TOP RECYLING SYSTEMS
Guidance

Aerosol cans are a common waste generated by most businesses. Aerosol cans contain a product and propellant under pressure. The product is released from the aerosol can (the container) in the form of a spray or mist when the nozzle is pressed to apply the product. As the product is used, the propellant is also used. Examples of products commonly dispensed using aerosol cans include:

- maintenance products (degreasers and cleansers)
- beauty products (hair sprays and perfumes)
- cooking products (vegetable sprays)
- surface coating products (paints and varnishes)
- personal care products (bug sp
- pharmaceutical products (inha
- pesticides (ant or wasp sprays

If a site routinely generates large vol
effective to recycle the aerosol cans fo
any accumulated liquids separately. Ty
or aluminum. Although the DEQ doe
reactive hazardous waste, some stat
require special waste approvals for aer
present when compacted. To avoid sp
cost effective option.

This guidance summarizes the enviro
site drum top puncturing systems use
requirements apply to puncturing and
another site. For questions about rec
please contact the Environmental Assi
questions about the safety requireme
please contact the Michigan Occupati
at 517-284-7750. Often aerosol cans
products. When recycling aerosol cans
liquids, put precautions in place to pre
Measures to ensure only compatible
program that safely reduces costs and environmental liabilities.

osol Can?
t contain products
y toxic hazardous
Therefore, most
en the pressure in
hes atmospheric
rosol can that held
aste is considered
s waste and liquid
lations, listen for
to see if the can is
s clogged and has
te the non-empty
e regulations that
of waste and the

cal fire code is met.
key to an effective

Aerosol Can Recycling System Air Pollution Permitting Regulations

On-site aerosol can recycling does not require an air use permit under the Michigan air pollution control rules. Rule 285(hh) of the Michigan air pollution control rules exempts the on-site puncturing of miscellaneous hand-held aerosol cans and Rule 287(b) exempts the on-site puncturing of surface coating hand-held aerosol cans.

Aerosol Can Recycling System Waste Licensing Regulations

Most on-site aerosol can recycling systems fit onto a drum as pictured above. When puncturing aerosol cans, any container used to collect liquids from puncturing the aerosol cans is considered both a waste *treatment* container and a waste *accumulation* container. The device used to puncture the aerosol cans is considered a waste *treatment* container because any remaining content from the aerosol cans is commingled in the container resulting in a new waste stream that exhibits different characteristics and has a different composition than the original waste streams. Given the container is also used to accumulate the remaining contents of the aerosol cans, the container is also considered an *accumulation* container. Consequently, when operating an aerosol can recycling system, both the hazardous waste generator accumulation and treatment licensing exemption requirements must be met. Beyond accumulating commingled liquids, these systems also typically capture any

800-662-9278 www.michigan.gov/deqwaste November 2016

Waste Survey
Remodeling/Demolition Debris

Demolition Debris

Gym Flooring

Abrasive Blasting

Waste Survey
Fleet Maintenance

Antifreeze &
Mercury Switches

Parts Washer

Used Oil

Waste Survey

Laboratory Waste

Art Class Waste

Waste Survey

Rags & Textiles

Waste Characterization

Who does it?

- Do the waste characterization yourself
- Hire a consultant
- Use the disposal company services
- Use a combination of the above

Waste Characterization

Knowledge

- MSDS
- Facility Process Information
- Technical Information
- Manufacturer Information
- Hazardous Waste Listings

Testing

Waste Characterization

Cautionary example for use of knowledge:

Analyses of wastes from dry cleaning processes using the newer "green" solvents are testing positive for chromium

Waste Characterization

Basics

- **Characteristic Hazardous Waste (D wastes)**
  - A waste stream found to be ignitable, corrosive, reactive, and/or toxic by testing.
- **Listed Hazardous Waste (F, K, P & U wastes)**
  - A common waste stream known to be hazardous without testing.
- **Hazardous Waste Mixture Rule**
  - Mixture of a listed hazardous waste with other non-hazardous wastes is a listed hazardous waste.
- **Hazardous Waste Derived From Rule**
  - Residues derived from treating a listed hazardous waste is listed hazardous waste.

