



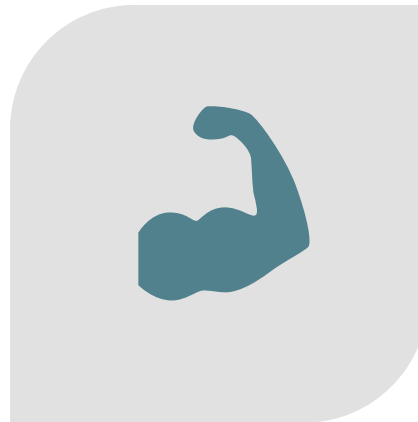
Welcome to Waste 101

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Today's Goals



Provide an overview of
waste regulations



Arm you with resources
you need



Entertain you at the
same time

Waste Regulations Overview

Hazardous
Waste –
Part 111

Liquid Industrial
By-Product –
Part 121

Solid Waste &
Compost - Part
115

Scrap Tires –
Part 169

PCB Waste –
TSCA

Medical Waste –
Part 138

Radioactive Waste –
NRC

When is it a Waste?

A waste is any material, once generated, that **cannot be used for its original intended purpose**, including materials that are:

- Burned as fuel
- Accumulated and recycled or reclaimed
- Discarded, abandoned or disposed

Beyond Waste? Market development.

Is it a waste or good stuff?

That Depends who you ask – me or my wife!

Why Michigan laws seek to address and answers these questions, and exempts most household disputes:

- Liability for Taxpayers – Abandoned Waste
- Impact to Environment & Human Health
- Does it have economic value?
- Fire or Health Hazard

One Stop for EGLE Compliance Information

Michigan Guide to Environmental Regulations

How Do I Start?

Plan Ahead – Starting a New Business

- Expired product, damaged items, waste pieces, or by-products.
- Consider options for by-products
- Best management practices are important to protect human health, animal health, water, land, air, etc.
- **Find Experts in your Field. Hire Consultants. Look for Guidebooks for your Industry.**

Operating or Taking Over?

- 3 Years of Records
- Tour your entire facility and inventory all waste streams (Waste Survey)

Coffee Grounds – Waste or Compost?

Context Matters – Did someone dump it on your land? Or in a River or Lake?



How Do I Start

Waste Survey – All the different wastes generated on site

- What is your liability?
 - Fires, Spills, Penalties, Contaminated Property, Public Relations
- What is your opportunity?
 - Reduce Waste, Re-Use Material, Eliminate Waste, Sell By-Products
 - *Hazardous Materials require regulatory notification - Expired solvent based paint for a nickel? Avoid sham recycling.
- Waste Review – Repeat the Process as Needed

Houston, We Have A Problem!

“Do we have to save them all??? Actual photo & question?”



Management Decision

Waste – You have decided that you can't use it.

Now what?

Materials Management – Paradigm Shift into thinking about how we manage materials.

3 R's - Reduce, Re-Use, Recycle

Avoid Generating Waste - Bags

Re-Use Materials until no longer feasible

Recycle – Back into the market, Compost, Make Something New

- Market Development
- Examples –
 - o Plastic Grocery Bags made into plastic wood boards – Emmet County
 - o Concrete & Asphalt – Crushed or shredded for road base & driveways.
 - o Sawdust, pelletized for fuel, horse or animal bedding, compost companies
 - o Scrap Tires – Shredded to be burned for energy recovery or rubberized products

Solid Waste

Regulated under Part 115 of Act 451

Solid waste must be disposed in a licensed municipal solid waste landfill or a permitted municipal solid waste incinerator, unless it is managed to meet a solid waste exemption

- Numerous Exemptions
- Some materials otherwise regulated, such as Scrap Tires.

This Would Be A Problem

Demolition Debris at a Scrap Metal Yard



Abandoned Bails of Plastic in Flint, Michigan



Zoomed in Picture of Abandoned Plastic

How can your community prevent this?



