



North Carolina Hazardous Waste Workshop  
Fall 2024



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Division of Waste Management  
Hazardous Waste Section - Compliance Branch  
REGIONAL INSPECTOR MAP**

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**Questions?**

Contact your NCDEQ  
Hazardous Waste Section  
Inspector

Make sure you have  
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contact information by  
going to this NCDEQ  
website link



<https://www.deq.nc.gov/compliance-map-inspector/download?attachment?attachment>

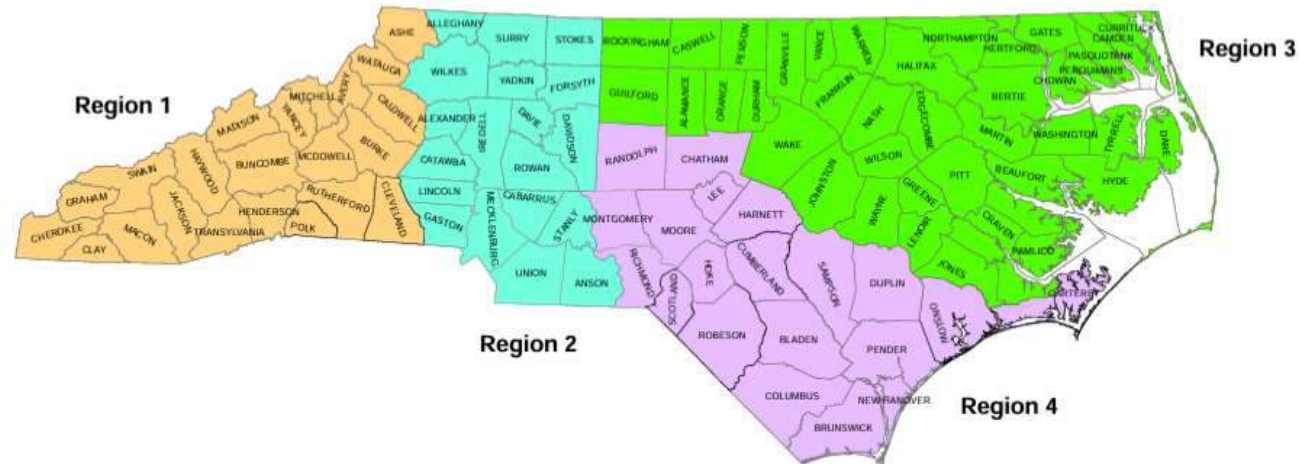
North Carolina Department of Environmental Quality  
Division of Waste Management  
Hazardous Waste Section - Compliance Branch

MERCURY SWITCH PROGRAM - REGIONAL INSPECTOR MAP

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# Questions?

Contact your NCDEQ  
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Make sure you have  
the most recent  
contact information by  
going to this NCDEQ  
website link

<https://www.deq.nc.gov/waste-management/dwm/hw/ri/mercury-switch-map/download>

## *EPA Region 4 RCRA Priorities*

- Addressing Exposure to PFAS
- Drum Reconditioners
- EV Battery Recyclers
- Non-Notifiers/Under-Reporters
- P075 Nicotine Waste
- Generators Treating/Recycling On-site



## *Annual Hazardous Waste SQG Fee Update*

- Small Quantity Generator (SQG) fee has been raised from \$175 to \$300
  - Effective July 1, 2023
  - N.C.G.S 130A-294.1(f)
- All other annual fees have not changed
  - LQG: \$1,400
    - Tonnage fee: \$0.70
  - HW Transporters: \$840
  - TSD: \$1,680



## *How to Request a 30-day Extension*

- If your NC facility is unable to get HW shipped offsite within the 90/180-day (or 270-day if applicable for SQGs) accumulation time limit, an extension of up to 30 days may be granted by the HWS due to unforeseen, temporary, and uncontrollable circumstances.
  - SQGs: 40 CFR 262.16(d)
  - LQGs: 40 CFR 262.17(b)
- ***The extension request must be made prior to exceeding the 90/180-day (or 270-day if applicable) accumulation time limit.*** The Section will grant 30-day extensions on a case-by-case basis.
- To request a 30-day extension, **e-mail your HWS Inspector** and provide them with the following information:
  - Facility name,
  - EPA Identification number,
  - What you are requesting,
  - Details on why there is a delay and what has been done to attempt to get the waste shipped offsite,
  - Number and size of containers/tanks included in the request,
  - The accumulation start date on the oldest hazardous waste CAA unit, and
  - When you expect the waste to be shipped offsite.



# *Proposed Federal Regulations*

## **Listing of Specific PFAS as Hazardous Constituents – Proposed Rule**

- Published February 8, 2024, in the Federal Register ([89 FR 8606, February 8, 2024](#))
- EPA proposed changes to the Resource Conservation and Recovery Act (RCRA) regulations by adding nine specific per- and polyfluoroalkyl substances (PFAS), their salts, and their structural isomers, to its list of hazardous constituents in 40 CFR 261 Appendix VIII.
  - Perfluorooctanoic acid (PFOA),
  - Perfluorooctanesulfonic acid (PFOS),
  - Perfluorobutanesulfonic acid (PFBS),
  - Hexafluoropropylene oxide- dimer acid (HFPO–DA or GenX),
  - Perfluorononanoic acid (PFNA),
  - Perfluorohexanesulfonic acid (PFHxS),
  - Perfluorodecanoic acid (PFDA),
  - Perfluorohexanoic acid (PFHxA), and
  - Perfluorobutanoic acid (PFBA).





# *Proposed Federal Regulations*

## **Listing of Specific PFAS as Hazardous Constituents – Proposed Rule (continued)**

- EPA's criteria for listing substances as hazardous constituents under RCRA require that they have been shown in scientific studies to have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms.
- If finalized, when corrective action requirements are imposed at a facility, these PFAS would be among the hazardous constituents expressly identified for consideration in RCRA facility assessments and, where cleanup through the RCRA corrective action process at RCRA treatment, storage, and disposal facilities.
- Additional information: <https://www.epa.gov/hw/proposal-list-nine-and-polyfluoroalkyl-compounds-resource-conservation-and-recovery-act>
- Link to EPA's website: [Frequent questions about the difference between a hazardous substance, a hazardous constituent, and a hazardous waste.](#)



# *Proposed Federal Regulations*

## **Definition of Hazardous Waste Applicable to Corrective Action for Releases From Solid Waste Management Units – Proposed Rule**

- Published February 8, 2024, in the Federal Register ([89 FR 8598, February 8, 2024](https://www.federalregister.gov/documents/2024/02/08/89-fr-8598)).
- This proposed rule would amend the definition of hazardous waste applicable to corrective action to address releases from solid waste management units at RCRA-permitted treatment, storage, and disposal facilities.
- Makes related conforming amendments to provide clear regulatory authority to fully implement the RCRA statutory requirement that permitted facilities conduct corrective action to address releases not only of substances listed or identified as hazardous waste in the regulations but of any substance that meets the statutory definition of hazardous waste.
- Additional information: <https://www.epa.gov/hw/proposal-clarify-authority-address-releases-hazardous-waste-treatment-storage-and-disposal>



# *Proposed Federal Regulations*

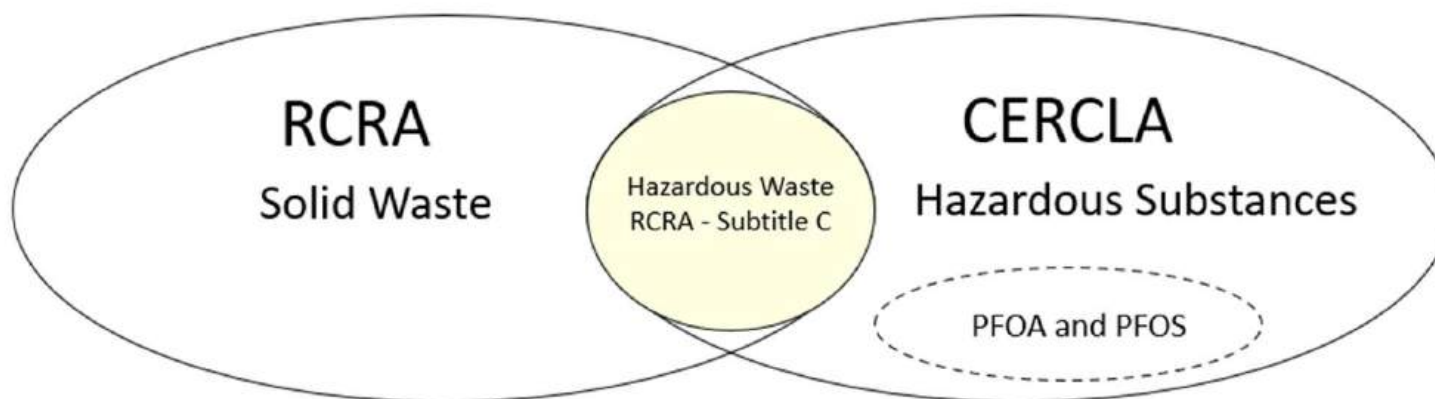
## **Revisions to Standards for the Open Burning/Open Detonation of Waste Explosives – Proposed Rule**

- Published March 20, 2024 in the Federal Register ([89 FR 19952, March 20, 2024](#))
- The proposed revisions would reduce OB/OD of waste explosives and increase control of air emissions and use safe and available alternative technologies in lieu of OB/ OD.
- Additional information: <https://www.epa.gov/hwpermitting/revisions-standards-open-burning-open-detonation-waste-explosives>



## *CERCLA Hazardous Substances and RCRA Hazardous Wastes and where PFOA and PFOS are proposed to be added*

- Two per- and polyfluoroalkyl substances (PFAS), specifically perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), including their salts and structural isomers were added as hazardous substances under CERCLA through federal rulemaking effective July 8, 2024 ([89 FR 39124, May 8, 2024](#)).
- This federal rulemaking adds PFOA and PFOS to the CERCLA “List of Lists” (40 CFR 302.4) and any releases above the reportable quantity (RQ) must immediately be reported.



## *Requirements that Already Apply to PFOA and PFOS That Could Affect a HW Site*

- Fourteen PFAS substances (including but not limited to PFOA and PFOS) have also been added to the NCDEQ Preliminary Soil Remediation Goals (PSRGs) which provides clean up levels for releases of these substances.
- Substances that are not naturally occurring and for which no standard is specified in 15A NCAC 02L .0202(h) or (i) shall not be permitted in concentrations at or above the practical quantitation limit in Class GA or Class GSA groundwaters (15A NCAC 02L .0202(c)). The only exception is tracers, the use of which has been permitted by the Division of Water Resources in 15A NCAC 02C .0200.
- For more information: <https://www.epa.gov/epcra/designation-pfoa-and-pfos-hazardous-substances-under-cercla-release-reporting-requirements>
- Link to EPA's website: [Frequent questions about the difference between a hazardous substance, a hazardous constituent, and a hazardous waste.](#)





**Welcome  
to RCRA**

*Land of Acronyms*

A few abbreviations will be used the presentations:

- HW = Hazardous Waste
- HWS = Hazardous Waste Section
- EPA = Environmental Protection Agency
- VSQG = Very Small Quantity Generator
- SQG = Small Quantity Generator
- LQG = Large Quantity Generator
- CAA = Central Accumulation Area
- SAA = Satellite Accumulation Area
- LEPC = Local Emergency Planning Committee
- RCRA = Resource Conservation and Recovery Act

## *About the Presentations*



- Check marks in upper right corner of slide indicates which generator category must implement each provision



# *Hazardous Waste Generator Guidance*

NC Hazardous Waste Section Guidance Documents:

<https://deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/technical-assistance-and-guidance-documents>

"Hazardous Waste Generator"

"Hazardous Waste Pharmaceuticals"

"Aerosol Cans"

"Universal Waste"







Questions?



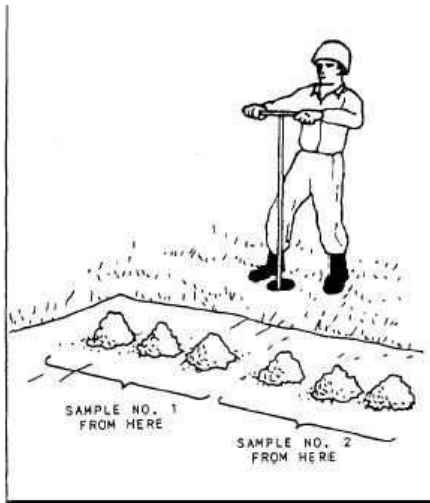


# Waste Identification Part I

*Department of Environmental Quality*



# Hazardous Waste Section Division of Waste Management



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*Department of Environmental Quality  
Fall 2024 Workshops*



*Department of Environmental Quality*



# Waste Determinations

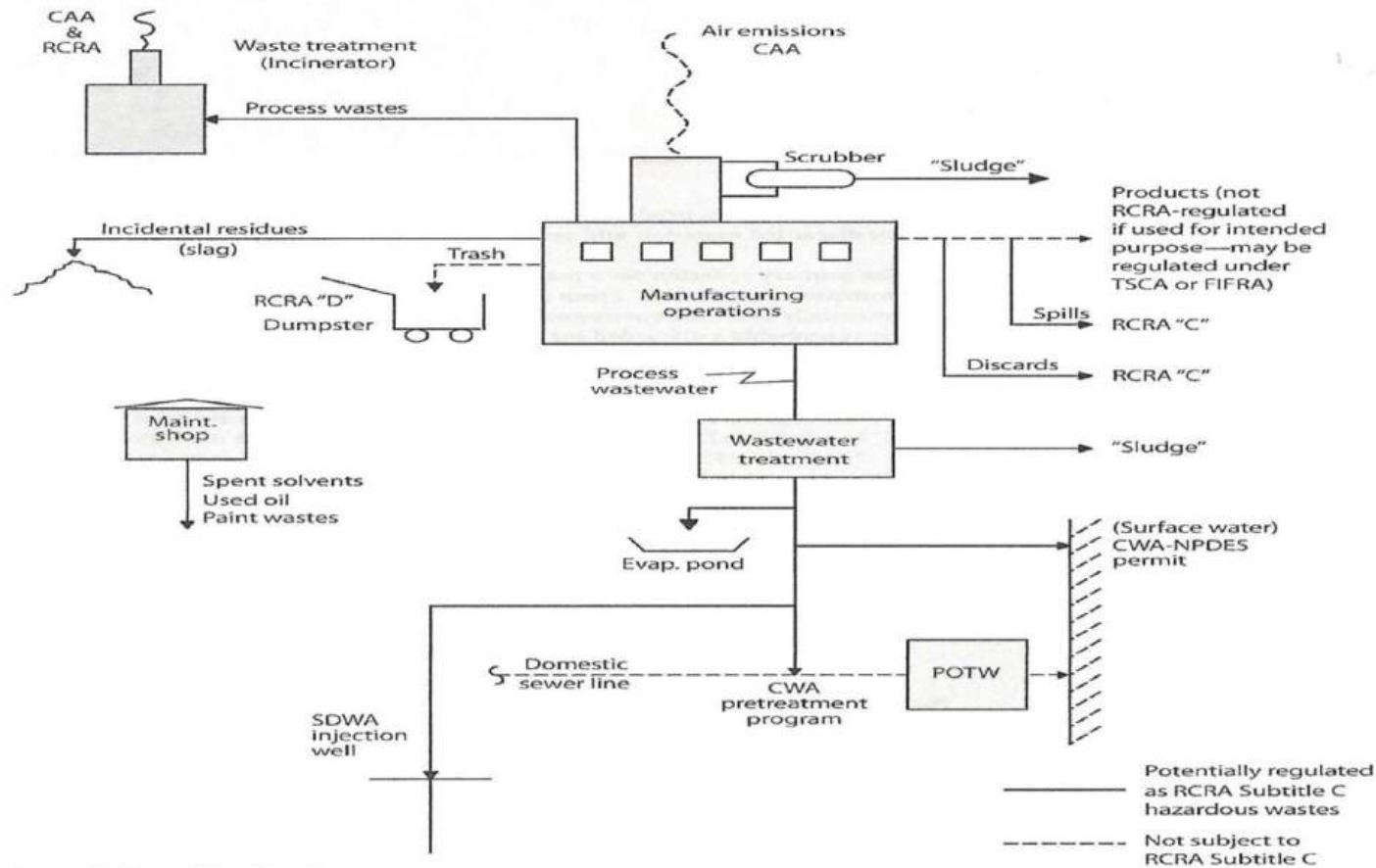
 VSQG; SQG; LQG



- All generators of solid waste are required to make an accurate determination as to whether their waste is hazardous
- Characterizing waste is a tough requirement. EPA has tightened up certain requirements and revealed an estimated 20-30% incorrect waste determinations were being made.



# Regulatory Status of Discarded Materials from a Manufacturing Plant



Source: McCoy and Associates, Inc.



# Waste Determinations

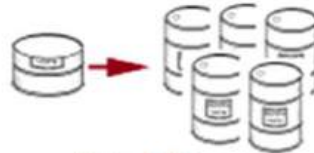
To determine your generator category, count all waste generated in a calendar month:

**Very Small Quantity  
Generator (VSQG)**



½ Drum or  
27 Gal. Or  
220 lbs. Or  
100 Kg

**Small Quantity  
Generator (SQG)**



½ to 5 Drums or  
27-275 Gal. Or  
220-2200 lbs. Or  
100-1000 Kg.

**Large Quantity  
Generator (LQG)**



>5 Drums or  
>275 Gal. or  
>2200 lbs. or  
>1000 Kg.

Key: 55 Gallon Drum = 440 lbs. = 200 Kg.

# *What is a Hazardous Waste?*

Solid waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment.

- A material must be considered a solid waste before it can be determined to be a hazardous waste. Any facility that generates a solid waste must determine if their waste is hazardous as required by 40 CFR 262.11
- A waste is a material that has been used or has otherwise served its intended purpose and, for whatever reason (e.g. contamination, spent) can or will no longer be used for its intended purpose
- **It is important to note that the definition of solid waste is not limited to wastes that are physically solid. Many solid wastes are liquid, semi-solid, or contained gaseous material**





## *Definition of Hazardous Waste*

### *40 CFR 261.3*

A solid waste is hazardous waste if it is not excluded from regulation as a hazardous waste under 261.4(b) and it meets any of the following conditions:

- Exhibits a characteristic of a hazardous waste
- Has been named as a hazardous waste and listed as such in the regulation
- Is a mixture containing a listed waste and a solid waste
- Is a waste derived from the treatment, storage, or disposal of a hazardous waste

**Key Thought:** Before mixing hazardous waste with other wastes, consider the treatment and dilution implications.



## *Two Types of Hazardous Waste*

**Acute hazardous waste** – hazardous wastes that meet the listing criteria in 261.11(a)(2) and therefore are either listed in 261.31 of this chapter with the assigned hazard code of (H) or are listed in 261.33(e) of this chapter.