Waste Characterization

Basic Steps

1. Is waste listed? Review lists of waste types & codes in rules.
2. Is waste characteristic? Analytic test or by knowledge (MSDS, knowledge of process, etc.).
3. Does an exclusion or exemption apply?
4. Do other regulations apply? (liquid industrial, solid waste, etc.)
5. Create & maintain records of characterization for at least 3 years from the date waste was last shipped offsite.
6. Re-characterize if there is a change in process or materials.

Waste Characterization

Step 1

Listed Hazardous Waste

Waste Characterization

What are listed hazardous wastes?

- **F Codes (Table 203a) –** Wastes from non-specific sources (e.g. spent chlorinated solvents, metal treatment wastewaters & sludges).
- **K Codes (Table 204a) –** Wastes from specific industries *(2014 rule change – Michigan Haz Wastes 001K and 002K rescinded).*

Waste Characterization

What are listed hazardous wastes?

- **P & U Codes (Table 205a-c) –** Commercial chemical products, off-specification products, container and spill residues including some Michigan only U Codes (e.g., formaldehyde, parathion, benzene, DDT, xylene)
  - *2014 Rule Change – Some Michigan Haz Wastes Rescinded*
  - *2016 Propose Rule Change – Additional Michigan Haz Wastes Proposed to be Rescinded*

- ***P Codes are all acutely hazardous.***

Waste Characterization

Listed Hazardous Waste Codes

Table 203a

EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
F020	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process, of tri- or tetrachlorophenol or of intermediates used to produce their pesticide derivatives. This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol	(H)
F021	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of pentachlorophenol or of intermediates used to produce its derivatives	(H)
F022	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tetra-, penta-, or hexachlorobenzenes under alkaline conditions	(H)
F023	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production of materials on equipment previously used for the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tri- and tetrachlorophenols. This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol	(H)

Acutely hazardous when "H" appears in Hazard Code Column.

Waste Characterization

Step 2

Characteristic Hazardous Waste

Waste Characterization

What are characteristic hazardous wastes?

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 Hazardous Waste
Common Tests

- **Flash point – Used for testing Ignitability < 140 F (D001)**

  Examples: paints, solvents

- **pH – Used for testing corrosivity ≤ 2 or ≥ 12.5 (D002)**

  Examples: acids, bases

- **Reactivity – Test as required for DOT classification for materials that are unstable at normal conditions, reacts violently with water, explode, and/or emit toxic gas (D003)**

  Examples: lithium hydride & trichlorosilane

Characteristic Hazardous Waste
Common Tests

- TCLP (Toxicity Characteristic Leaching Procedure)
  - Used for testing leaching potential for Table 201a hazardous constituents (D004-D043)
  - Examples: Paints or sludges containing metals or MEK, contaminated media

- Total Halogens - Used for testing used oils for chlorine, fluorine, bromine, etc. to determine if a “presumed” hazardous waste

Waste Characterization

Step 3

Exemptions and Exclusions

(Rules 202, 203, 204, 206, 207 and 228 of Part 111 -not all inclusive)

Waste Characterization

What are 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**
- **Wastes that are used or reused in a process to make a product are excluded provided there is no reclamation - *Beware of sham recycling & get DEQ concurrence on exemption. Supporting documents required***

Waste Characterization

What are exemptions & exclusions?

- Laboratory samples are exempt until being discarded
- 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
- Off-specification fuel (gasoline, kerosene, diesel, etc.) being recycled for use as fuel or burned as fuel

Waste Characterization

What are exemptions & exclusions?

- 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)
- Hazardous wastes from which precious metals are recovered (partial exemption)
- Dredge spoils from projects permitted by the U.S. Army Corps of Engineers or DEQ
- Laundered rags that are reused that would otherwise be a hazardous waste

Rags & Textiles

- **Disposable wipes under new federal rule being adopted**
  - **Took effect January 2014**
  - **Currently being adopted by Michigan**
  - **Excludes wipes contaminated with solvents that are laundered and reused or disposed of properly**
  - **To be excluded, must be managed in closed, labeled containers and cannot contain free liquids when sent for laundering and reuse or disposal**
  - **Requires records and cannot accumulate wipes for longer than 180 days**
  - **Michigan specific guidance under development**

Waste Characterization

What are exemptions & exclusions?