Solid Waste (Part 115)

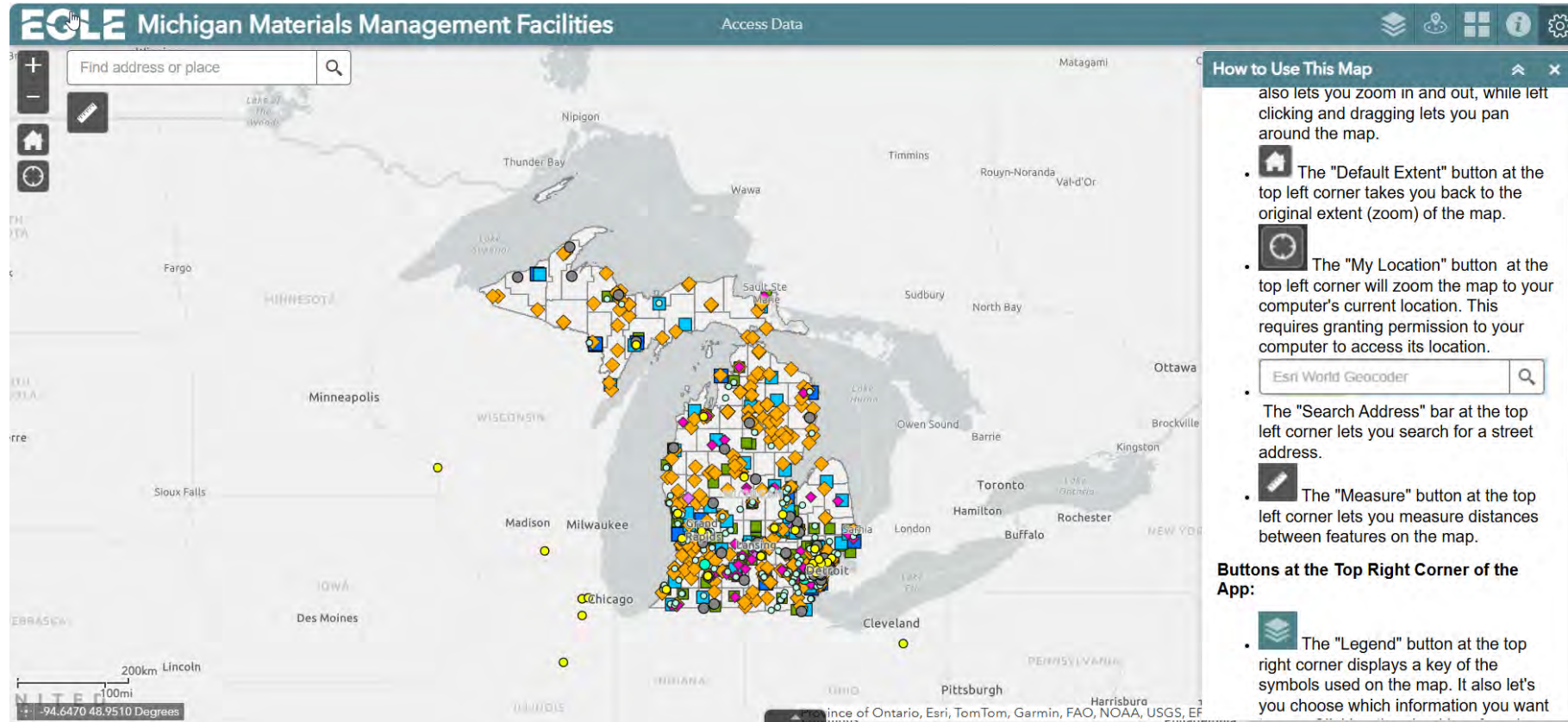
Landfill Types

- Demolition Debris – Type 3 Landfill
- Municipal Solid Waste – Type 2 Landfill
- Hazardous Waste Landfill – RCRA & Part 111 Permit & Registration

NEW Part 115 Amendments in Effect

- County Solid Waste Plans – Required for Every County
- Registration Required
 - o Transfer facilities - New Part 115 Rules require all Transfer Facilities to register
 - o Compost Facilities – Must Register & Meet minimum requirements
 - o Material Management – Recycling Etc. must register
 - o Etc.