**Non-acute hazardous waste** – all hazardous waste that are not acute hazardous waste.



# HAZARDOUS



# WASTE

# DETERMINATIONS



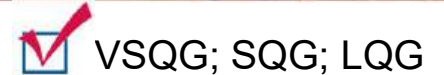
# *Waste Determinations*



They are four “Pillars” that support any hazardous waste determination. We will be presenting the basic four key thought during this presentation.



# Waste Determinations

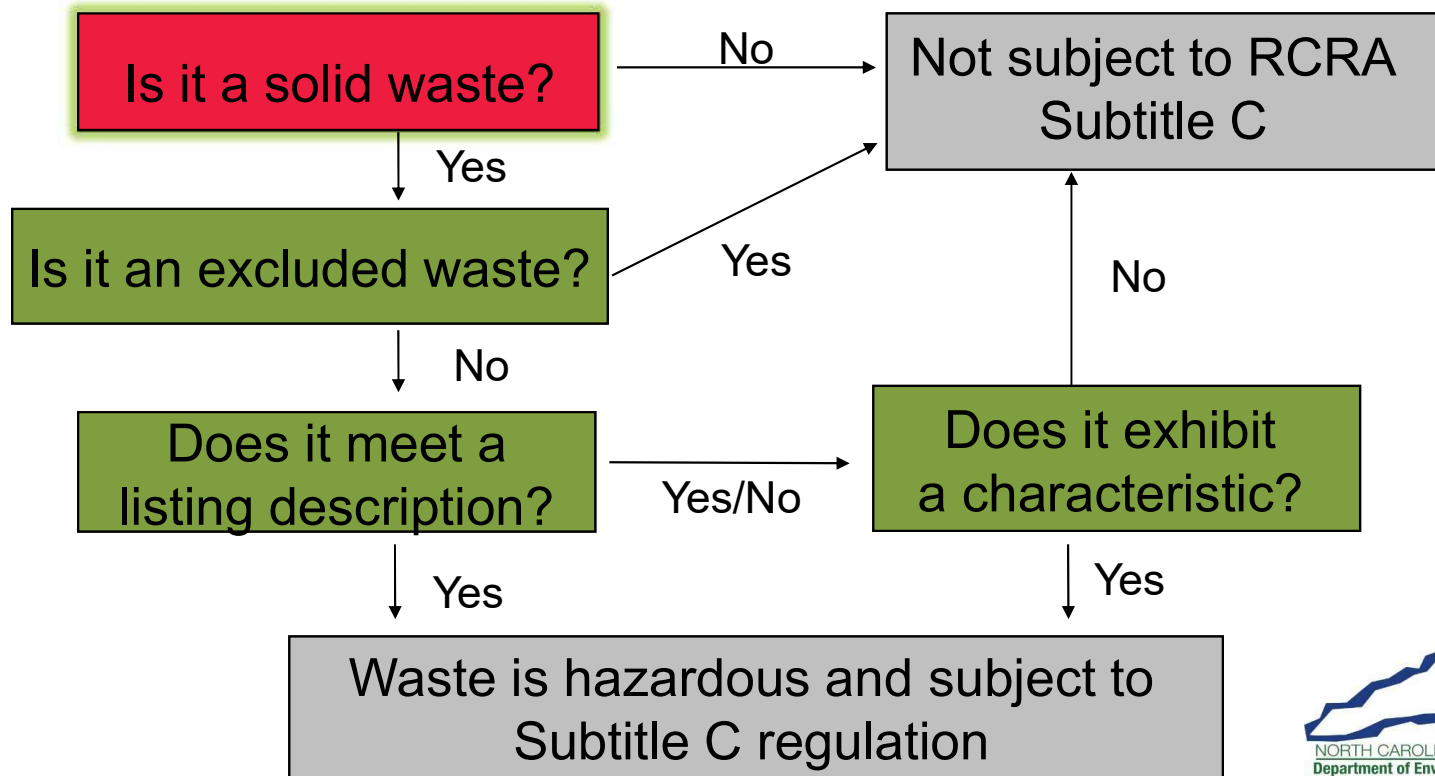


## KEY THOUGHT:

**Always ask the “four questions” when making a hazardous waste determination.**

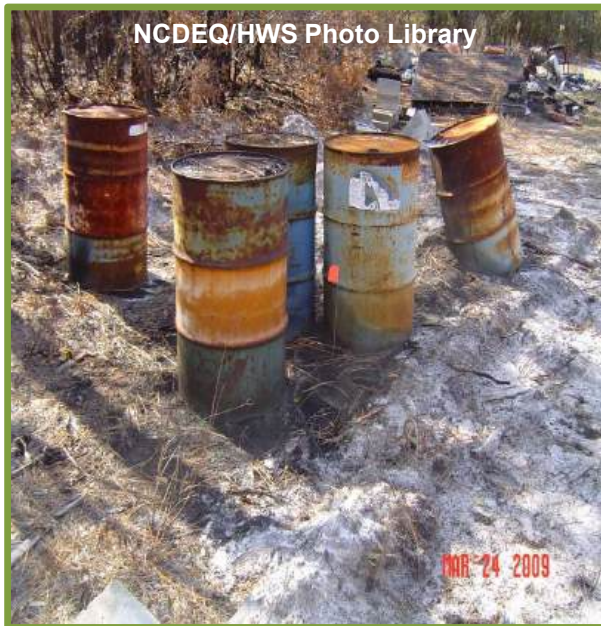
1. Is it a solid waste? (40 CFR 261.2)
2. Is it exempt (exclusion)? (40 CFR 261.4)
3. Is it listed? (40 CFR 261.30)
4. Is it characteristic? (40 CFR 261.20)

# Hazardous Waste Determination



# *What is a Solid Waste?*

## *40 CFR 261.2*



- The primary criterion that must be met for a material to be a waste is that it is discarded:
  - Garbage, residue, sludge
  - Material abandoned, thrown away
  - Spent material, used for its intended purpose
  - Incidental residue
  - Sham recycled



# *Sham Recycling 40 CFR 261.2(b)(4)*



Recycling must be legitimate: All recycling conducted under RCRA must be legitimate. The four legitimacy factors are:

- Factor 1: Materials must provide a useful contribution to the recycling process or to a product or intermediate.
  - (40 CFR 260.43(a)(1))
  
- Factor 2: Recycling must produce a valuable product or intermediate.
  - (40 CFR 260.43(a)(2))
  
- Factor 3: Materials must be managed as valuable commodities.
  - (40 CFR 260.43(a)(3))
  
- Factor 4: Products of recycling don't contain significant concentrations of hazardous constituents.
  - (40 CFR 260.43(b))

**Sham recycling is basically deceptive or trick recycling.**

*Department of Environmental Quality*

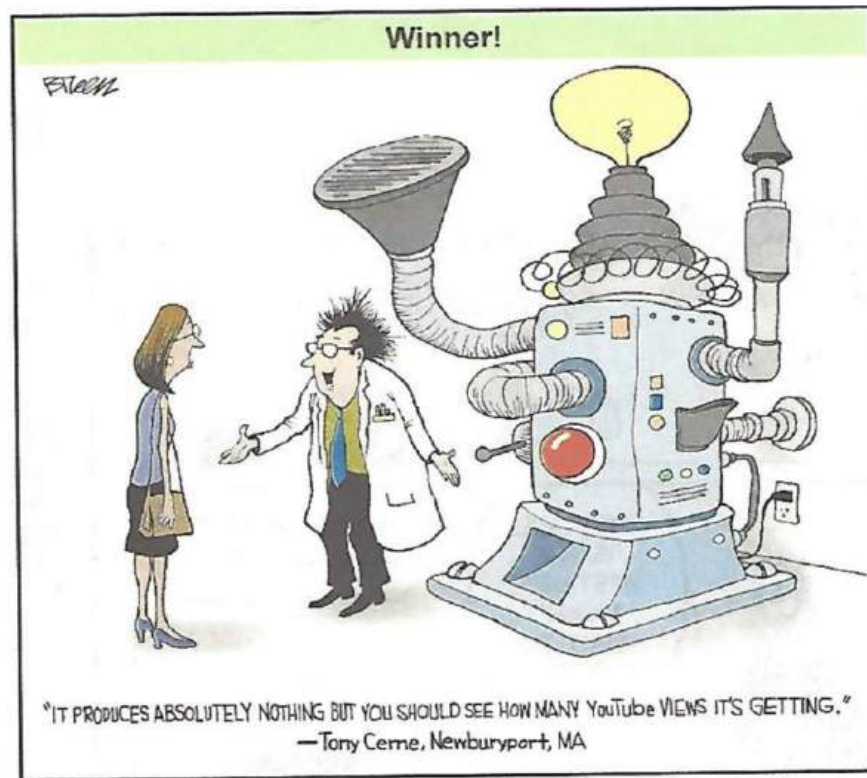




# Sham Recycling

**Key Thought:**

Materials that are recycled may still be subject to the RCRA program



Source:  
Hickory Daily Record Comics May 2020





# *Inherently Waste-Like Material\**

## *(40 CFR 261.2 (d))*

These are materials that are so hazardous they pose a substantial threat to human health and the environment even when recycled.

- Dioxin wastes with listed waste codes (F020, F021, F022, F023, F026, F028)
  - We don't know of anyone in USA who is recycling dioxin waste.
- Halogen-containing materials that are burned in halogen-acid furnaces
  - Certain facilities will burn materials that contain high concentrations of chlorinated or brominated compounds to produce products (e.g. HCl)

\*These materials are solid wastes, even when they are recycled



## *Example of How Solid Waste are Identified*

Case study #1:

Unused benzene from a delivery truck spills on the ground and the facility owner decides not to clean up the spill.

Question:

**What is the status of the spilled benzene?**



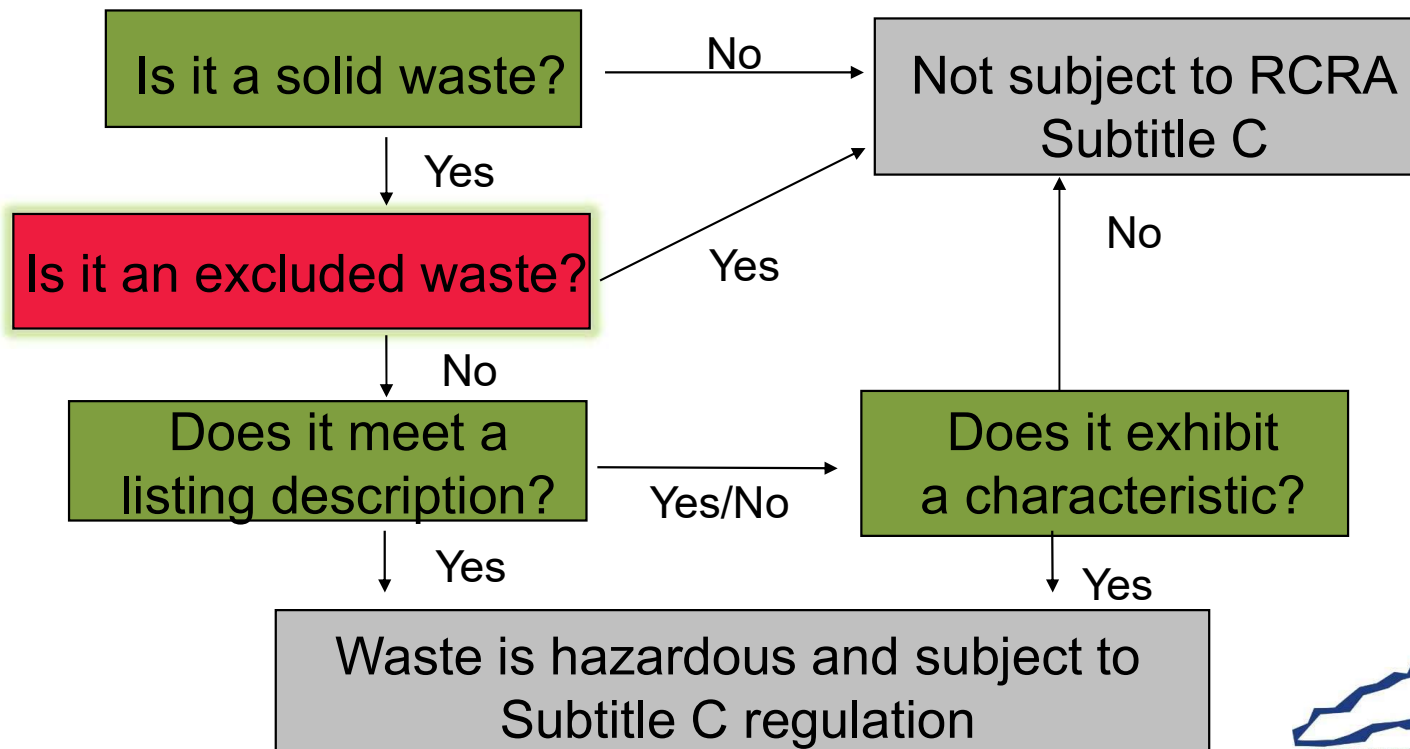
## *Answer to Question #1*

If the owner decides not to clean up the spill, he/she has made the decision to “discard” the benzene. A discarded material is a **solid waste**.

If the owner does not “promptly” clean up the spill, it is considered a land disposal site subject to permitting requirements.



# Hazardous Waste Determination





# *Hazardous Waste Exclusions*

## *40 CFR 261.4*

40 CFR 261.4 has three sections that exclude or exempt certain secondary materials from being either a solid waste or HW

40 CFR 261.4(a) identifies materials that are not solid waste

40 CFR 261.4(b) identifies solid waste that are not HW

40 CFR 261.4(c) identifies HW which are exempted from certain regulations until the HW exits the unit(s) in which it was generated



# *Hazardous Waste Exclusions*

## *40 CFR 261.4*

### Examples:

- **Clean Water Act §261.4(a)(1)**
  - Domestic sewage; NPDES Permit; Stormwater Permit; U.S. Army Corps of Engineers.
- **Clean Air Act §50-94**
- **Hazardous Secondary Material** being reclaimed §261.4(a)(20)
- **Shredded Circuit Boards** §261.4(a)(14)
- **Used Cathode Ray Tubes (CRT's)** §261.4(a)(22)



# *Solid Waste Exclusions that **NOT** Hazardous Waste*

## *40 CFR 261.4(b)*

### Examples:

- **Household Waste** §261.4(b)(1)
- **Solvent Contaminated Wipes** 261.4(b)(18)(i)
- **Boiler Cleaning Solutions** §261.4(b)(4)(ii)(8)
- **Cooling Tower Blowdown** §261.4(b)(4)(ii)(E)
- **Coal Pile Run-Off** §261.4(b)(4)(ii)(A)



# Exemptions

Hazardous wastes **exempted** from certain regulations  
*40 CFR 261.4(c)*

Examples:

- **Analytical samples** §261.4(d)(1)
- **Airbag Waste** §261.4(j)(i)
- **Dredged Material** §261.4(g)
- **Spent lead acid batteries that will be reclaimed** §261.6(a)(2)((iv)
- **Hazardous scrap metal that will be recycled**
- §261.6(a)(2)(iii)



# *Is it Excluded?*

- Domestic sewage and mixtures of domestic sewage (261.4(a)(1))
- Industrial point source discharges (261.4(a)(2))
- Irrigation return flows (261.4(a)(3))
- Certain radioactive secondary materials (261.4(a)(4))
- In-situ mining materials (261.4(a)(5))
- Pulping liquors (261.4(a)(6))
- Spent sulfuric acid (261.4(a)(7))
- Secondary materials reclaimed in a closed-loop process in tanks (261.4(a)(8))
- Spent wood preservatives (261.4(a)(9))
- Coke by-product wastes (261.4(a)(10))
- Splash condenser residues (261.4(a)(11))
- Oil-bearing hazardous secondary materials generated and recycled within the petroleum refining industry (261.4(a)(12))
- Excluded scrap metal (261.4(a)(13))
- Shredded circuit boards ((261.4(a)(14))
- Pulping condensates derived from Kraft mill steam strippers (261.4(a)(15))
- Mineral processing spent materials being recycled (261.4(a)(17))
- Petrochemical recovered oil (261.4(a)(18))
- Spent caustic solutions from petroleum refining (261.4(a)(19))
- Hazardous secondary materials used to make zinc fertilizers (261.4(a)(20))
- Zinc fertilizers made from hazardous secondary materials (261.4(a)(21))
- Used cathode ray tubes (CRTs) (261.4(a)(22))
- Hazardous secondary materials generated and reclaimed under the control of the generator (261.4(a)(23))
- Hazardous secondary materials transferred for the purpose of reclamation (261.4(a)(24)and (25))
- Solvent-contaminated wipes that are sent for cleaning and reuse. (261.4(a)(26))
- Higher-value solvents transferred for the purpose of remanufacturing (261.4(a)(27)



## *Example of Exemptions / Exclusions*

Case study #2:

If a laboratory disposes excess sample originally received from a sample collector and the excess sample exhibits a hazardous characteristic, who is the generator of the hazardous waste?



## *Answer to Question #2*

The laboratory is the generator, and the waste must be managed and disposed just like any other hazardous waste.



## *Example of Exemptions / Exclusions*



Case study #3:

Would metal wire, pellets, pins, and powder with high concentration of lead enjoy the scrap metal exemption when recycled?