- **Recycled materials (*not all* see 40 CFR, Part 261.2, Table 1 [*Some reclaimed materials not considered solid wastes under RCRA, although they may exhibit a haz waste characteristic (e.g., commercial chemical products, sludges and by-products. Also, commercial chemical products being speculatively accumulated are not solid wastes under RCRA.]***
- **Household waste, including single & multiple residences, hotels & motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, & day-use recreational areas**
- **Empty container residues**

Empty Containers
(Rule 207)

<u>After</u> all *non-acute hazardous waste* or liquid industrial by-product has been removed using common practices:

- **No more than 1 inch or not more than 3.0% by weight of the total capacity of the container for containers less ≤ to 119 gallons**
- **No more than 1 inch or not more than 0.3% by weight of the total capacity of the container for containers > than 119 gallons**

Empty Containers
(Rule 207)

Acute Hazardous or Severely Toxic Waste:

- Triple rinse with appropriate solvent or cleaned by proven equivalent method
- Remove inner liner that prevented contact with container
- If listed due to characteristic, empty if no longer exhibits the characteristic
- Rinse water/removed residue would be hazardous waste based on knowledge

Empty Containers
(Rule 207)

Compressed Gas:

- Container pressure is equal to atmospheric pressure
- Container is not clogged
- No audible liquids in container when shaken

Waste Characterization

Step 4

Liquid Industrial By-Product

Waste Characterization

What is Liquid Industrial By-Product?

- Part 121 of Act 451
- Determine by using the Paint Filter Test, Method 9095 in EPA SW-846
- If there are any free liquids in the by-product or if the by-product is thinner than butter at or < 100 F, it should be managed as a liquid industrial waste

Waste Characterization

What is Liquid Industrial By-Product?

- Liquid hazardous wastes from a CESQG.
- Some wastewater including most mobile power washing wastewater, carpet cleaning wastewater, food processing wastewaters.
- Most sludges from trench drains or blind sumps (unless there's been a release making it a hazardous waste).
- Includes liquid wastes from other locations besides "industrial" sites (e.g. municipal, health care, etc.).

Waste Characterization

What is Liquid Industrial By-Product?

- Most antifreeze
- Storm sewer cleanout waste
- Grease trap waste
- Most used oils being recycled
- Off-specification fuels being recycled

Waste Characterization

Step 5

Waste Characterization Record

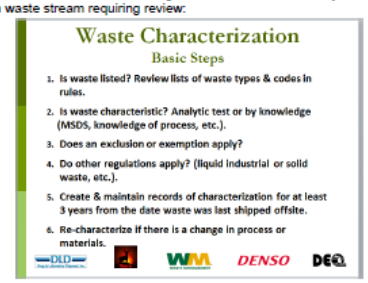
(Rule 307)

Waste Characterization

Waste Characterization Record

To meet the waste characterization recordkeeping requirements of Rule 307 (MAC R 299.9307), consider creating a record that details your answers to the waste characterization questions provided below. This detail would ensure thorough documentation of your determination and would be in addition to the following records that should already be assembled and available at the site of generation for each waste stream requiring review:

- the waste type
- a narrative description of the waste
- the source of waste
- any test results obtained from sampling and analyzing the waste
- a description of the sampling procedure used
- details on how the sample was determined to be representative of the waste stream
- a copy of Safety Data Sheets (SDS) or other reference materials relied upon for making the waste determination, including calculations used to evaluate subpart BB and CC applicability (to determine the ppmv volatile organic compound content of the waste)



Waste Characterization Questions

The questions below do not address radioactive waste, infectious or pathogenic medical waste, or Toxic Substance Control Act applicability. Consult with a specialist on these topics if you have a waste that may be subject to these regulations. To locate assistance on these topics, contact the Environmental Assistance Center at 1-800-662-9278 or deq-assist@michigan.gov. When reviewing each question, advance to the next question if you answer NO.