Michigan Materials Management Facilities Map



Found at Michigan.gov/EGLEM3

Materials Management Sites Must Notify EGLE on ReTRAC

- ❖ Anaerobic Digesters
- ❖ Compost Facilities
- ❖ Landfills (reporting only)
- ❖ Transfer Facilities
- ❖ Materials Recovery (Recycling) Facilities
- ❖ Etc.

ReTRAC Authorizations
Program

Businesses - No Burning Stuff

- ❖ Businesses prohibited from burning solid waste
- ❖ Residents can burn wood, paper; no plastics or other items.
 - May be restricted by local code.
 - Everyone wants to live where no codes exist, until you need them...



Landfill Prohibited Materials

- Used Oil
- **Liquid Waste**
- Lead Acid Batteries
- Ignitable Spray Cans
- Lithium Batteries - Fires
- Hazardous Waste
(from SQG & LQG)
- Radioactive Waste
 - High & Low Level
- PCB Waste
- Medical Waste
- Empty Drums
- **Whole Tires**
- Returnable Beverage Containers
- Sewage
- Asbestos

Recycling vs Sham Recycling

Recycling must be legitimate and not a cheaper disposal method. Regulations in effect

- Speculative Accumulation
- Abandonment is Disposal

Recycling Metal – Reduced Energy, Reduced Wastewater, Waste, etc.

Recycling Paper – Same

Recycling Glass – Same

Recycling Styrofoam – More Complicated

Recycling Cardboard - Same

State & Local Regulation

Part 115 – Provides Specific Regulatory Authority for Solid Waste & Materials Management Facilities

County Solid Waste Plan – Required shift to Materials Management Plans

Code Enforcement – County, City, Township Etc.

- Zoning Enforcement - To assist locals, we have an [Environmental Crimes Handbook](#) and often host with locals, academy's to help train local officers. You can have them e-mail me for more information on that at grossmanc@michigan.gov
- Local Fire Department
- Codes Against Nuisance Dumping

Asbestos



Used in more than 3000 products over the past 100 years for its insulation and fire protective properties



Common products include pipe insulation, **floor and ceiling tiles, roofing material**, and electrical appliances



Found in a wide range of settings including industrial and manufacturing, school and universities, and residential properties

Asbestos Continued...

- Asbestos is the general name for 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 is available through the EGLEs Air Quality Division, NESHAPs Asbestos Coordinator at 517-373-7064

See Michigan Guidebook: Chapter 1.16

[Michigan Guide to Environmental Regulations](#)

Asbestos

- Generally contained and disposed in Type II Municipal Solid Waste landfill if the landfill has been approved to accept asbestos-containing wastes
- Regulated by MIOSHA
- Regulated by Air Quality Division under the National Emission Standards for Hazardous Air Pollutants (NESHAP)

How Do I Know if My Waste is Hazardous Waste?

Federal Law (RCRA 40 CFR) and State Law (Part 111) identifies hazardous waste, with up to \$30,000 per violation per day for **significant non-compliance**.

- Listed Toxics
- Plus 4 Characteristics
- Residential Exclusion
- If you're in business, then it's your responsibility.

Household Hazardous Waste

Technically this waste is exempt from most State & Federal Regulation

Landfills may reject household hazardous waste / can not accept liquids

Residential Options?