NCDEQ/HWS Photo Library

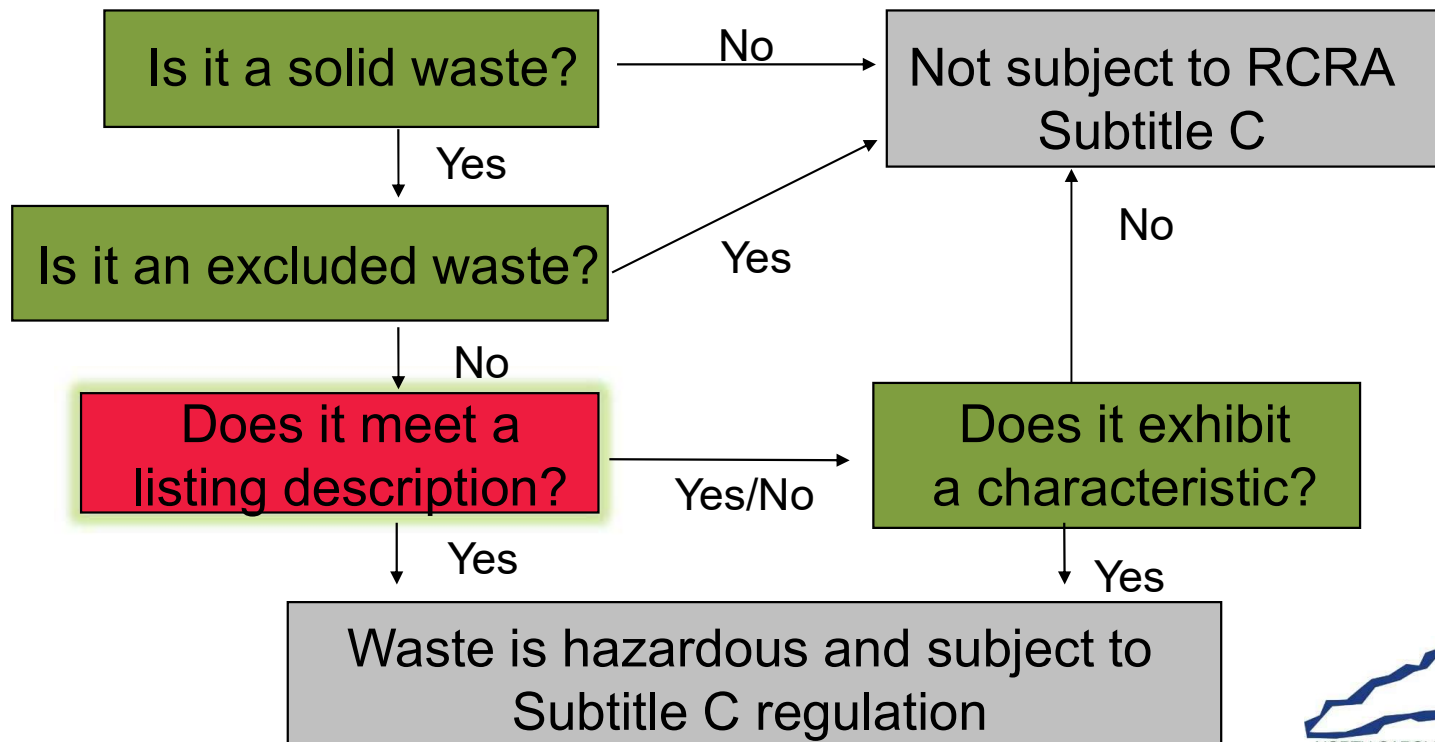


## *Answer to Question #3*

Scrap metal wire, pellets, pins, and powder meet the definition of scrap metal and would not be subject to RCRA regulation when recycled.



# Hazardous Waste Determination





# Listed Hazardous Waste

A waste is determined to be a hazardous waste if it is specifically listed on one of four lists (the F, K, P and U lists) found in title 40 of the Code of Federal Regulations (CFR) in section 261.

- Generated from specific industrial sources
- Chemicals considered “acute” hazardous wastes (P-Listed or F-listed with a (H) hazard code)
- Chemicals considered “toxic” hazardous wastes
- Determination is based on knowledge, not testing



## *Listed Hazardous Waste*

There are four separate lists of hazardous waste

- F-list: Process waste from non-specific common sources §261.31
- K-list: Process waste from specific sources §261.32
- P-list: Unused Acutely hazardous chemicals §261.33
- U-list: Unused toxic chemicals §261.33



# *Listed Hazardous Waste*

Hazard Codes Represent EPA's Basis for Listings 40 CFR 261.30(b)

- Ignitable waste – (I)
- Corrosive waste – (C)
- Reactive waste – (R)
- Toxicity characteristic waste – (E)
- Acute hazardous waste – (H)
- Toxic waste – (T)

**Key Thought:**

You must have knowledge of the waste or the process that generated it to assign listed codes

To indicate its reason for listing a waste, EPA assigns a hazard code to each waste listed on the F and K list.



## *F – Listed Waste §261.31*

Seven groups make up the F list:

- Spent solvent wastes (F001-F005)
- Heavy metal and cyanide wastes plating waste (F006-F012, F019)
- Dioxin-containing wastes (F020-F023, F026-F028)
- Chlorinated aliphatic hydrocarbons production wastes (F024)
- Wood preserving wastes (F032-F035)
- Petroleum refinery wastewater treatment sludges (F037 and F038)
- Multi-source leachate (F039)



## *F – Listed Waste §261.31*

### The F001 – F005 Listings

Only apply if a before-use concentration threshold is exceeded

For mixtures of F001, F002, F004, and F005:

- If the total of all solvent constituents before use, is greater than or equal to 10 percent by volume, all appropriate listings apply to the spent solvent



# *Common Spent Solvent Issues*

- Solvent must be used to solubilize or mobilize
- Cleaning
- Degreasing
- Diluents
- Reaction and synthesis media
- Still bottoms from recycling spent solvents
- Solvent chemicals used as reactants or ingredients
- Process waste from liquid-liquid extraction
- Rinsewater following solvent cleaning

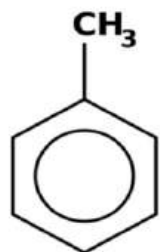


# Example of F-Listed Waste

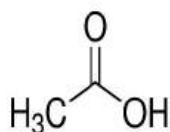
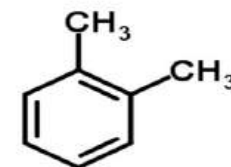


## Case Study # 4

What is the regulatory status of spent solvent generated from using the solvent identified in the following SDS?



Name	CAS Number	[%]
Solvent petroleum	64742-89-8	45
Benzene, dimethyl,	1330-20-7	22.5
Benzene, methyl,	108-88-3	22.5
Acetic Acid	64-19-7	10



## *Answer to Question # 4*



- In chemical nomenclature, the IUPAC nomenclature of organic chemistry is a method of organic chemical compounds as recommended by the International Union of Pure and Applied Chemistry.
- Benzene, dimethyl- is a synonym for xylene (on the F003 list), and Benzene, methyl- is a synonym for toluene (on the F005 list).
- Based on the F003 and F005 listing descriptions in §261.31, the spent solvent is a **F003, F005 listed Hazardous Waste**.
- Moral of the story: Environmental personnel need to get familiar with how to use Chemical Abstracts Service (CAS) number and chemical nomenclature.
- A useful web site that will help with this is call **List of Lists**, available at:

<http://www.epa.gov/epcra/consolidated-list-lists>

Take  
Note!



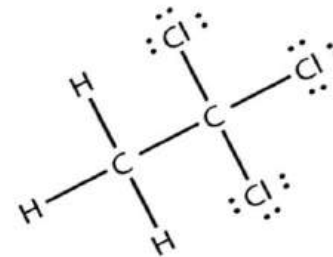


## Example of F-Listed Waste

Take Note!

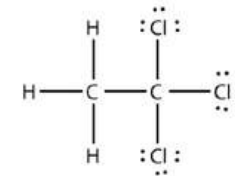
### Case Study # 5

A product is used as a machining coolant during metal machining, drilling, etc. The coolant contains 80% 1,1,1-trichloroethane and 20% lubricating oil. What is the RCRA status of the coolant waste.



## *Answer to Question # 5*

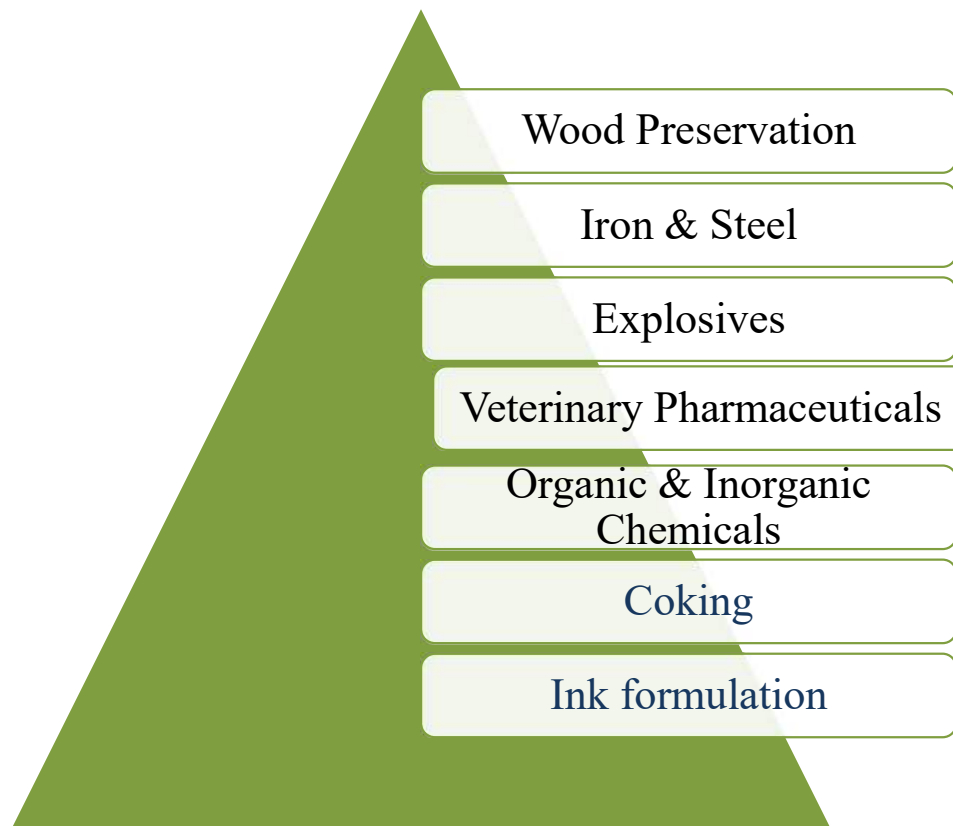
- The 1,1,1-trichloroethane is being used as an ingredient in product cutting oil...**not a solvent**. Assuming that it has not been mixed with **spent solvent**, the cutting-oil waste is neither F001 nor F002...



- How do I managed the waste?
  - Used Oil Management Rules §279
    - Used oil
- If it does not pass the halogen field testing kit used by the Used Oil Processing Facility
  - It has to be dispose as a Hazardous Waste under the D040 waste code if it exceeds a TCLP value of 0.5 mg/l
- How do I managed a spill of the product?
  - Listed Hazardous Waste from Unused Toxic Chemicals §261.33
    - 1,1,1-trichloroethane waste code U-226



## *K-Listed Waste From a Specific Source*



K-Waste is listed in §261.32 are known to result from specific manufacturing processes and are identified according to the industry that generates them. The listing descriptions associated with K-waste are very specific, clear, and self-explanatory.





## *P and U-Listed Waste §261.33*

- Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof of **unused product**.
  
- **P-listed waste** are unused product or chemicals that are intended for discard and are **acutely hazardous** with a Hazard Code of (H).
  
- **U-listed waste** are unused product or chemicals that are intended for discard and are non-acutely hazardous waste, but toxic with a Hazard Code that can varied.
  - Ignitable waste (I)
  - Reactive Waste (R)
  - Corrosive Waste (C)



**Key Thought:** Listed in—listed out...

## *Delisting Petition*



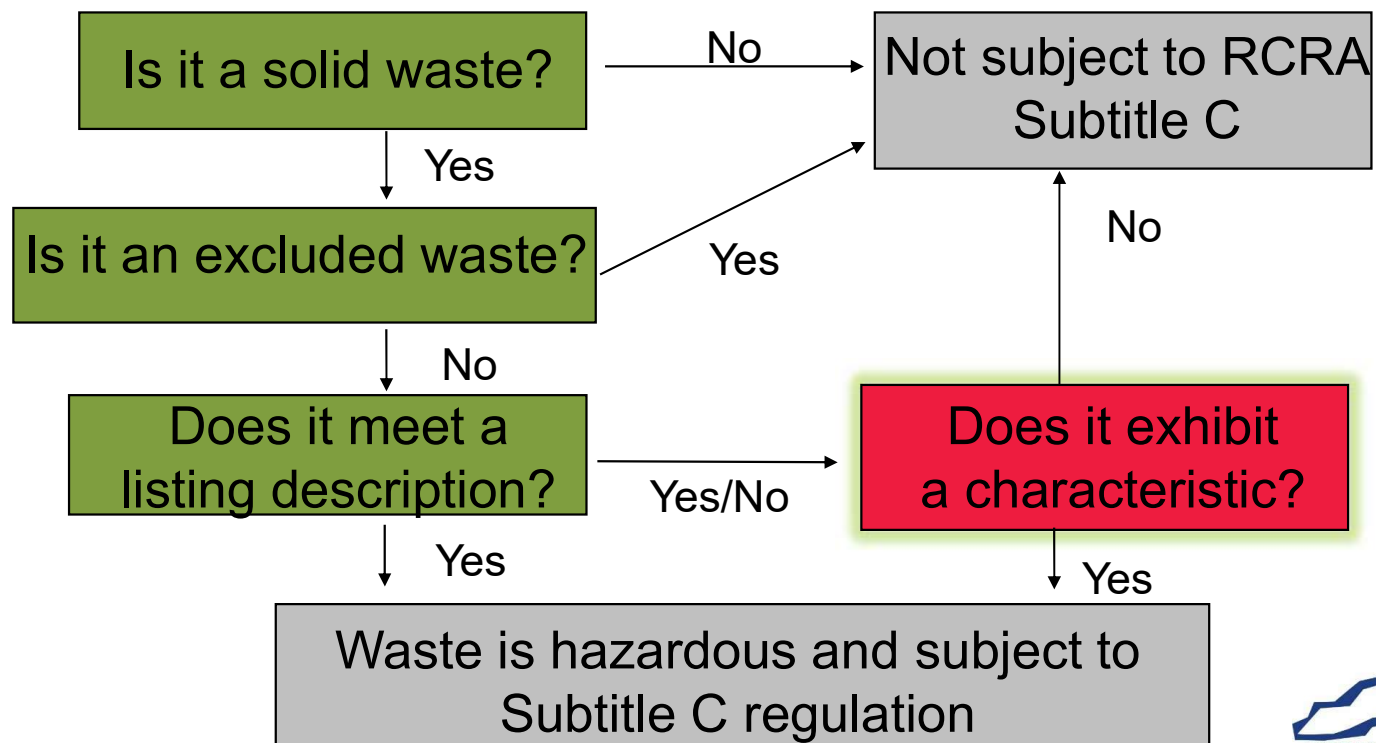
If the waste is listed, the person may file a delisting petition under 15A NCAC 02I .0501 and 40 CFR 260.22 to demonstrate the waste from this particular site or operation is not a hazardous waste.



- Waste analysis plan
- Need at least 5 to 7 rounds of sampling (quarterly)
- All Underline Hazardous Constituents must be included
  - Appendix VIII (40 CFR 261, ~ 239 compounds)



# Hazardous Waste Determination



# *Hazardous Waste Determination*

## *40 CFR 262.11(d)*

*(Redefined)*

- Acceptable knowledge may include:
  - process knowledge (e.g., information about chemical feedstocks and other inputs to the production process)
  - knowledge of products, by-products, and intermediates produced by the manufacturing process
  - chemical or physical characterization of wastes
  - information on the chemical and physical properties of the chemicals used or produced by the process or otherwise contained in the waste
  - testing that illustrates the properties of the waste
  - other reliable and relevant information about the properties of the waste or its constituents



# *Point of Generation*

## *40 CFR 262.11(a)*

For each solid waste, the waste determination is made:

- At the **point of generation**, before dilution, mixing or other alteration of the waste occur.
- AND at any time in the course of management that the waste has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change



➤ *The "point of generation" refers to the location where wastes initially accumulate and is under the control of the operator of the waste-generating process. ...*





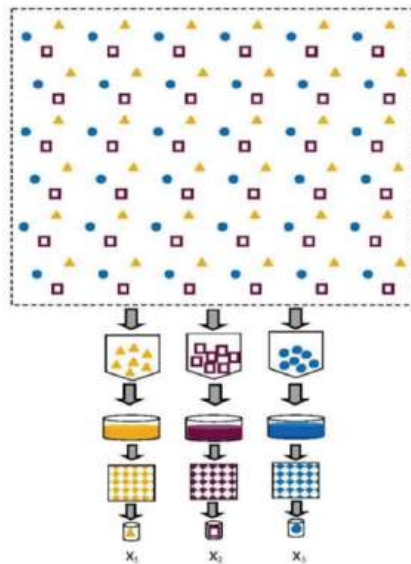
# *Point of Generation Examples*

- For wastewater generated in a pulp and paper mill bleach plant...
  - At the outlet of the plant prior mixing with other wastewater streams.
- For solvents used in parts washers...
  - When the part washer apparatus is removed from the container.
- For baghouse dust generated from a manufacturing operation...
  - When the waste is removed from the baghouse hoppers.
- For P- or U-listed chemicals...
  - When they are intended to be discarded...
- For waste filter cake being placed into a roll-off box, on the conveyor belt...
  - As the waste enters the roll-off box.



# *Point of Generation Example Remediation Sites*

- For contaminated soil or ground water...
  - When the soil is excavated, or the ground water is pumped out of the ground.