Listed Hazardous Waste Review

1. Is this an unused raw material chemical product containing a sole active ingredient?
   If Yes: Is there a SDS available?
   If Yes: Is material a commercial chemical product listed in Part 111 Table 205a, 205b, or 205c **(P or U Listed)**?
   If Yes = Waste is a listed hazardous waste, advance to listed waste exclusion review.

2. Does the waste contain spent solvents or is it a wastewater treatment waste not discharged directly to the wastewater treatment plant pursuant to a permit issued by the treatment authority **(F Listed)**?
   If Yes: Does the spent solvent or process generating the waste make the waste a hazardous waste, by definition because it is listed in Part 111, Table 203a?
   If Yes = Waste is a listed hazardous waste, advance to listed waste exclusion review.

3. Does the process generating the waste make the waste a hazardous waste, by definition because the process waste is listed in Part 111 Table 204a **(K Listed)**?
   If Yes = Waste is a listed hazardous waste, advance to listed waste exclusion review.

Listed Hazardous Waste Exclusion Review

Do any Part 111 exclusions or exemptions apply?
If Yes: Specify the exclusion found in Rule 202 (waste), Rule 203 (hazardous waste) 204 (exclusion), Rule 205 (CESQG), Rule 206 (recyclable material), Rule 228 (universal waste), etc. and include any relevant documentation substantiating the exclusion applicability in your waste characterization record, then advance to question 4 to determine if waste exhibits any characteristics that make it a hazardous waste.
If No – Waste remains a listed hazardous waste that must be managed using the listed hazardous waste code(s). Continue to step 4 if desiring to identify the hazardous waste characteristics that apply.

Waste Characterization Record

Completed by: **Completion date:**

Waste description:

Waste source:

Waste type:

Waste codes:

Waste sample details including date sampled, location(s) sampled, collection procedure, analysis method, etc.):

Product name for SDS considered:

Subpart BB or CC applicability:

LDR underlying hazardous constituents:

Listed Review

1. Is this an unused raw material that is commercial chemical product listed in Part 111 Table 205a, 205b, or 205c (P or U listed)?

2. Does the waste contain spent solvents that meets the listing in Table 203a or is the waste a wastewater treatment sludge meeting the listing in Table 203a (F listed)?

3. Does the process generating the waste make the waste a hazardous waste, by definition because the process waste is listed in Part 111 Table 204a (K listed)?