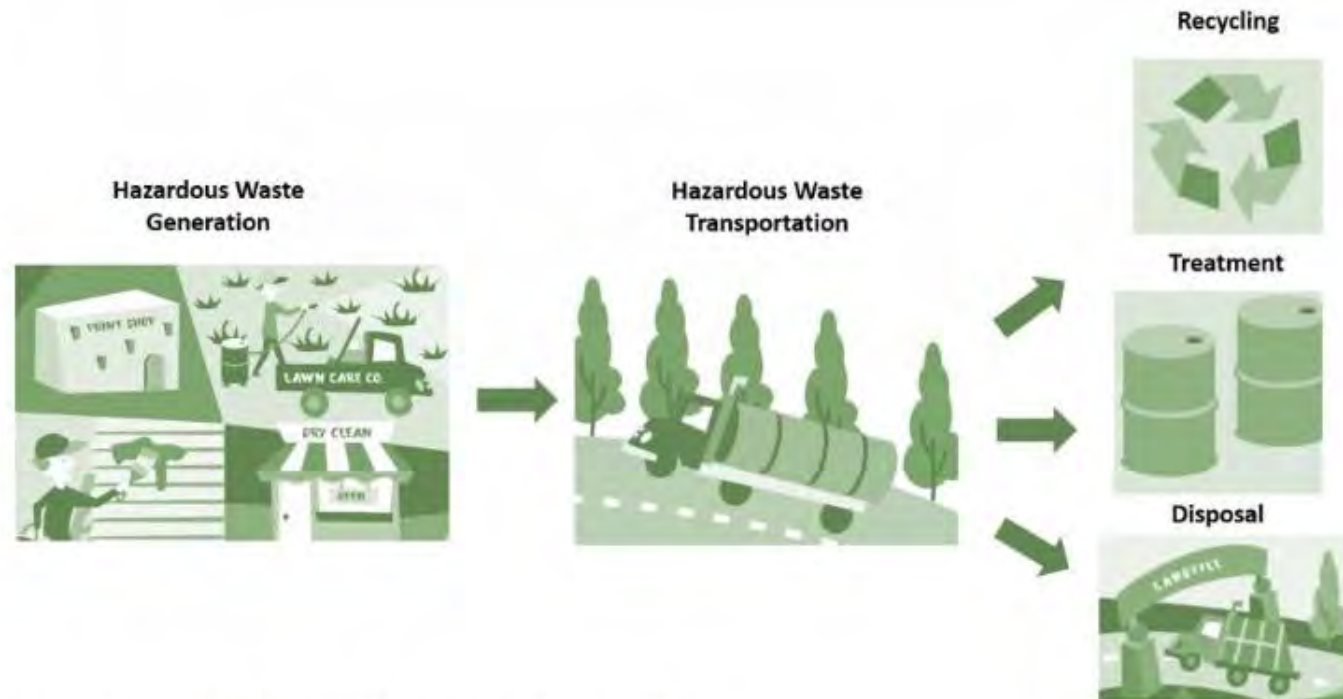
- Solvent Based Paint
- Mercury
- Old Pesticides

County Household Hazardous Waste Programs

- Highly Variable based upon County
- List of Counties & Resources: [Disposing of household hazardous waste](#)

Hazardous Waste Overview

Since 1976, hazardous waste requires **"cradle to grave"** manifesting, meaning hazardous waste is tracked from the time it is created, while it is transported, treated, stored, and until it is ultimately disposed.



RCRA's Cradle-to-Grave Hazardous Waste Management System

<https://www.epa.gov/hw/learn-basics-hazardous-waste>

Hazardous Waste Regulations

Regulated under Part 111 of Act 451, parallel's RCRA, 1976

- Applies to waste determined to be a threat to human health or the environment.
Generator must make determinations.
- **Applies to all businesses, municipalities, hospitals, and service industries, not just manufacturing.**

Hazardous Material vs. Hazardous Waste

- **“Haz Mat”** is regulated under OSHA rules, regulates products and materials that are hazardous.
 - Losing Product costs money – It has Value.
- **“Hazardous Waste”** - *Separate and specific rules under EPA, for waste.
 - o Losing waste saves money. Rules get very specific for this reason, including penalties for storage of certain volumes longer than allowed, \$30,000 / day.
 - 180 Days Small Quantity Generators
 - 90 Days Large Quantity Generators.