# *Point of Generation*

## *RCRA Organic Emission Standards*

- For RCRA Organic Air Emissions Standards Part AA/BB/CC)
  - TCLP analysis is **NOT** used for waste determination, Volatile Organic Concentrations in the waste stream use Air Method 25D
  - **Point of Origination**
  - The **point** of waste **origination** means the **point** where a solid waste produced by a system, process, or waste management unit is determined to be a **hazardous waste** as defined in 40 CFR part 261

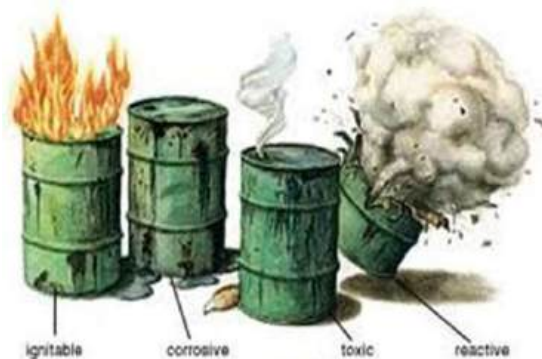


# Characteristic Hazardous Waste

- Ignitability Waste
  - Corrosive Waste
  - Reactive Waste
  - Toxic Waste
- D001 }  
D002 } ICR Parameters  
D003 }  
D004-D043 → Toxicity Parameters

## Key Thought:

A waste is characteristic if it exhibits a generic property independent of its source.



## *Waste codes listed in 40 CFR 261.24 for Toxic Chemicals of Concern*

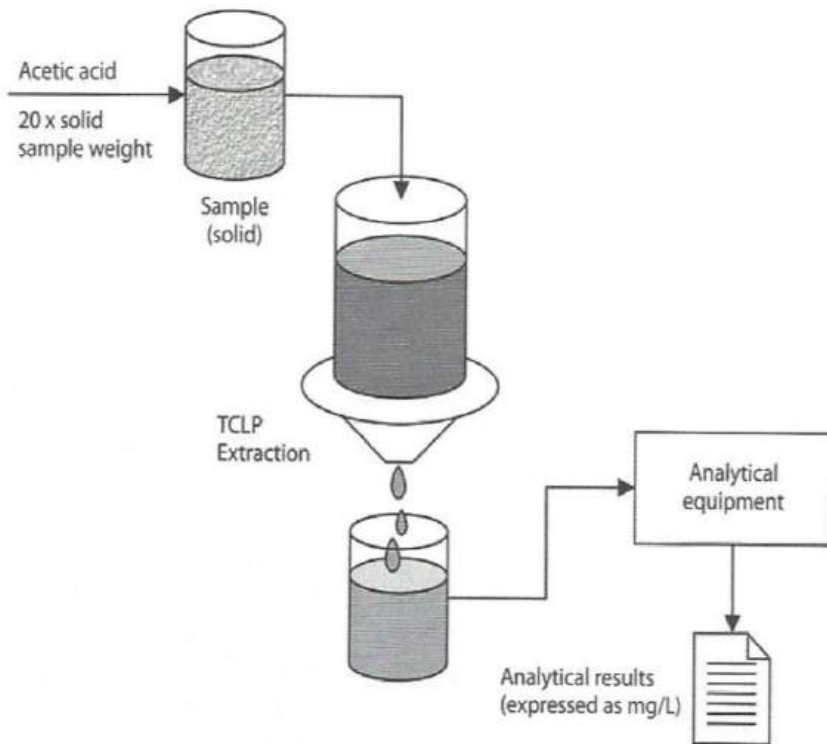
**TCLP Metals and Volatile Organic Compounds, Pesticides, Semi-Volatile Organic Compounds and Herbicides**

Metals			Volatile Organic Compounds		
Contaminant	EPA HW #	Regulatory Level	Contaminant	EPA HW #	Regulatory Level
Arsenic	D004	5.0 mg/L	Benzene	D018	0.5 mg/L
Barium	D005	100.0 mg/L	Carbon tetrachloride	D019	0.5 mg/L
Cadmium	D006	1.0 mg/L	Chlorobenzene	D021	100.0 mg/L
Chromium	D007	5.0 mg/L	Chloroform	D022	6.0 mg/L
Lead	D008	5.0 mg/L	1,2-Dichloroethane	D028	0.5 mg/L
Mercury	D009	0.2 mg/L	1,1-Dichloroethylene	D029	0.7 mg/L
Selenium	D010	1.0 mg/L	Methyl ethyl ketone	D035	200.0 mg/L
Silver	D011	5.0 mg/L	Tetrachloroethylene	D039	0.7 mg/L
			Trichloroethylene	D040	0.5 mg/L
			Vinyl chloride	D043	0.2 mg/L
Pesticides			Semi-Volatile Organic Compounds		
Contaminant	EPA HW #	Regulatory Level	Contaminant	EPA HW #	Regulatory Level
Chlordane	D020	0.03 mg/L	o-Cresol	D023	200.0 mg/L
Endrin	D012	0.02 mg/L	m-Cresol	D024	200.0 mg/L
Heptachlor (and its epoxide)	D031	0.008 mg/L	p-Cresol	D025	200.0 mg/L
Lindane	D013	0.4 mg/L	Cresol	D026	200.0 mg/L
Methoxychlor	D014	10.0 mg/L	1,4-Dichlorobenzene	D027	7.5 mg/L
Toxaphene	D015	0.5 mg/L	2,4-Dinitrotoluene	D030	0.13 mg/L
			Hexachlorobenzene	D032	0.13 mg/L
			Hexachlorobutadiene	D033	0.5 mg/L
			Hexachloroethane	D034	3.0 mg/L
			Nitrobenzene	D036	2.0 mg/L
Herbicides			Pentachlorophenol	D037	100.0 mg/L
Contaminant	EPA HW #	Regulatory Level	Pyridine	D038	5.0 mg/L
2,4-D	D016	10.0 mg/L	2,4,5-Trichlorophenol	D041	400.0 mg/L
2,4,5-TP (Silvex)	D017	1.0 mg/L	2,4,6-Trichlorophenol	D042	2.0 mg/L

# Hazardous Waste Determination

## 40 CFR 262.11(d)(1)

### Toxicity Characteristic Leaching Procedure



- A test other than a test method set forth in subpart C of 40 CFR part 261, or an equivalent test method approved by the Hazardous Waste Section under 40 CFR 260.21, may be used as part of the person's knowledge to determine whether a solid waste exhibits a characteristic of hazardous waste.



# Ignitability / D001

## 40 CFR 261.21



### Old Definition

- Liquid other than an **aqueous** solution containing less than 24 percent alcohol by volume and has flash point less than 60 °C (140 °F)
- Liquid identified by paint filter test or pressure filtration
- Solid that burns vigorously due to friction, moisture absorption, or spontaneous ignition
- Ignitable compressed gas
- Oxidizer or organic peroxide

### New Definition September 2020

- Liquid, other than a solution containing less than 24 percent alcohol by volume **and at least 50 percent water by weight**, that has a flash point less than 60 °C (140 °F)

(Redefined)



# *Corrosivity / D002*

## *40 CFR 261.22*



- Aqueous with a pH  $\leq 2$  or  $\geq 12.5$ 
  - Aqueous means at least 20% water by volume
  - If less than 20% aqueous, use next method
  
- A liquid and corrodes carbon steel at a rate  $>0.25$  in/yr.







## *Reactivity / D003*

### *40 CFR 261.23*

- Normally unstable and readily undergoes violent change w/o detonating
- Reacts violently with water
- Forms potentially explosive mixtures with water
- Generates toxic gases when mixed with water
- Cyanide or sulfide bearing waste that can generate toxic gases
- Forbidden explosive per DOT regulations
- No test methods available for determining reactivity

**Interested parties can contact EPA's National Enforcement Investigation Center (NEIC) at 303-462-9000.**



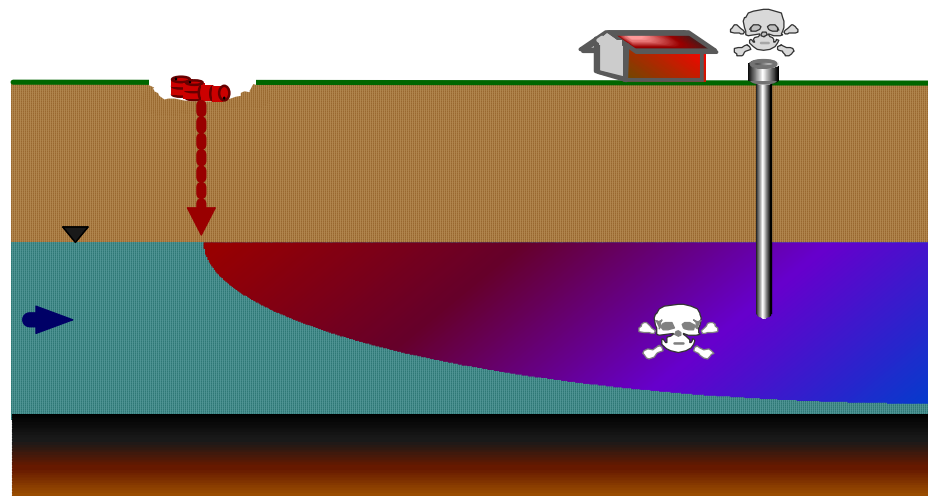
## *Reactivity / D003* *40 CFR 261.23*

D003 Reactive Waste	D003 Reactive Waste
Aluminum alkyls	Sodium
Ammonium Fulminate	Sodium-potassium alloy
Gold cyanide	Sodium sulfide
Lead azide	Silver cyanide
Lithium	Silver picrate (dry)
Nitroglycerine	Trinitrotoluene
Potassium sulfide	White Phosphorous
Pentaerythrite tetranitrate	Zinc Powder

# *Toxicity / D004-D043*

## *40 CFR 261.24*

Wastes that are hazardous due to the toxicity characteristic are harmful when ingested or absorbed. Toxic wastes present a concern as they may be able to leach from waste and pollute groundwater.

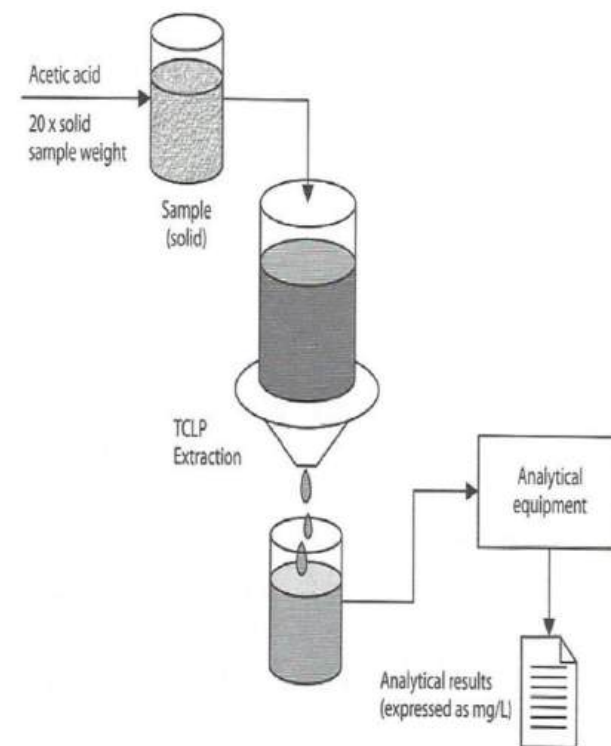


# Toxicity / D004-D043

## 40 CFR 261.24

- Based on Toxicity Characteristic Leaching Procedure (TCLP)
- It simulates the processes that would occur in a landfill if industrial waste are co-disposed with other types of waste
- A sample of waste is mixed with twenty times the sample weight of acetic acid and the resulting mixture is then agitated for 18 hours
- Extract leachate with an acid
- At the end of the agitation period, the acidic liquid phase, call the extract is analyzed
- If any of the 40 constituents are present above the regulatory level of slide 51 of this presentation, the waste is a hazardous waste, and it carries the waste code associated with that constituent.

Toxicity Characteristic Leaching Procedure



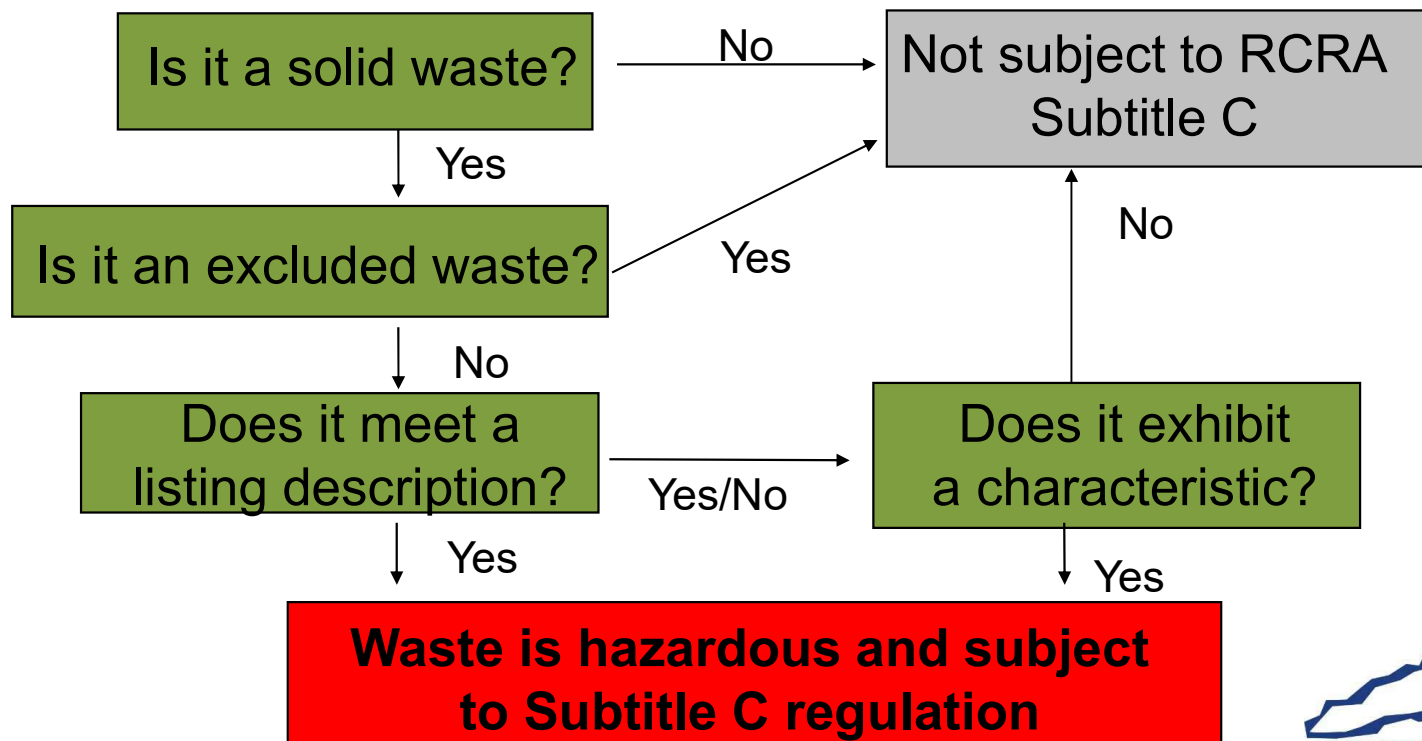
## *Toxicity / D004-D043*

### *40 CFR 261.24*

- What about liquid wastes.
  - Liquid waste is filter (<0.5% filterable solids)
  - Analyze for total concentration of toxic characteristic parameter
  - Compare results directly to regulatory levels
  - If any of the 40 constituents are present above the regulatory level of slide 51 of this presentation, the waste is a hazardous waste and it carries the waste code associated with that constituent.

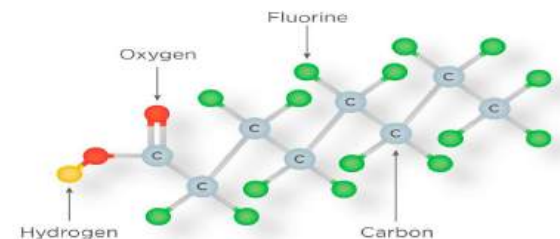


# Hazardous Waste Determination



## *Other Contaminants to Be Aware of*

- Polychlorinated Biphenyl PCB's are regulated under Toxic Substances Control Act (TSCA) of 1976. EPA Region 4 regulates PCB's in North Carolina.
- Asbestos are regulated under TSCA and North Carolina Department Health and Human Services.
- Emerging Contaminants, e.g. per and poly-fluoroalkyl substances (PFAS)
  - Ms. Amy Delinsky, PhD. Env. Chemist, 919.896.1505
  - Mr. Mark Webb, Env. Specialist, 984.459.0084



# *Emerging Contaminants PFAS*

- PFAS Substances:
  - More than 25,000 compounds
  - Compounds that repel water, stains and grease.
  - Wide variety of chemical structures
  - Chain of aliphatic organic compound surrounded by fluorine atoms
  - Used in homes, businesses, and industry since the 1940
  - Detected in soil, water, fish and air samples
  - Resist decomposition in the environment and in the human body





# *Emerging Contaminants PFAS*

**Targeting the mayor five (5) types of industries that intersect  
Water, Waste and Air.**



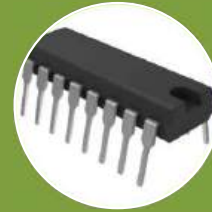
**Solid Waste  
Landfill**



**Pharmaceutical  
Manufacturing**



**Plastic & Resin  
Manufacturing**



**Semiconductor  
Industry**



**Organic  
Chemical  
Manufacturing**



## *Emerging Contaminants PFAS*

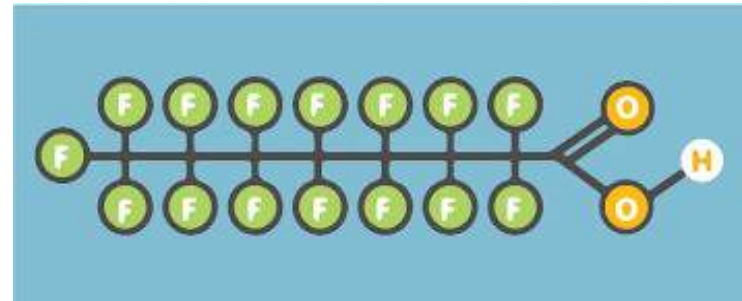
- North Carolina is ahead of all EPA regions (10) related with studies conducted over PFAS compounds.
- Besides the TCLP waste determination, the HW Section may required testing waste for PFAS compounds
  - EPA method 537.1; ~18 compounds
  - EPA method 1633; ~40 compounds
- Health advisory levels (HALs): June 2022 EPA releases drinking water
  - PFOA: .004 ppt (interim)
  - PFOS: .02 ppt (interim)
  - GenX: 10 ppt (final)
  - PFBS: 2,000 ppt (final)



# Emerging Contaminants PFAS

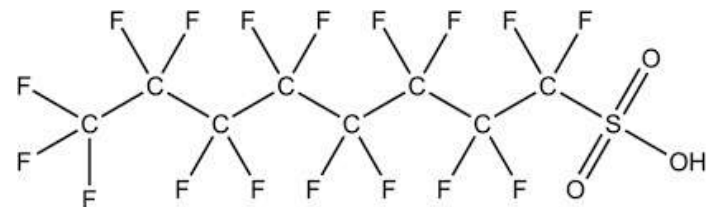
- PFOA... what does that stand for?