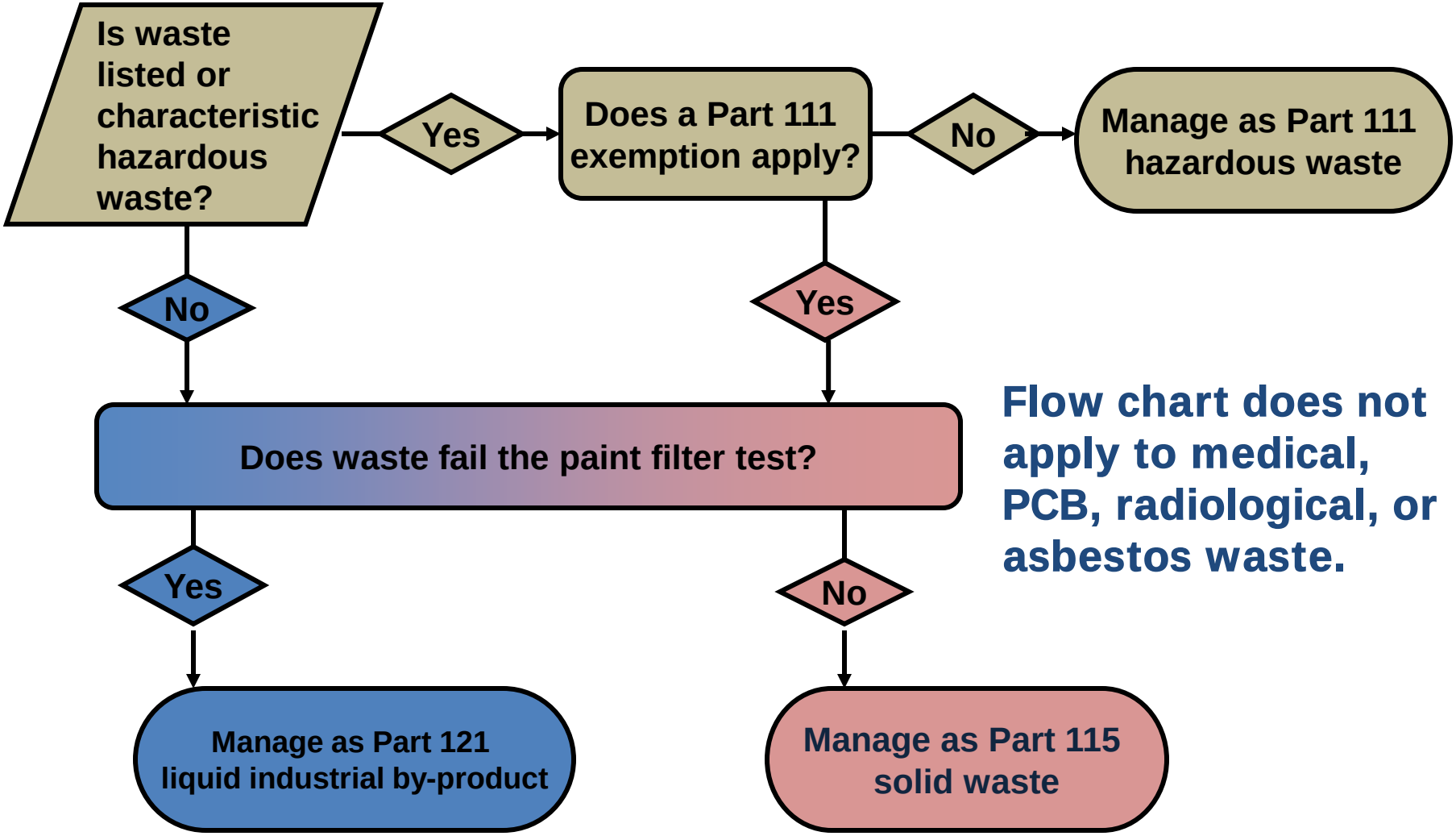
Listed Waste Exclusion Review - List any exclusion relied upon to exclude waste from hazardous waste regulation (e.g. continued use).

Waste Characterization

Step 6

Re-characterize if process or materials change!

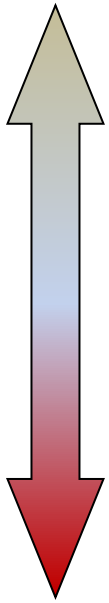
Basic Waste Characterization Flow Chart



Flow chart does not apply to medical, PCB, radiological, or asbestos waste.

Hazardous Waste Generator Status

Less Regulation



More Regulation

Conditionally Exempt Small Quantity Generator (CESQG)

Small Quantity Generator (SQG)

Large Quantity Generator (LQG)

Hazardous Waste Generator Status

Conditionally Exempt Small Quantity Generator (CESQG) (Rule 205)

- Monthly haz waste generation < 220 lbs or ~ 1/2 drum
- Total haz waste accumulation must always be less than 2200 pounds (5 drums)
- Wastes are properly disposed under other regs
- Records of waste characterization and generator status are maintained for 3 years

Hazardous Waste Generator Status

Small Quantity Generator (SQG)

- Monthly hazardous waste generation 220 lbs – 2,200 lbs or ~ ½ to 5 drums

- Total hazardous waste accumulation must always be less than 13,200 pounds (30 drums)

Hazardous Waste Generator Status

Large Quantity Generator (LQG)

- Generates 2200 pounds of non-acute hazardous waste per month

- Generates and accumulates 2.2 pounds of acute or severely toxic waste

Hazardous Waste Generator Status

Calculating Amount of Hazardous Waste Generated

- § Calculate the amount ***generated***, not the amount ***shipped***
- § Calculate the amount in ***pounds*** ***or kilograms***
- § Include hazardous waste ***treated and/or disposed on-site*** unless it is hard piped to POTW