Waste Characterization

Is the waste **listed** in the Part 111 / RCRA hazardous waste rules?

Does the waste **exhibit a characteristic** that makes it hazardous?

- **Ignitable**
- **Corrosive**
- **Toxic**
- **Reactive – Fire, Boom, Gas**



Characteristic Waste Codes

Part 111, Rule 302

Ignitable - D001 – Flash below 140F

Corrosive - D002 – pH below 2 or above 12.5

Reactive - D003 – Fires / Explosive / Toxic Gas

Toxic - D004 – D043 (Table 201a)

Severely Toxic – 001S - 007S

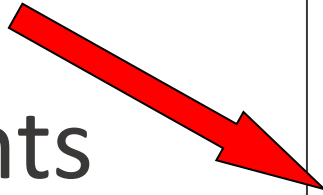
(Table 202, includes dioxins & furans)

Toxic Characteristic Hazardous Waste Codes

Toxic Constituents

Part 111 Rules,

Table 201a



R 299.9217 Table 201a.

Rule 217. Table 201a reads as follows:

Table 201a			
EPA Hazardous Waste Number	Chemical Abstract Services Number	Material	Extract Concentration milligrams per liter
D004	440-38-2	Arsenic	5.0
D005	7440-39-3	Barium	100.0
D018	71-43-2	Benzene	0.5
D006	7440-43-9	Cadmium	1.0
D019	56-23-5	Carbon tetrachloride	0.5
D020	57-74-9	Chlordane	0.03
D021	108-90-7	Chlorobenzene	100.0
D022	67-66-3	Chloroform	6.0
D007	7440-47-3	Chromium	5.0
D023	95-48-7	o-Cresol	200.0**
D024	108-39-4	m-Cresol	200.0**
D025	106-44-5	p-Cresol	200.0**
D026	-----	Cresol	200.0**
D016	94-75-7	2,4-D (2,4-Dichlorophenoxyacetic Acid)	10.0
D027	106-46-7	1,4-Dichlorobenzene	7.5
D028	107-06-2	1,2-Dichloroethane	0.5
D029	75-35-4	1,1-Dichloroethylene	0.7
D030	121-14-2	2,4-Dinitrotoluene	0.13*
D012	72-20-8	Endrin (1,2,3,4,10,10-hexachloro-1,7-Epoxy-1,4,4a,5,6,7,8,8a octahydro-1,4-endo, endo-5,8-dimenthano naphthalene)	0.02

HW Generators – 3 Categories

1. Very Small Quantity Generator (VSQG)

- o < 100 Kg in a Calendar Month
(212 pounds or about 26.5 gallons total generated on site in a month)

2. Small Quantity Generator (SQG)

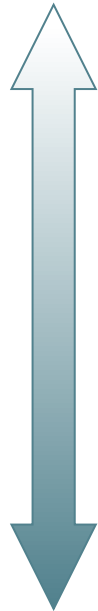
- o 100 - 1,000 Kg (212 to 2,120 pounds) of hazardous waste in a calendar month.
- o Approximately 26.5 gallons to 265 gallons (5 drums)
- o Must not generate 1 kilogram or 2.2 pounds of acute

3. Large Quantity Generator (LQG)

- o > 1,000 Kg
(Over 2,120 pounds or about 265 gallons) of hazardous waste in a calendar month or 1 Kilogram of acutely hazardous waste.

Hazardous Waste Generator Category

Less
Regulation



More
Regulation

Solid Waste

Liquid Industrial By-products Generators (LIB)

Universal Waste Generators

Very Small Quantity Generators (VQGs)

Small Quantity Generators (SQGs)

Large Quantity Generators (LQGs)



Hazardous Waste Generator Category

Once all hazardous wastes have been identified, check exemptions or exclusions.