- P = Per
- F = Fluorine
- O = Oct in organic chemistry is 8
- A = Acidic organic radical
- Perfluorooctanoic acid



- PFOS...

- P = Per
- F = Fluorine
- O = Oct in organic chemistry is 8
- S = Sulfonic organic radical
- Perfluorooctanesulfonic acid



## *Hazardous Waste Regulatory Alerts*

EPA proposed changes to (RCRA) regulations by adding **nine** specific per- and polyfluoroalkyl substances (PFAS), **their salts**, and their **structural isomers**, to its list of hazardous constituents in Title 40 of the Code of Federal Regulations Part 261 Appendix VIII. These nine PFAS are:



# *Hazardous Waste Regulatory Alerts*

Perfluorooctanoic acid	PFOA
Perfluorooctanesulfonic acid	PFOS
Perfluorobutanesulfonic acid	PFBS
Hexafluoropropylene oxide-dimer acid	HFPO-DA or GenX
Perfluorononanoic acid	PFNA
Perfluorohexanesulfonic acid	PFHxS
Perfluorodecanoic acid	PFDA
Perfluorohexanoic acid	PFHxA
Perfluorobutanoic acid	PFBA

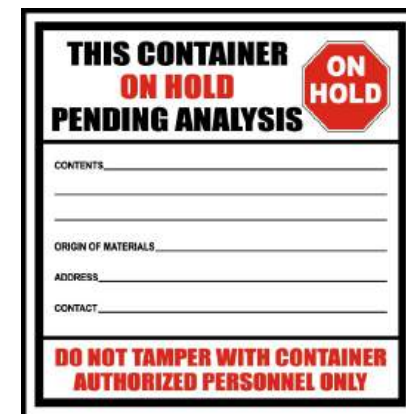


## Example of Characteristic Waste

### Case Study # 6

A waste mixture has a flash point of 120° F and TCLP results showing the following data:

Parameter	Concentration	TCLP regulatory limit
Ignitability	120° F	<140° F
Cadmium	0.7 mg/l	1.0 mg/l
Chromium	8.1 mg/l	5.0 mg/l
Lead	5.1 mg/l	5.0 mg/l



What is the regulatory status of the mixture when sent for incineration?

*Reminder: Compliance with HW requirements must occur beginning at the point of generation. Not when test results come back*



## *Answer to Question # 6*

☠ The regulation in §261.24 state that the toxicity characteristic applies if “ the extract from a representative sample of the waste contains any of the contaminants listed in the table of slide 57 of this presentation

Parameter	Concentration	TCLP regulatory limit	Waste Code
Ignitability	<b>120° F</b>	<140° F	<b>D001</b>
Cadmium	0.7 mg/l	1.0 mg/l	Non-HW
Chromium	<b>8.1 mg/l</b>	5.0 mg/l	<b>D007</b>
Lead	<b>5.1 mg/l</b>	5.0 mg/l	<b>D008</b>



## *Example of Characteristic Waste*

### Case Study # 7

Due to a very difficult matrix sample and due to analytical interference to run a TCLP, leachate value ( $mg/l$ ) for the parameter of chromium concentration.

The laboratory was able to analyze for total chromium, total value ( $mg/kg$ ).

The result came out to be  $80 mg/kg$ .

**Is the waste hazardous?**





## *Answer to Question # 7*

The waste will **not** be a hazardous waste for chromium...

-Sample must be 100% solid matrix

-80 mg/kg / 20 = 4 mg/l

→ MTLC: Maximum Theoretical Leachate Concentration

- 5.0 mg/l us the TCLP regulatory level for Cr

- The waste is not a hazardous waste.



## *Unknown Waste*

- How do I manage a waste that I have no knowledge how it was generated?



## *Unknown Waste*

- A hazardous waste determination per 40 CFR 262.11 must be performed using representative samples of each container of unknown materials; using EPA approved test methods to determine if they exhibit any of the following hazardous waste characteristics:
- Ignitibility (40 CFR 261.21) Oxidizers per 40 CFR 261.21(a)(4)
- Corrosivity (40 CFR 261.22)
- Reactivity (40 CFR 261.23)
- Toxicity (40 CFR 261.24): Run a TCLP for all 40 constituents listed in 40 CFR 261.24. This includes RCRA metals, pesticides, herbicides, volatile organics, and semi volatile organics.
- Tentatively Identified Compounds: The ten (10) highest results under volatile and semi-volatile organics compounds should be submitted (only for spills)



## *Waste Determination Issues 2023 (A)*

- During a CEI, waste analysis records were requested for a container that has oily rags.
- The facility did not have any records.
- A TNOV was issue for not having a accurate waste determination.
- Facility sends a sample for TCLP analytical.
  - Sample pass, but almost trigger the parameter of tetrachloroethylene (0.7 mg/l).
- Tetrachloroethylene was used as a solvent.
  - Oily rags contaminated with used solvent (F002).
  - For the past 3-years oily rags were dispose from the facility as non-hazardous waste
- Used Oil container was contaminated also with F002.
  - For the past 3-years used oil was managed improperly.
  - Including the oily rags and used oil containers that should have been remove as F002, the facility category went from SQG to LQG.



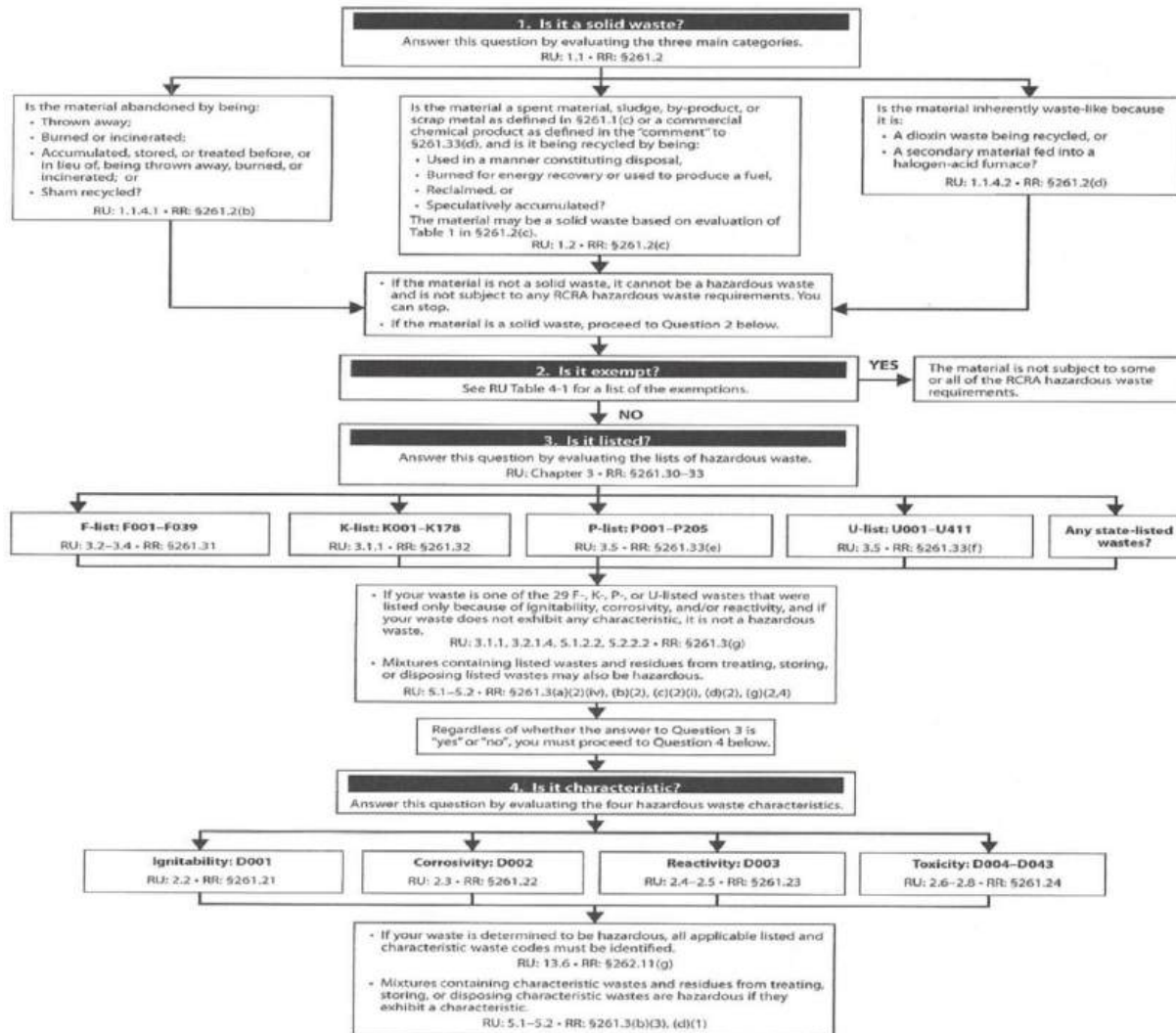
## *Waste Determination Issues 2023 (B)*

- During a CEI, waste analysis records were requested for a waste stream that was being disposed as **Non-RCRA Regulated Material**
- Facility indicated that the TSDF did the waste determination for them based on the SDS
- Copy of the SDS was requested
  - **SDS indicated “Trade Secret” concentration of 50%, unknown acute toxicity or mixture consists of ingredients of unknown toxicity**
- A TNOV was issued for not having an accurate waste determination.
- Facility sends a sample for TCLP analytical.
- The results confirmed that the waste is non-hazardous.





## Road Map for Determining If Your Material Is a Hazardous Waste



# Bibliography

## ➤ Books:

- Crowell & Moring LLP, (2001), *RCRA Hazardous Waste Handbook*, Rockville, Maryland: Government Institutes
- McCoy's & Associates, (2020), *McCoy's RCRA Reference*. Lakewood, Colorado: McCoy Society
- McCoy's & Associates, (2020). *McCoy's RCRA Unraveled*. Lakewood, Colorado: McCoy Society
- Walter, B., McCarty, H., Smith, R. (1996), *Environmental Laboratory Data Evaluation*, Douglasville, Georgia: Genium Publishing Corporation
- Woodside, Gayle, (2009). *Hazardous Materials and Hazardous Waste Management*, Austin, Texas: John Wiley & Sons

## ➤ Websites:

- Photos & Diagrams:
  - Retrieved from URL: <https://www.google.com/search?q=hazardous+waste+photos&tbtm...>
- Regulations:
  - Retrieved from URL: [https://www.ecfr.gov/cgi-bin/text-idx?node=pt40.26.261#se40.26.261\\_14](https://www.ecfr.gov/cgi-bin/text-idx?node=pt40.26.261#se40.26.261_14)







*Question?*



# WASTE IDENTIFICATION PART II

*Department of Environmental Quality*



**NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**DIVISION OF WASTE MANAGEMENT**  
**HAZARDOUS WASTE SECTION**  
**EASTERN COMPLIANCE BRANCH**

**Dan Girdner, Environmental Specialist II**

**Daniel.girdner@deq.nc.gov**  
**919-621-7747**



## *What will be covered?*

- Hazardous Waste Counting
- Mixture Rule: Mixing HW with Solid Waste
- Recycling:
  - Use or Reuse
  - Reclamation
  - Hazardous Secondary Materials



# *Hazardous Waste Counting*

Manual p. 30

# *Hazardous Waste Counting*

A waste generator must count all of the hazardous wastes generated during each calendar month which are managed in RCRA regulated units.

- Containers & Tanks are regulated units.
- Distillation units are **not** regulated units.



# *Hazardous Waste Counting*

Count hazardous waste that is accumulating:

- In tanks.
- In central accumulation area containers.
- In satellite accumulation area containers.
- Onsite prior to recycling, treatment, or disposal.

# *Hazardous Waste Counting*

Count hazardous waste that was generated and:

- Packaged and Transported off site.
- Placed directly into an RCRA-regulated treatment, or disposal unit.



# *Hazardous Waste Counting*

Avoid double-counting your waste.

Do not count,

- Hazardous waste that was transported offsite, if it was previously counted once.
- A full satellite area hazardous waste container later moved to a central accumulation within 72 hours if already counted once.
- Spent materials that are generated, reclaimed and reused onsite as long as the spent materials have been counted once in a calendar month.

## *Hazardous Waste Counting*

Avoid double-counting your waste.

**Do not count,**

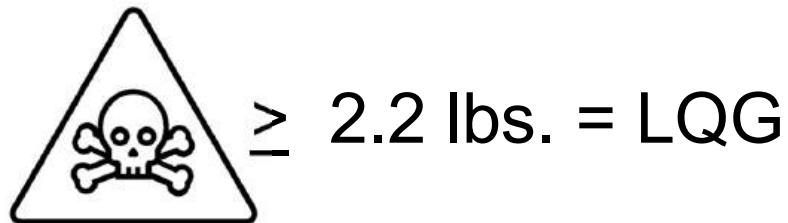
- Produced from onsite treatment of hazardous waste, as long as the hazardous waste was counted before treatment.



# *Hazardous Waste Counting*

## ***What about Acutely Hazardous Wastes?***

- Count Acute Hazardous Wastes generated per month separately from the Non-acute Hazardous Wastes.
- Acute Hazardous Waste generated greater than 1 kg (2.2 lbs.) a month counts as a LQG amount.



## *Hazardous Waste Counting – 40 CFR 262.13(c)*

*The Quantity of Wastes Generated in a Month Determines Category*

Quantity of <u>acute</u> hazardous waste generated in a calendar month	Quantity of <u>non-acute</u> hazardous waste generated in a calendar month	Quantity of <u>residues</u> from a cleanup of <u>acute</u> hazardous waste generated in a calendar month	Generator category
> 1 kg	Any amount	Any amount	LQG
Any amount	≥ 1,000 kg	Any amount	LQG
Any amount	Any amount	> 100 kg	LQG
≤ 1 kg	> 100 kg and < 1,000 kg	≤ 100 kg	SQG
≤ 1 kg	≤ 100 kg	≤ 100 kg	VSQG

*Hazardous Waste Counting*  
*40 CFR 262.13(c)*



**Do NOT count** waste exempt under 40 CFR 261.4(c)–(f)

- (c) Hazardous waste generated in a product or raw material storage tank, vessel, pipeline etc...until it exits the unit in which it was generated or 90-days after the unit ceases operating

## *Hazardous Waste Counting*

***Do NOT count*** waste exempt under 40 CFR 261.4(c)–(f)

(d) Samples.

(e) Treatability Study Samples.

(f) Samples at Labs and Testing Facilities Undergoing Treatability Studies.



# *Hazardous Waste Counting*

*40 CFR 262.13(c)*



**Do NOT count** hazardous waste that is:

- Managed **immediately** upon generation (260.10) only
  - On-site elementary neutralization units,
  - Wastewater treatment units,
  - Totally enclosed (closed-loop) treatment facilities

# *Hazardous Waste Counting*

*40 CFR 262.13(c)*



Do NOT count hazardous waste:



IF it is recycled material that is **not** accumulated on site prior to recycling.



# Hazardous Waste Counting

40 CFR 262.13(c)

- VSQG
- SQG
- LQG



Do NOT count toward Hazardous Waste generation IF:

Used Oil managed under 40 CFR 261.6(a)(4) and 40 CFR 279



Lead-acid Batteries managed under 40 CFR part 266, Subpart G



Universal Waste managed under 40 CFR 261.9 and 40 CFR 273



# *Hazardous Waste Counting*

40 CFR 262.13(c)



Do **not** count hazardous waste that is:



**An unused commercial chemical product,** generated solely as a result of a laboratory clean-out conducted at an **eligible academic entity** pursuant to §262.213. (Subpart K)

# *Hazardous Waste Counting*

*40 CFR 262.13(c) (Subpart L)*



**Do NOT** count hazardous waste that is:

- Managed in an **episodic event** in compliance with the conditions of 40 CFR 262 Subpart L.



# *Hazardous Waste Counting*

*40 CFR 262.13(e)*



Based on the generator category, the generator must meet the applicable independent requirements listed in §262.10.



A generator's category also determines which of the provisions of §§262.14, 262.15, 262.16 or 262.17 must be met to obtain an exemption from the storage facility permit, interim status, and operating requirements when accumulating hazardous waste.

*Condition for Exemption*  
*40 CFR 262.1*



- Any requirement in §§262.14, 262.15, 262.16, 262.17, 262.70, or subpart K or subpart L of 262
- That states an event, action, or standard that must occur or be met
- In order to **obtain an exemption** from any applicable requirement in parts 124, 264 through 268, and 270 of this chapter, or from any requirement for notification under section 3010 of RCRA.

*Independent Requirement*  
*40 CFR 262.1*



- A requirement of part 262
- That states an event, action, or standard that must occur or be met;
- And that applies ***without relation to, or irrespective of***, the purpose of obtaining a conditional exemption from storage facility permit, interim status, and operating requirements under §§262.14, 262.15, 262.16, 262.17, or subpart K or subpart L of this part.

# *Mixture Rule*

*Mixing HW with Solid Wastes*  
*40 CFR 262.13(f)(1)(i)*



- HW generated by a **VSQG** may be mixed with solid wastes
- VSQG may mix a portion or all of its HW with solid waste and remain subject to 262.14 even though the resultant mixture exceeds the quantity limits identified in the definition of a VSQG in 260.10 unless the mixture exhibits one or more of the characteristics of HW identified in 261 subpart C.