Hazardous Waste Generator Status

Calculating Amount of Hazardous Waste Generated

- **Do not include hazardous waste managed as a *universal waste***

Electronics

Batteries

Pesticides

Thermostats

Lamps

Pha

ze

Recorded Webinars
9/21/16 Pharmaceuticals
11/16/16 Universal Waste

Hazardous Waste Generator Status

Calculating Amount of Hazardous Waste Generated

- **Do not include *liquid industrial by-product and/or used oil***

- **Do not include waste specifically excluded from Part 111 like:**

  - ü ***Recycled/disposable solvent rags***
  - ü ***Scrap metal being recycled***
  - ü ***Contaminated fuel being recycled***
  - ü ***POTW approved direct discharges***

Hazardous Waste Generator Status

Calculating Amount of Hazardous Waste Generated

- Review total/maximum amount of hazardous waste generated and accumulated at any 1 time during the month.
- Compare amount of hazardous waste generated and total accumulated during the month to the CESQG, SQG, and LQG definitions/limits.
- Generator limits are found in Rule 306 of the Part 111 rules.

Hazardous Waste Generator Status

Calculating Amount of Hazardous Waste Generated

	CESQG	SQG	LQG
Amount of acute or severely toxic haz waste generated or accumulated at any time.	1 kg. (2.2 lbs.) or less	1 kg. (2.2 lbs.) or less	>1 kg. (2.2 lbs.)
Amount of acute spill residue or cont. soil generated or accumulated at any time	100 kgs.(220 lbs.) or less	100 kgs. (220 lbs.) or less	>100 kgs. (220 lbs.)
Amount of non-acute haz waste generated in 1 calendar month.	100 kg. (220 lbs.) or less	>100 kg. (220 lbs.) but <1000 kg (2200 lbs.)	>1000 kg. (2200 lbs.)

Hazardous Waste Generator Status

Calculating Amount of Hazardous Waste Generated

	CESQG	SQG	LQG
Approx. volume of non-acute haz waste.	25 gallons (assuming the liquid wt. equals that of water)	25 to 250 gallons	200 to 250 gallons
Max amount of non-acute haz waste that can be accumulated on site.	1000 kg (2200 lbs.)	6000 kg (13,200 lbs.)	No maximum amount
Max time period before waste must be shipped.	No time limit if never exceeding 2200 lbs.	180 days unless shipped over 220 miles; then 270 days	90 days

Hazardous Waste Generator Requirements

- See Chapter 2, Table 2.6 in DEQ Guidebook at www.michigan.gov/ehsguide & join us for our upcoming webinars in the series

TABLE 2.6 Summary of the Hazardous Waste Generator Requirements

	Conditionally Exempt Small Quantity Generator (CESQG)	Small Quantity Generator (SQG)	Large Quantity Generator (LQG)
Off-site Treatment, Storage or Disposal Destination for Waste	Licensed solid waste disposal facility (solids); Liquid industrial by-product designated facility (liquids); licensed or exempt recycler; or licensed hazardous waste facility. Also, universal waste handler or universal waste destination facility for hazardous waste managed as universal waste.	Licensed hazardous waste facility; or exempt hazardous waste recycling facility. Also, universal waste handler or universal waste destination facility for hazardous waste managed as universal waste.	Licensed hazardous waste facility; or exempt hazardous waste recycling facility. Also, universal waste handler or universal waste destination facility for hazardous waste managed as universal waste.
Maximum Time Period Before Waste Must Be Shipped	No time limit if never exceed 2,200 pounds.	180 days, unless shipping over 200 miles, then 270 days. Storage beyond time period requires a hazardous waste license for storage.	90 days and storage beyond time period requires a hazardous waste license for storage unless meeting Rule 306(7) (R 299.9306(7)).
Maximum Amount	2,200 pounds non-acute and/or 2.2 pounds or less	13,200 pounds non-acute and/or 2.2 pounds or less acute. If	