Examples: Electronics Recycling,
Fluorescent Bulbs, Corrosive Waste
Neutralization

Generator Responsibilities

- ❖ Containerize the Waste
- ❖ Characterize the Waste
- ❖ Notification EQP 5150
- ❖ Train staff to manage waste appropriately
 - Containerize, Characterize, Label Waste, Ship Waste, Manage Records
- ❖ Use Licensed hauler to transport waste offsite timely
- ❖ Use a Permitted and Licensed Disposal Facility
- ❖ Maintain Records for 3 years, minimum
- ❖ CRADLE TO GRAVE
- ❖ **Government's Responsibility? Oversight**

Waste Gasoline Best Management Practices - Be the Expert



Episodic Generator - Spill or Planned Removal - EQP 5150

Episodic Hazardous Waste Generation Basics

Allows a site to maintain their lower generator category, for the year, if approved for a one time “Episodic Event”. Requirements include:

Requires EQP 5150 **notification**

[Hazardous waste program forms and license applications](#)

Specific timeframes

- planned 30 days in advance
- unplanned within 72 hours of spill or accident

Is this regulated waste?



Liquid Industrial By-Products

Part 121

- Michigan regulates liquid waste – Paint Filter Test (if liquid drips through)
- All must be characterized, including contaminants
- Generators must maintain records for 3 years
- Containerize the waste, prevent release
- Use a Registered Transporter & Designated Receiving Facility (Receiving Facility must register and obtain EPA ID Number, File Annual Reports)
- Solidify On Site?

Liquid Industrial By-Product (LIB)

- VSQG hazardous waste – Subject to LIB requirements
- Examples of LIB that are not HW but are regulated as LIB include:

Used oil

Catch basin clean out waste

Antifreeze

Contaminated fuel

Wastewaters

Brine

Sludges

Wash waters

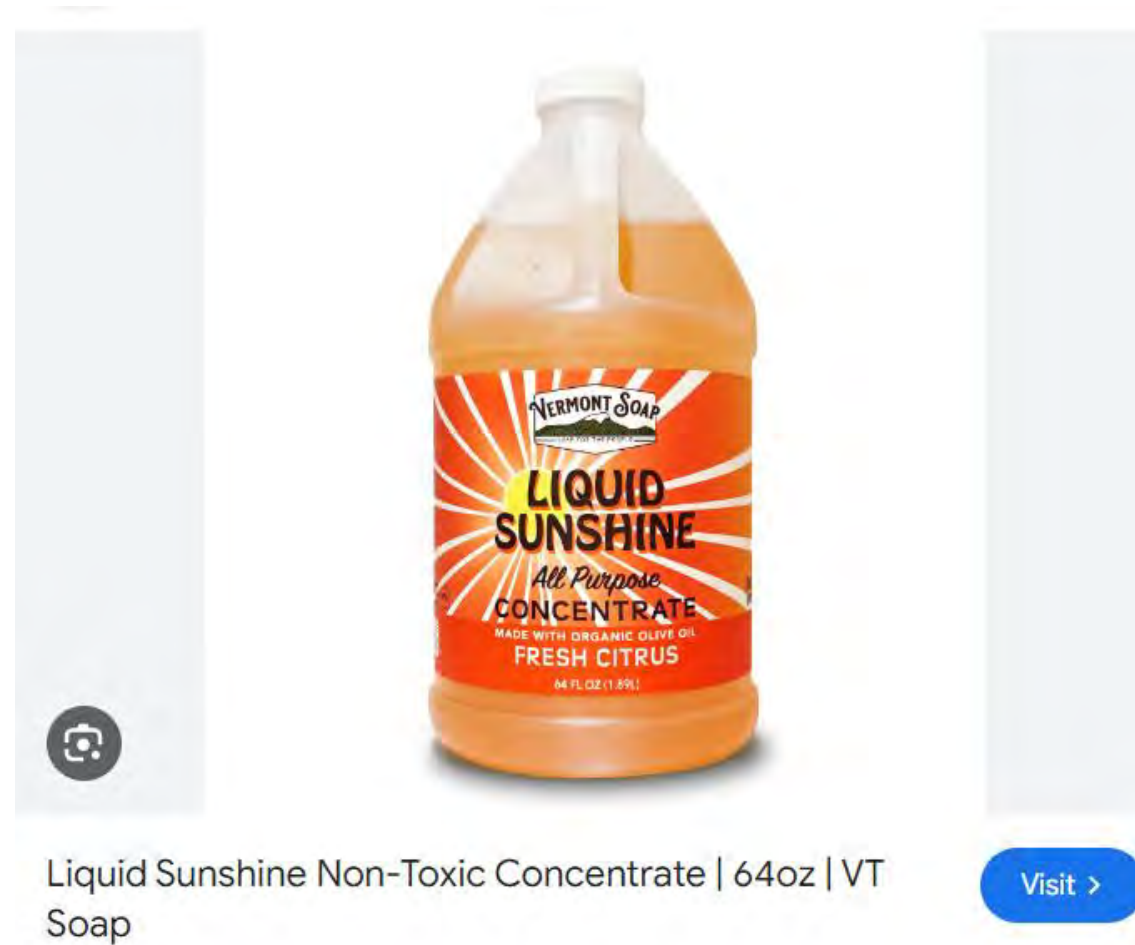
Leachate

Some sanitary clean out waste

What if I have nothing hazardous?

Can't I dump this on the ground?

It's liquid sunshine, non-toxic!



Liquid Sunshine Non-Toxic Concentrate | 64oz | VT Soap

Liquid Industrial By-Product (LIB)

Generators of liquid industrial by-product must...

- o Label Containers – Date & Identify Contents
- o Store Protected from Weather & Vandals
- o Must keep exterior of all vehicles, containers, & tanks clean
 - Prevent & report release to ground – PEAS 1-800-292-4706
 - Use permitted registered LIB transporter
 - Receive confirmation that each LIB shipment arrived at an appropriate LIB Designated Facility
 - Keep records available for inspection.

LIB – What's Wrong With This Picture?



Liquid Industrial By-Product

Must not be stored outside

Here we have:

- No containment
- Frozen expansion
- Exceeds maximum of 2 totes high



Used Oil



Must be labeled with the words “Used Oil”

Must be protected from the weather and vandals.

Secondary Containment?
Depends upon the volume.

Part 5 Rules and SPCC Plan

Threshold Management Quantities:

- o Oil – Storage Capacity
 - Total 1,320 gallons, single tanks >660 gallons
- o Salt (5 tons)
 - Liquid – 1,000 gallons
- o Table 1 – Lists Part 5 Compounds
 - Indoors – 2,200 lbs
 - Outdoors – 440 lbs

- ❖ Scrap Tires & Tire
Derived Fuel
- ❖ Grants
 - Pre 1980 tires
 - After 1980 often
requires a lien



Medical Waste

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

Many agencies regulate medical waste, including:

- 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
- Local Health Departments – Local ordinances

Medical Waste

Medical Waste Regulatory Act, under Public Health Code requires:

- Producer registration every 3 years
- Medical Waste Management Plan
- Employee training records
- Proper packaging
- Storage no longer than 90 days - unless only sharps, then sharps container must be shipped when 75% full or within 18-months of accumulation start date
- Shipment records

See Michigan Guidebook: Chapter 2.5

Radioactive Wastes

The Nuclear Regulatory Commission (Federal Government) regulates highly radioactive waste.

Michigan Regulates

- Naturally Occurring Radiological Material (NORM) Wastes from oil, gas, brine, chemical, and water treatment industries
- Low Level Radioactive Wastes – Disposal Capacity
- Radon – Indoor Air Program
- Emergency Preparedness – Nuclear Plants, etc.