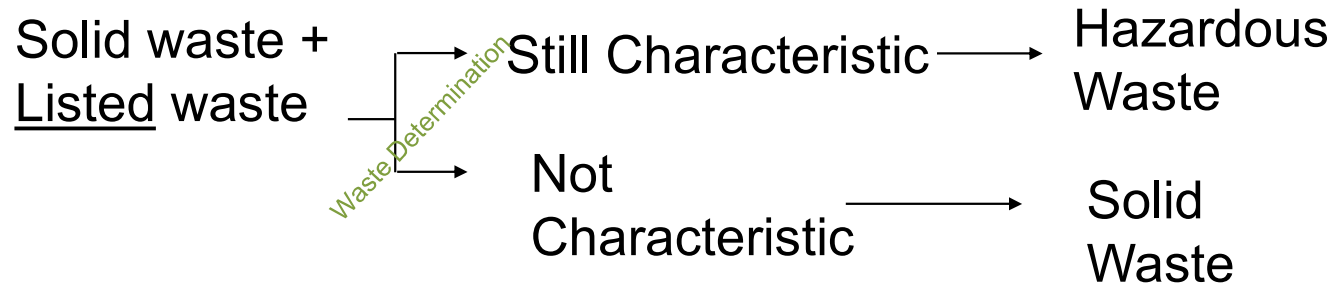
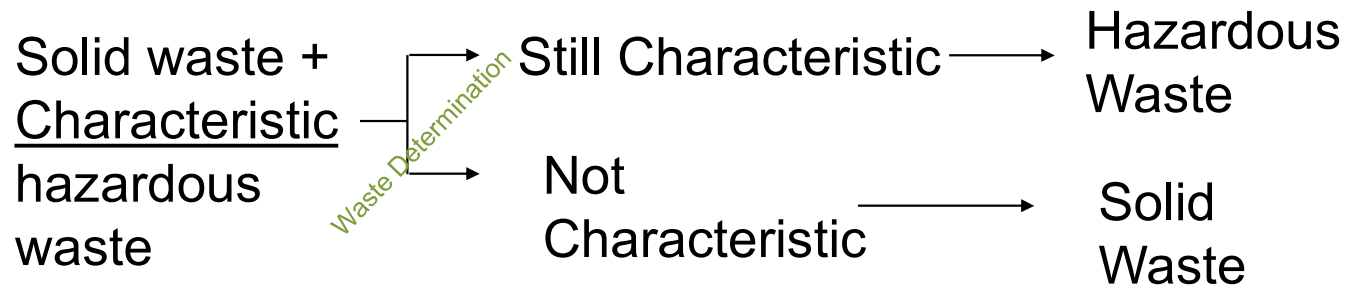


*Mixing HW with Solid Wastes*  
*40 CFR 262.13(f)(1)(ii)*



- If the resulting mixture exhibits a characteristic of HW, this resultant mixture is a newly-generated HW.
- The VSQG must count both the resultant mixture amount plus the other HW generated in the calendar month to determine whether the total quantity exceeds the VSQG limit for the calendar month
  - *The VSQG must meet requirements for SQG or LQG if the VSQG HW amount is exceeded due to the resultant mixture*

# Hazardous Waste Mixture Rule VSQG



*Mixing HW with Solid Wastes*  
*40 CFR 262.13(f)(1)(iii)*



- If a VSQG's wastes are mixed with used oil, the mixture is subject to 40 CFR 279 (used oil management requirements)
- Any material produced from such a mixture by processing, blending, or other treatment is also regulated under 40 CFR 279

*Mixing HW with Solid Wastes*  
*40 CFR 262.13(f)(2)(i)*



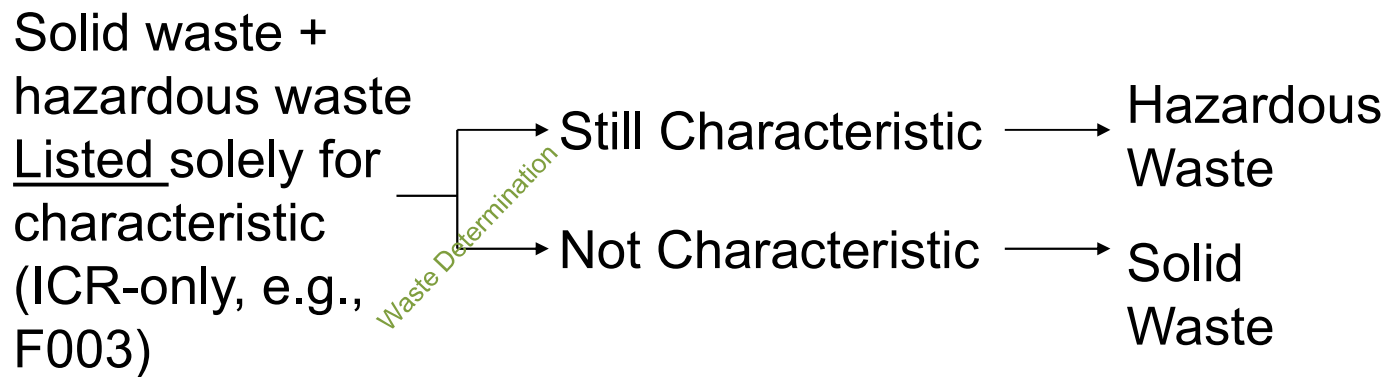
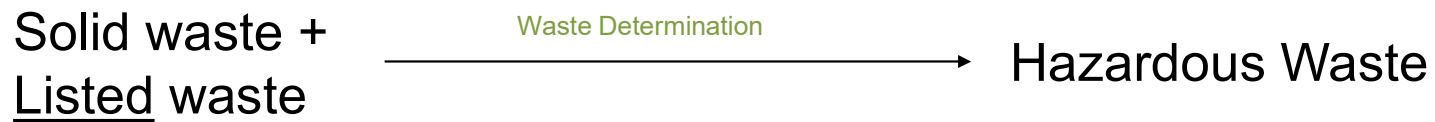
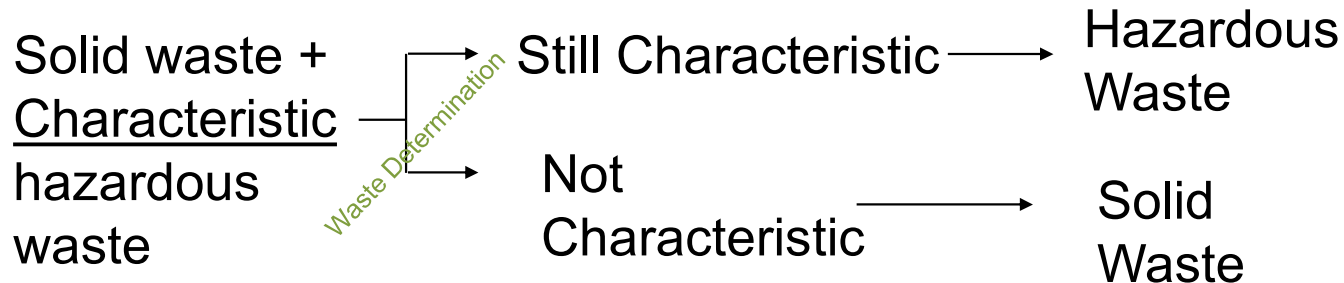
- HW generated by a SQG or LQG may be mixed with solid waste  
Mixtures are subject to the following:
  - Mixture Rule: 40 CFR 261.3(a)(2)(iv), (b)(2) and (3), and (g)(2)(i);
  - Prohibition on Dilution Rule: 40 CFR 268.3(a);
  - Land Disposal Restriction Requirements: 40 CFR 268.40 (Treatment Standards)
  - Hazardous Waste Determination: 40 CFR 262.11

*Mixing HW with Solid Wastes*  
*40 CFR 262.13(f)(2)(ii)*



- If the resultant mixture is found to be a HW, this resultant mixture is a newly-generated HW.
- Must count both the resultant mixture amount plus the other HW generated in the calendar month to determine whether the total quantity exceeds the SQG limit for the calendar month
  - The SQG must meet requirements for LQG if the SQG HW amount is exceeded due to the resultant mixture

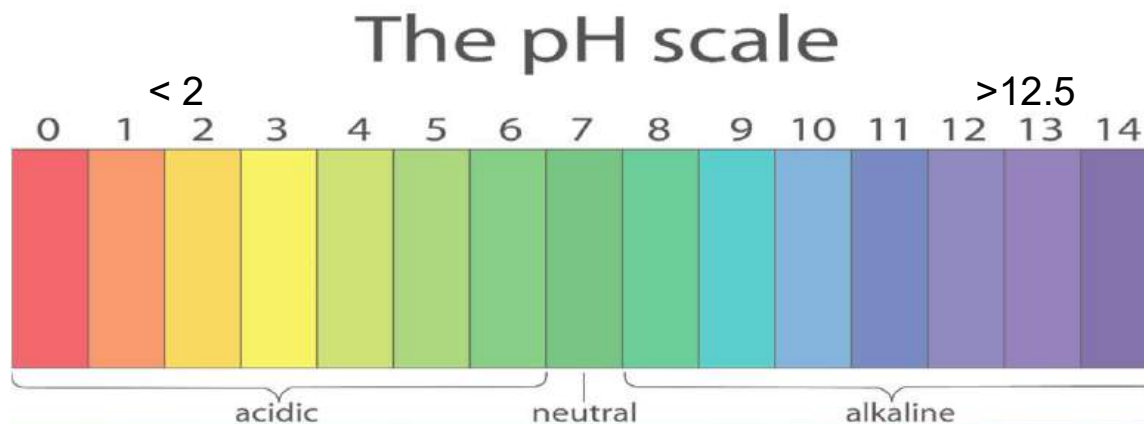
# Hazardous Waste Mixture Rule



## Mixing, Diluting and Alteration of the Waste – Points to Remember



- Hazardous wastes generated by a generator may be mixed with solid waste.
- If a hazardous waste is mixed or diluted with a solid waste as part of a legitimate treatment process, it is permissible, and may also address LDR requirements. Example: adding acid to neutralize a corrosive waste.



## *Mixing, Diluting and Alteration of the Waste – Points to Remember*



- However, dilution of waste as a substitute for adequate treatment or to otherwise circumvent the waste treatment requirements is prohibited by the LDR regulations (see 268.3)
- A hazardous waste *determination* must be made *before* mixing or alteration.
- Waste that is hazardous when generated but has been decharacterized may remain subject to the LDR waste treatment requirements (see 261.3(d)(1)).



## *Definition of Treatment*

### *40 CFR 260.10*

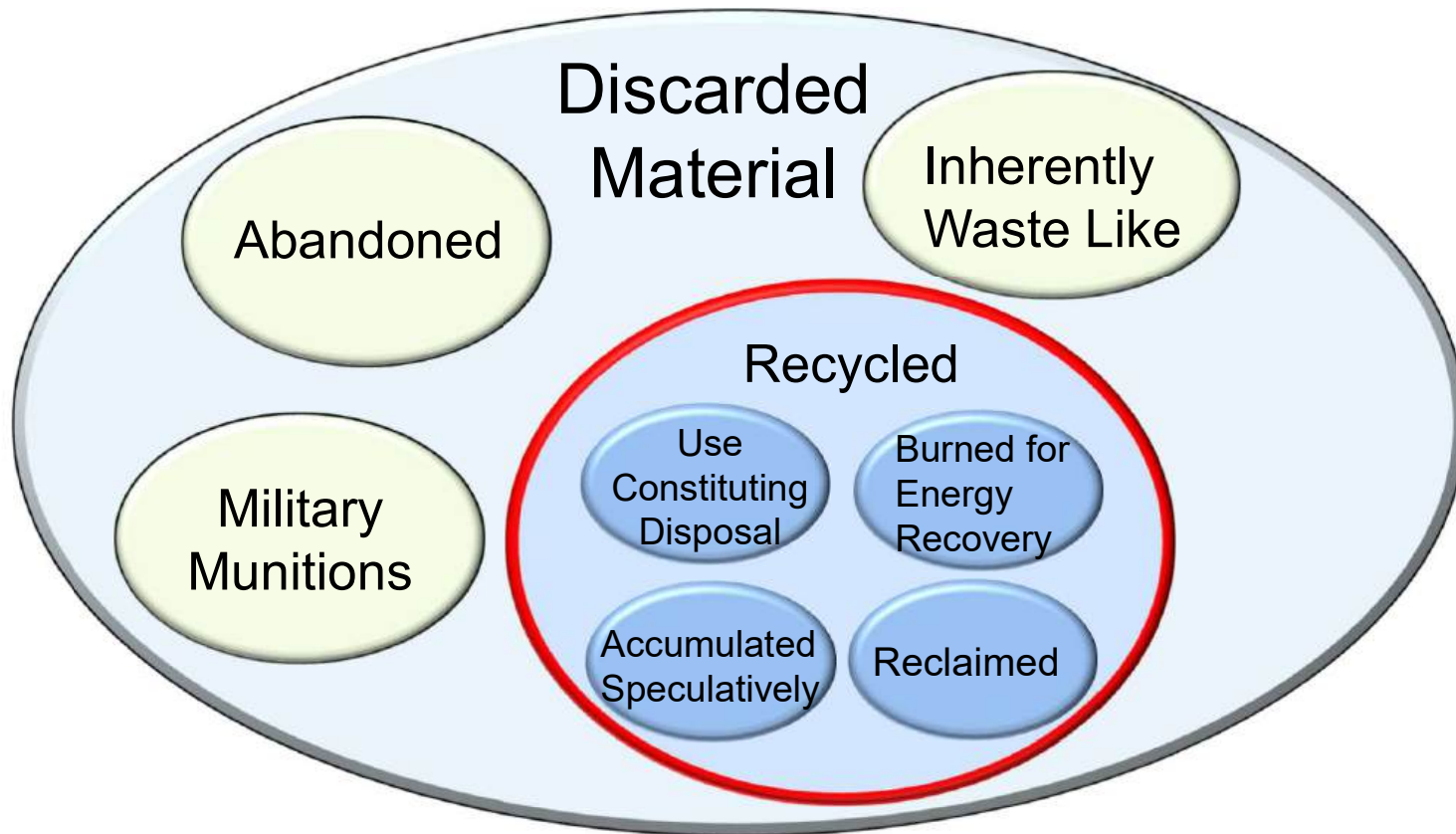
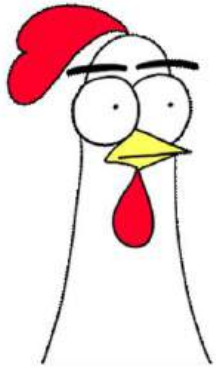
- Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste ***so as to*** neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

# *Recycling*

# Definition of Solid Waste

Recyclable Materials that are Solid Waste

- VSQG
- SQG
- LQG



# *RCRA Definition of Recycling*

*40 CFR 261.1(c)(7)*



A material is **Recycled** under RCRA if it is

- Used,
- Reused, or
- Reclaimed



*Definitions*  
*40 CFR 261.1(c)(4 & 5)*



- **Used or Reused** – a material is used or reused if it is either:
  - Employed as an ingredient in an industrial process to make a product; or
  - Employed as an effective substitute for a commercial product

## *Definitions*

*40 CFR 261.1(c)(4 & 5)*



- **Reclaimed** – a material is reclaimed if it is processed to produce a usable product or if it is regenerated.



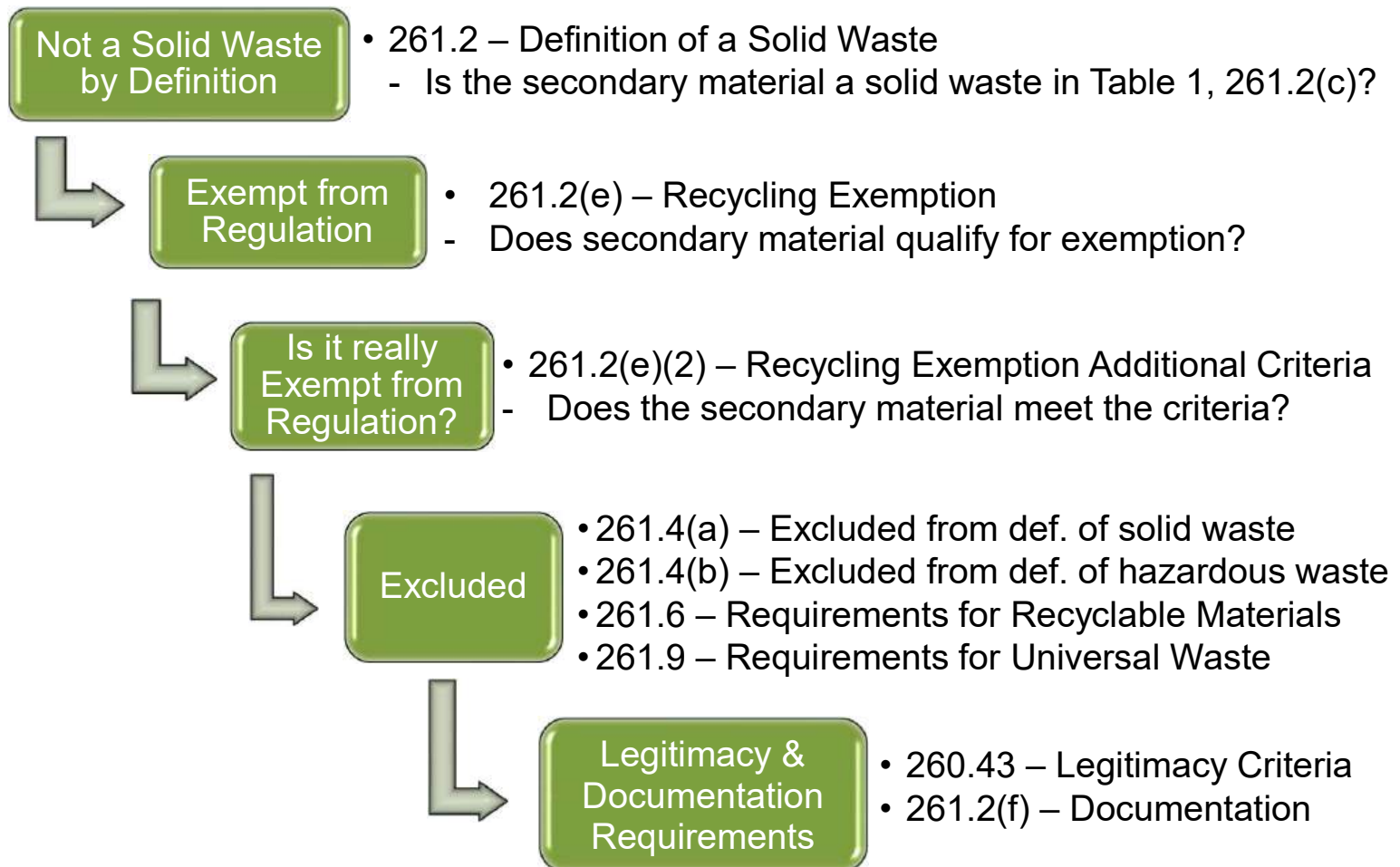
## *Secondary Material*



To recycle under RCRA you must start with a secondary material.