Upcoming Waste Webinars

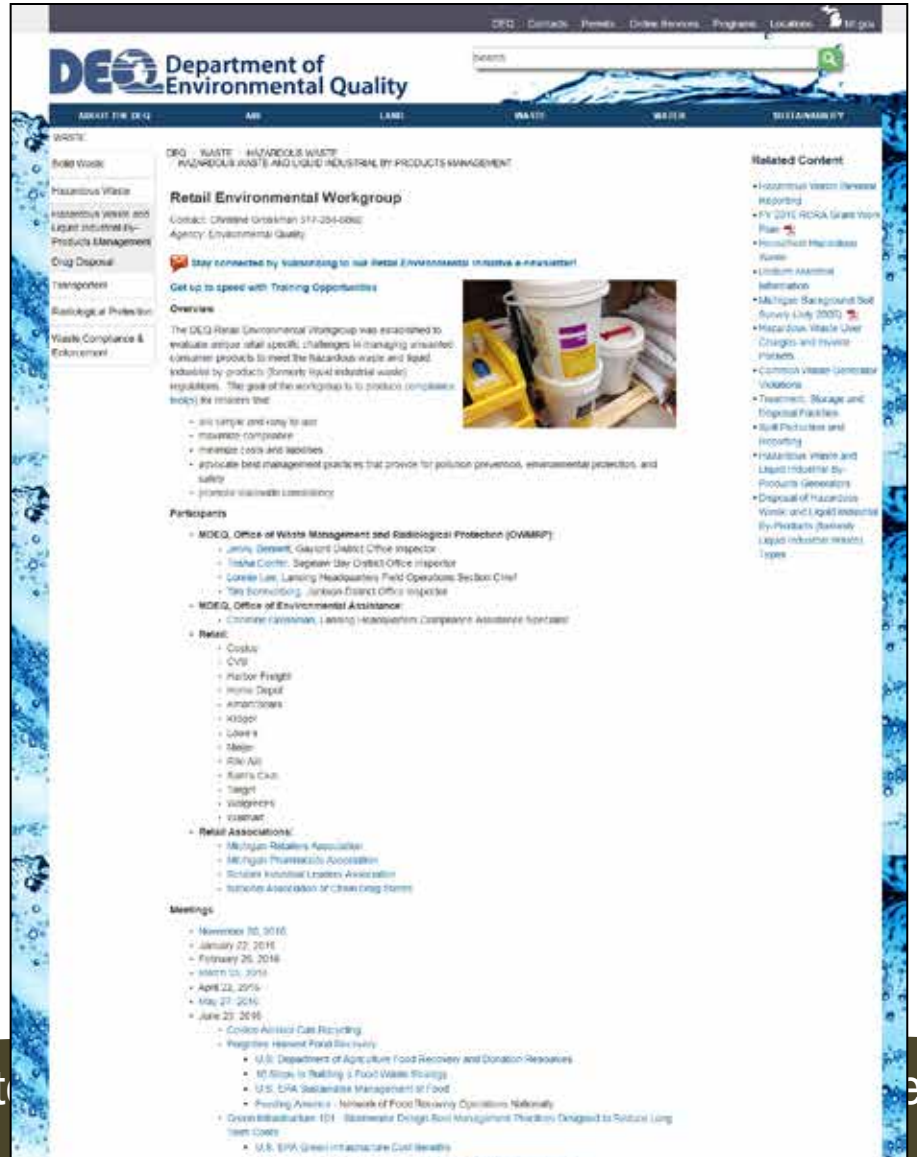
- February 2017 - Used Oil
- March 2017 - Hazardous Waste & Liquid Industrial By-Product Accumulation and Labeling
- April 2017 - Hazardous Waste & Liquid Industrial By-Product Inspections and Recordkeeping
- May 2017 – CESQG & Liquid Industrial By-product Requirements

Questions

New DEQ E-Subscriptions

- Retail Environmental Initiative
- Recycling Reporting
- Recycling Directories
- Recycling Updates

www.michigan.gov/deqwaste



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