See Michigan Guidebook: Chapter 10

Toxic Substances Control Act (TSCA)

- Applies to the manufacture, processing, distribution, marking, use, storage, cleanup, and disposal of PCB-containing wastes
- Regulation of TSCA is implemented by EPA
- Sources of PCBs include dielectric fluids, heat transfer fluids, capacitors, hydraulic fluids, etc.
- See Michigan Guidebook: Chapter 4, Section 4.5

Waste Webinar Series & Other Resources

[EGLE Waste Webinar Series \(Michigan.gov/EGLEEvents\)](https://Michigan.gov/EGLEEvents):

- Can be used to fulfill basic HW training requirements, though you may discover that more site-specific training is required. We recommend private HW training companies in that case
- You can also find very detailed guidance documents on the EGLE website
 - [Common Violations](#)
 - [Generator Guidance Website](#)
 - [Waste Type Guidance Website](#)

Questions?

PEAS Hotline –Pollution Emergency Alerting System: 800-292-4706, 24 hrs.
Environmental Assistance Center – General EGLE assistance: 1-800-662-9278)

- Michigan Guide to Environmental Regulation – Free on the EGLE Website
[Michigan.gov/EHSGuide](https://www.michigan.gov/EHSGuide), includes details on Part 111 Haz Waste Rules – See Chapter 2, Section 2.4
- Hire a Consultant that *knows waste regulations
- Use the “Search” Box on EGLE’s website

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2025 Lansing District

Used Oil and LIB Management Complaint - Spills Visible on Google Earth



2025 Lansing District

Hazardous Waste Drums no Labels, Stored Open, Spill Not Addressed Outside –
Penalty Pending



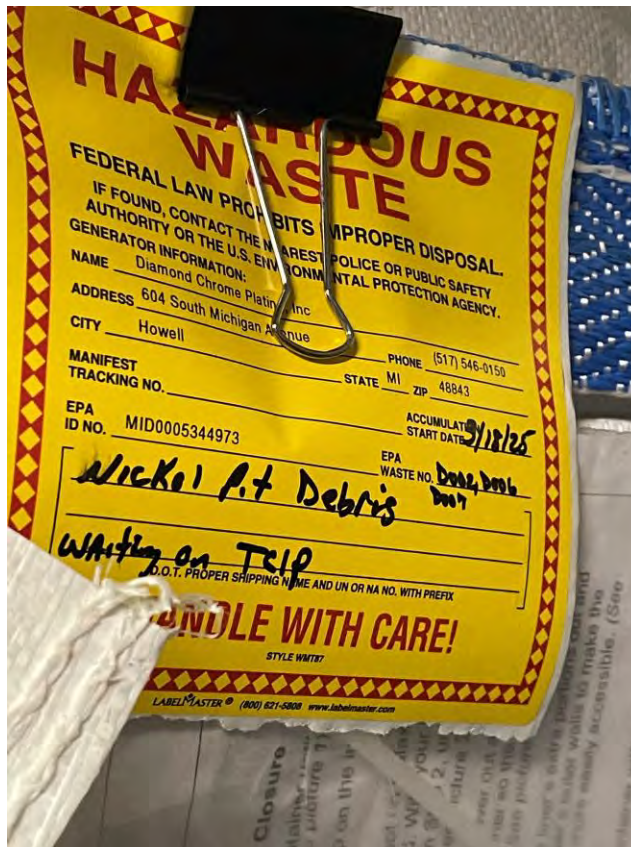
2025 Lansing District Lithium Battery Fire at Used Car Parts Company



EGLE Lansing District - 2025



Good Example Photos – Lansing District 2025 Hazardous Waste Label & 100's of Totes Cleaned Up



LANSING DISTRICT 2026 GOOD EXAMPLES (MOSTLY)