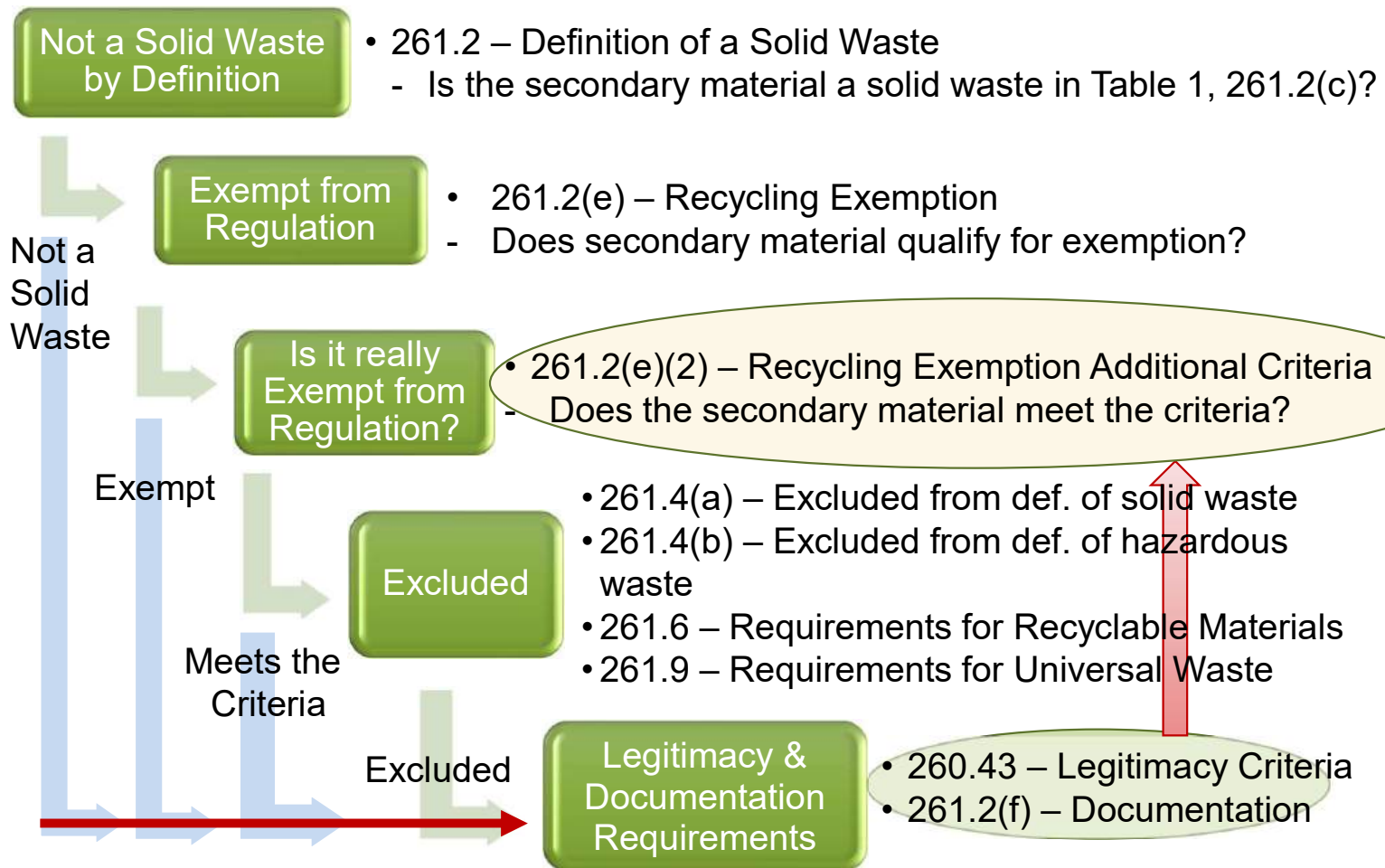
- A secondary material is a material that is potentially a solid and hazardous waste when recycled. (January 4, 1985; 50 FR 616)
- A hazardous secondary material (e.g., spent material, by-product or sludge) that, when discarded, would be a hazardous waste.
  - Hazardous Secondary Material = “HSM”

# Five Steps to Determine if you have a Solid Waste when RCRA Recycling





# Five Steps to Determine if you have a Solid Waste when RCRA Recycling



# Five Steps to Determine if you have a Solid Waste when RCRA Recycling

**Not a Solid Waste by Definition**

- **261.2 – Definition of a Solid Waste**

- Is the secondary material a solid waste in Table 1, 261.2(c)?



**Exempt from Regulation**

- 261.2(e) – Recycling Exemption

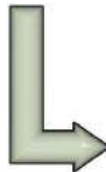
- Does secondary material qualify for exemption?



**Is it really Exempt from Regulation?**

- 261.2(e)(2) – Recycling Exemption Additional Criteria

- Does the secondary material meet the criteria?



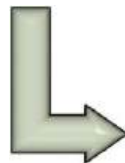
**Excluded**

- 261.4(a) – Excluded from def. of solid waste

- 261.4(b) – Excluded from def. of hazardous waste

- 261.6 – Requirements for Recyclable Materials

- 261.9 – Requirements for Universal Waste



**Legitimacy & Documentation Requirements**

- 260.43 – Legitimacy Criteria

- 261.2(f) – Documentation

# *Step 1*

## *Is Secondary Material a Solid Waste When Recycled?*

- Table 1 in 261.2(c)
- Purpose of table solely to determine if material is a solid waste when recycled.
- The table is NOT to determine the applicable regulations for the recycling process.

*Table 1 – 40 CFR 261.2(c)  
Determining When Recycled Materials are Solid Wastes*

	Use Constituting Disposal (261.2(c)(1))	Energy Recovery/Fuel (261.2(c)(2))	Reclamation (261.2(c)(3)) except as provided in 261.2(a)(2)(ii), 261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27)	Speculative Accumulation (261.2(c)(4))
Spent Materials	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)
Sludges (listed in 261.31 or 261.32)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)
Sludges exhibiting a characteristic of HW	Solid Waste (*)	Solid Waste (*)	<b>Not a Solid Waste</b> -	Solid Waste (*)
By-products (listed in 261.31 or 261.32)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)
By-product exhibiting a characteristic of HW	Solid Waste (*)	Solid Waste (*)	<b>Not a Solid Waste</b> -	Solid Waste (*)
Commercial Chemical Products listed in 261.33	Solid Waste (*)	Solid Waste (*)	<b>Not a Solid Waste</b> -	<b>Not a Solid Waste</b> -
Scrap metal that is not excluded under 261.4(a)(13)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)	Solid Waste (*)

# *Definitions*

## *40 CFR 261.1(c)(1)*

**Spent Material** – any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing.

Examples:

- Spent solvents
- Spent acids
- Wastewater



## *Definitions*

*40 CFR 261.1(c)(2) & N.C.G.S. 130A-290(a)(34)*

- **Sludge** – Any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.
- Can be listed or characteristic

# *Definitions*

## *40 CFR 261.1(c)(3)*

**By-product** – A material that is not one of the primary products of a production process and is not solely or separately produced by the production process

- By-products - could be listed and/or characteristic
- Examples: process residues such as slags, distillation column bottoms
- The term does not include a Co-product.
  - Co-product: Like a by-product produced in the main process, but in a form and grade than can be sold as it is produced.

# *Definitions*

## *40 CFR 261.33(d)*

- **Commercial Chemical Products** – A chemical manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient.
- Unused products listed in 261.33 (P and U listed materials). And,
- For recycling, all unused products such as circuit boards, batteries, gasoline, whether or not they are actually chemicals or listed in 261.33.
  - RCRA Online (RO) guidance Number: 11726 and 14012:
  - <https://rcrapublic.epa.gov/rcraonline/index.xhtml>



## *Definitions*

*40 CFR 261.1(c)(6)*

**Scrap Metal** – Bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces which may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.

## *Definitions*

### *40 CFR 261.4(a)(13)*

- **Excluded Scrap Metal** – Processed scrap metal, processed home scrap metal, and unprocessed prompt scrap metal being recycled.
- Definitions 40 CFR 261.1(c)(10 – 12)
- Processed Scrap Metal
- Processed Home Scrap Metal
- Unprocessed Prompt Scrap Metal

## *Definitions*

*40 CFR 261.2(c)(1)*

**Use *in a Manner Constituting Disposal*** means the material is placed directly onto the land or is used to produce materials that are placed on the land.

## *Definitions*

### *40 CFR 261.2(c)(2)*

- **Burning for Energy Recovery:** materials burned to recover energy are solid wastes when they are:
  - Burned to recovery energy;
  - Used to produce a fuel or are otherwise contained in fuels (in which case the fuel itself is a solid waste).
  - Commercial chemical products listed in 261.33 are *not* a solid waste if they themselves are fuels or a normal component of fuel.

## *Definitions*

*40 CFR 261.1(c)(4)*

**Reclaimed** – a material is reclaimed if it is processed to produce a usable product or if it is regenerated.

Examples:

- Regeneration (e.g., distillation) of spent solvents
- Regeneration of spent acids
- Recovery of metals from metal-bearing wastes

# Definitions

## 40 CFR 261.1(c)(4)

**Accumulated Speculatively** means a hazardous secondary material is accumulated before being recycled.

A material is **not** accumulated speculatively if:



➤ The person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and



➤ During the calendar year, January 1<sup>st</sup> - December 31<sup>st</sup>, the total amount of a material that is recycled, or transferred off site for recycling, must be 75 percent of the weight or volume of that material that was accumulated onsite on January 1st.

## *Example: Accumulated Speculatively*

*40 CFR 261.1(c)(8)*

- Hazardous Secondary Materials are generated and accumulated on site, waiting to be reclaimed.
- January 1, 2023
  - 20 pounds of a *characteristic* **sludge**
  - 100 pounds of a *characteristic* **by-product**

### *Question:*

How much do you have to recycle or transfer to a different facility for recycling during the calendar year?

## *Answer*

75% of each material of the same type (from the same process) that is recycled in the same way

- ❑ 15 pounds (of the 20 pounds) of the characteristic sludge
- ❑ 75 pounds (of the 100 pounds) of the characteristic by-product



## *Accumulated Speculatively*

*40 CFR 261.1(c)(8)*

- Materials must be placed in a storage unit with a label indicating the first date.
- If placing a label on the storage unit is not practicable, the accumulation period must be documented through an inventory log or other appropriate method.
- Materials accumulating in units exempt from regulation under §261.4(c) not included in making the calculation.
- Materials that are already defined as solid wastes also are not to be included in making the calculation.

# *Accumulated Speculatively*

## *40 CFR 261.1(c)(8)*

How to get out of this category:

- Materials are no longer accumulated speculatively once they are removed from accumulation for recycling.

## *Example: Off-Spec Acetone*

A chemical manufacturer produces a batch of off-specification acetone that they want to reclaim by distillation to recover solvents.

Is the acetone a solid waste?

*Table 1 – 40 CFR 261.2(c)  
Determining when Recycled Materials are Solid Wastes*

	Use constituting disposal (§261.2(c)(1))	Energy recovery/fuel (§261.2(c)(2))	Reclamation (§261.2(c)(3)), except as provided in §§261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27)	Speculative accumulation (§261.2(c)(4))
Spent Materials	(*)	(*)	Solid Waste (*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32)	(*)	(*)	Solid Waste (*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	Not a Solid Waste –	(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	Solid Waste (*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	Not a Solid Waste –	(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	Not a Solid Waste –	Not a Solid Waste –
Scrap metal that is not excluded under 40 CFR 261.4(a)(13)	(*)	(*)	Solid Waste (*)	(*)

*Answer:*

**Not A Solid Waste**

The acetone is a listed commercial chemical product, which, when reclaimed, is not a solid waste per 40 CFR 261.2(c)(3).

# Example: Dirty Acetone

Dirty Acetone from a parts cleaning operation is shipped off site for recycling.

Does the shipment require a hazardous waste manifest?

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NCR000000000	2. Page 1 of 2	3. Emergency Response Phone 1-800-000-0000	4. Manifest Tracking Number 006903644	
5. Generator's Name and Mailing Address Facility 300 West 189th Street GREENVILLE NC 27834-0000 Generator's Phone: 252-555-8888			6. Generator's Site Address (if different than mailing address)			
8. Transporter 1 Waste Transporters INC				U.S. EPA ID Number TXR00000		
7. Transporter 2 Company Name Hazardous Waste Transport INC.				U.S. EPA ID Number MAD00000		
9. Designated Facility Name and Site Address Haz Waste Treater, Inc. SOUTH Texas Way Somewhere, TX 70777 Designated Facility's Phone: 222-555-0000				U.S. EPA ID Number TXD00000		
10. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt/Vol	13. Waste	
	No.	Type			DOT	HAZ
UN1760, WASTE TOXIC LIQUIDS, N.D.S., (ACETONE), 8, PG II	10	DF	3630	P	D005	DUT
UN1760, WASTE CORROSIVE LIQUIDS, N.D.S., (PHOSPHORIC ACID), 8, PG II	03	DF	950	P	D002	DUT
UN2014, WASTE HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS, 5.1, (8), PG II	01	DF	400	P	D001	D002
N/A, NON DOT REGULATED MATERIAL, (ACIDIC DETERGENT), N/A	03	DF	1,200	P	DLTS	E+5
14. Sending Instructions and Additional Information TSD:DE 80366468 UN48173 CSG:						
15. Agency Authority 15412)ERG#15413)ERG#140; AGENCY#800-448-1116-Contract retained by generator confers agency authority						
16. Generator'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, labeled, packaged, 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 shipper, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I hereby certify that the waste description statement identified in 40 CFR 263.27(b) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
17. Signature and Date Printed/Typed Name: _____ Signature: _____ Date: _____						
18. Receipt Information Quantity: _____ Type: _____ Residue: _____ Partial Reception: _____ Full: _____ Manifest/Reference Number: _____ U.S. EPA ID Number: _____ Month: _____						
19. Receipt Information Receipt Date: _____ Month: _____						
20. Receipt Information Receipt Date: _____ Month: _____						
21. Receipt Information Receipt Date: _____ Month: _____						
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23. Receipt Information Receipt Date: _____ Month: _____						
24. Receipt Information Receipt Date: _____ Month: _____						
25. Receipt Information Receipt Date: _____ Month: _____						
26. Receipt Information Receipt Date: _____ Month: _____						
27. Receipt Information Receipt Date: _____ Month: _____						
28. Receipt Information Receipt Date: _____ Month: _____						
29. Receipt Information Receipt Date: _____ Month: _____						
30. Receipt Information Receipt Date: _____ Month: _____						
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48. Receipt Information Receipt Date: _____ Month: _____						
49. Receipt Information Receipt Date: _____ Month: _____						
50. Receipt Information Receipt Date: _____ Month: _____						



*Table 1 – 40 CFR 261.2(c)  
Determining whether Recycled Materials are Solid Wastes*

	Use constituting disposal (§261.2(c)(1))	Energy recovery/fuel (§261.2(c)(2))	Reclamation (§261.2(c)(3)), except as provided in §§261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27)	Speculative accumulation (§261.2(c)(4))
Spent Materials	(*)	(*)	Solid Waste (*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32)	(*)	(*)	Solid Waste (*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	Not a Solid Waste –	(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	Solid Waste (*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	Not a Solid Waste –	(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	Not a Solid Waste –	Not a Solid Waste –
Scrap metal that is not excluded under 40 CFR 261.4(a)(13)	(*)	(*)	Solid Waste (*)	(*)

*Answer:*

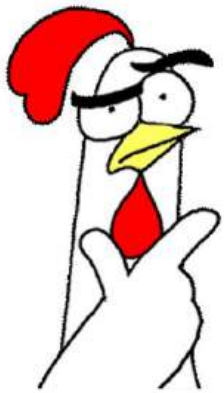
Yes, spent materials are solid waste when reclaimed.

*Continue Steps 2 through 4 to check for any other exemptions or exclusions that could apply.*



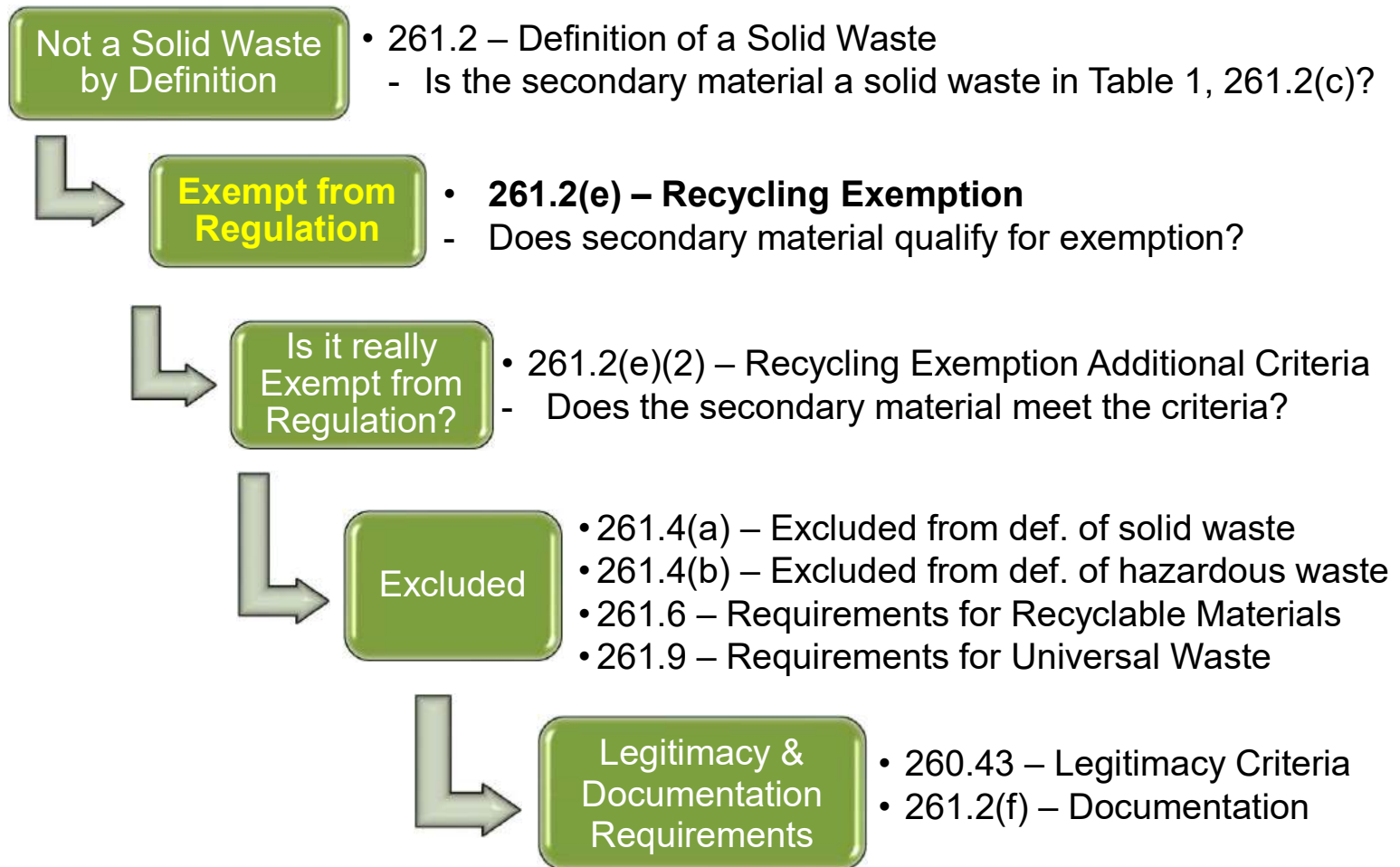


## *I Have a Solid Waste, So Now What?*



- Go on to Step 2 through 5.
  2. Qualify for one of the recycling exemptions?
  3. Additional requirements for exemptions met?
  4. Can it meet another exclusion?
  5. Prescribed documentation kept?
- Requires going through back and forth through the regulations. (260.10, 261.2, 261.4, 261.6, 266 and 279)

# Five Steps to Determine if you have a Solid Waste when RCRA Recycling



## *Five Steps to Determine if you have a Solid Waste when RCRA Recycling*

### **Next Step: Determine if the waste has an exemption**

- **261.2(e) – Recycling Exemption**
  - Does secondary material qualify for exemption?



*Step 2*  
*Is the Material Exempt by Being Recycled?*  
*40 CFR 261.2(e)*

Materials are **not** solid waste if they are *recycled* by being:

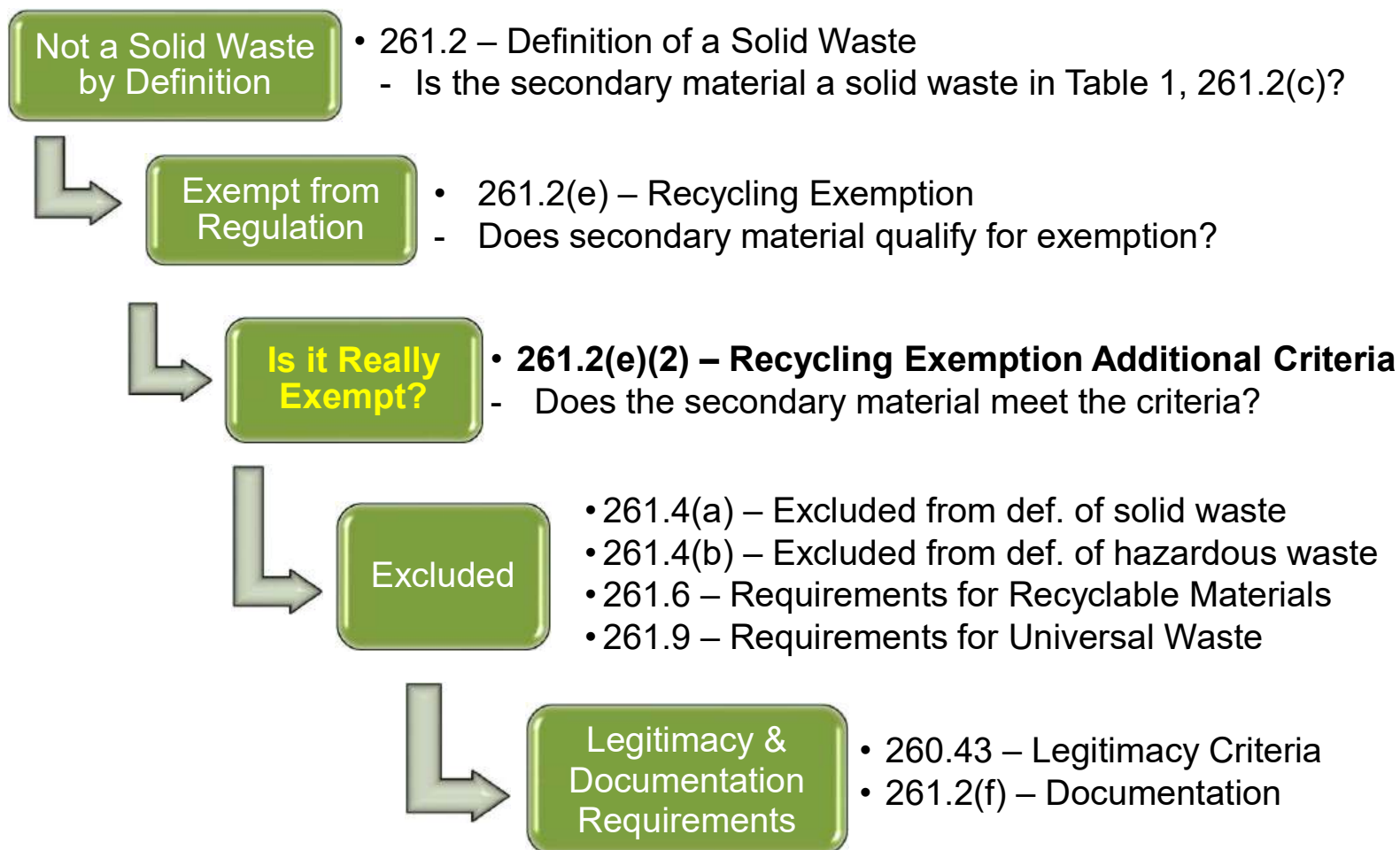
- Used or reused as ingredients in an industrial process to make a product, provided that the materials are **not** being reclaimed
- Used or reused as effective substitutes for commercial products

*Step 2 (continued)*  
*Is the Material Exempt by Being Recycled?*  
*40 CFR 261.2(e)*

Materials are **not** solid waste if they are *recycled* by being:

- Returned to the original process from which they are generated, without first being reclaimed or land disposed.
  - In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the land.

## *Five Steps to Determine if you have a Solid Waste when RCRA Recycling*

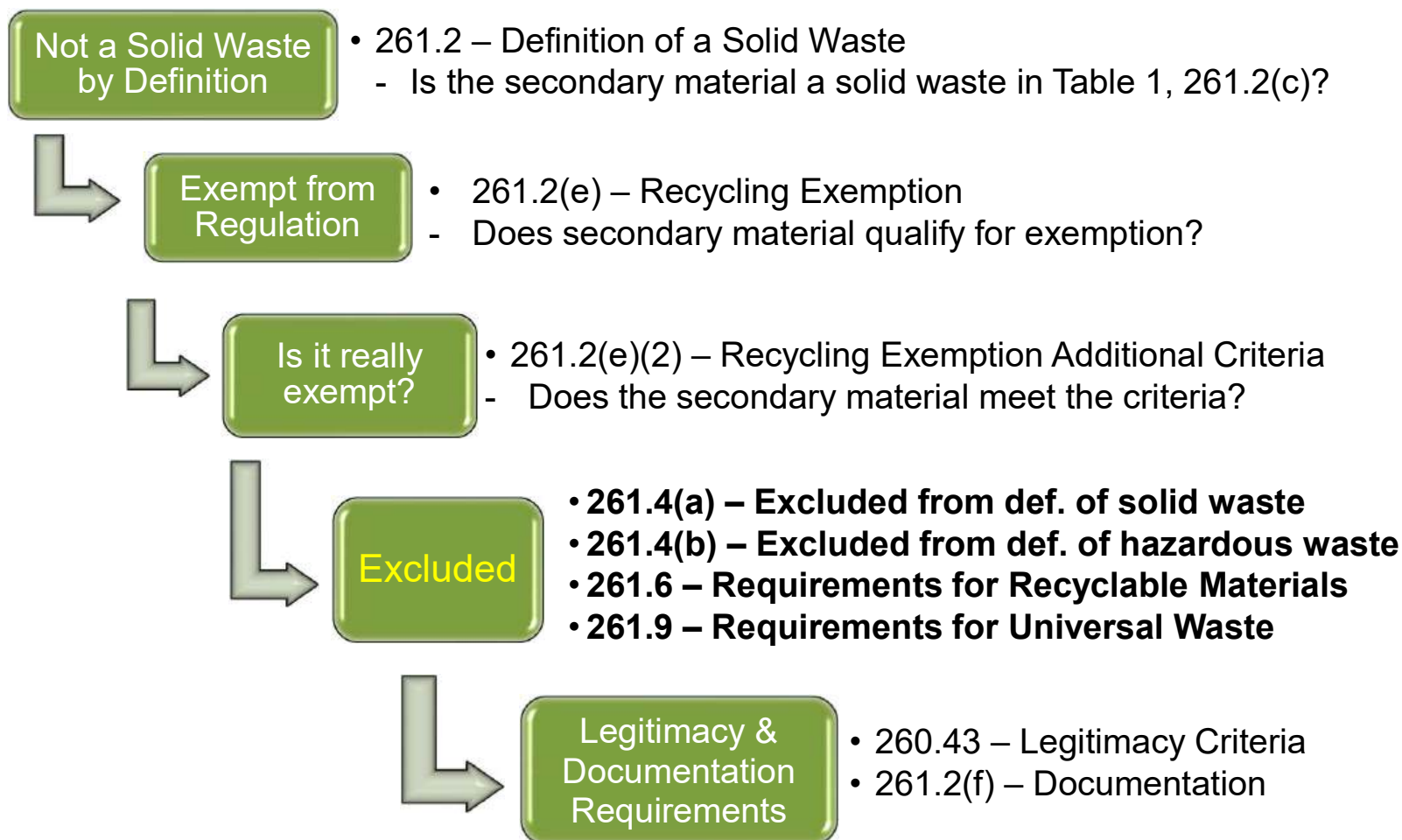


*Step 3*  
*Is the Material Exempt by Being Recycled?*  
*40 CFR 261.2(e)(2)*

Materials **remain** solid waste when *recycled* by being used, reused, or returned to the original process if this recycling includes:

- Used in a manner constituting disposal, or used to produce products that are applied to the land
- Burned for energy recovery, or are fuels, or are in fuels
- Accumulated speculatively (over 1 calendar year)
- Inherently waste-like (40 CFR 261.2(d))

## *Five Steps to Determine if you have a Solid Waste when RCRA Recycling*





# *Closed Loop Recycling with Reclamation*

## *40 CFR 261.4(a)(8)*

Secondary materials that are reclaimed and returned to original process(es) where they were generated where they are reused in the production process are not a solid waste provided:

- Only tank storage
- The entire process is closed, entirely connected with pipes or other comparable enclosed means of conveyance; (no outlet)
- Reclamation does not involve controlled flame combustion
  - Such as boilers, industrial furnaces, or incinerators
- The secondary materials are never accumulated in such tanks for over twelve months without being reclaimed; and
- The secondary material is not used to produce a fuel or used to produce products that are used in a manner constituting disposal.

*Table 1 – 40 CFR 261.2(c)*  
*Determining whether Recycled Materials are Solid Wastes*

	Use constituting disposal (§261.2(c)(1))	Energy recovery/fuel (§261.2(c)(2))	Reclamation (§261.2(c)(3)), except as provided in §§261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27)	Speculative accumulation (§261.2(c)(4))
Spent Materials	(*)	(*)	Solid Waste (*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32)	(*)	(*)	Solid Waste (*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	Not a Solid Waste –	(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	Solid Waste (*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	Not a Solid Waste –	(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	Not a Solid Waste –	Not a Solid Waste –
Scrap metal that is not excluded under 40 CFR 261.4(a)(13)	(*)	(*)	Solid Waste (*)	(*)

## *Reclamation Exclusions*

- When all conditions of the exclusion are met, HSM (specifically spent material, listed byproducts, and listed sludges) that are legitimately reclaimed are not solid waste.
- If any of the conditions of the exclusion are not met, the hazardous secondary material is considered a solid waste *and* discarded *and* the hazardous waste rules are again applicable.
- Does not include HSM that are burned for energy recovery or “use constituting disposal”.

## *Reclamation Exclusions*

### *40 CFR 261*

- Subpart H - Financial Assurance for Reclaimers and Intermediate Facilities (Transfer Based Exclusion)
- Subpart I – Use and Management of Containers for the Remanufacturing Exclusion
- Subpart J – Tank Systems for the Remanufacturing Exclusion
- Subpart M – Emergency Preparedness and Response for the Management of Excluded Hazardous Secondary materials where hazardous secondary materials are generated or accumulated on site. (Generator Controlled Exclusion and Transfer Based Exclusion)
- Remanufacturing Exclusion
  - Subpart AA – Air Emission Standards for Process Vents
  - Subpart BB – Air Emission Standards for Equipment Leaks
  - Subpart CC – Air Emission Standards for Tanks and Containers

*Step 4 (continued)*  
*Special Management Standards When Recycled*

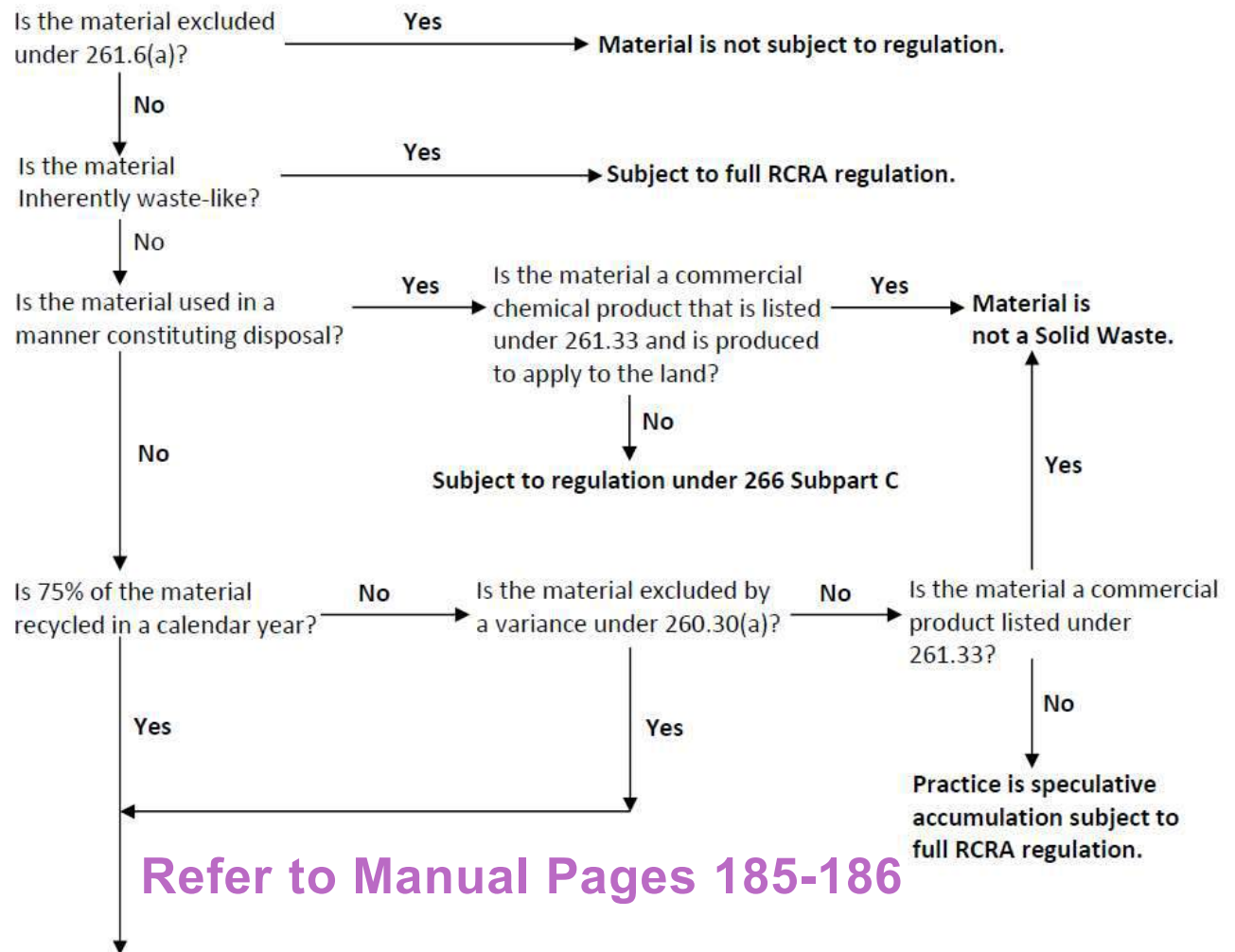
- Precious metals recovery - 40 CFR 266 Subpart F
- Spent lead–acid batteries reclaimed - 40 CFR 266 Subpart G
- Reclaimed industrial ethyl alcohol - 40 CFR 261.6(a)(3)(i)

*Step 4 (continued)*  
*Special Management Standards When Recycled*

- Scrap metal reclamation
  - 40 CFR 261.6(a)(3)(ii)
- Used Oil
  - 40 CFR 261.6(a)(4) and 40 CFR 279
- Universal Waste
  - 40 CFR 261.9 and 40 CFR 273

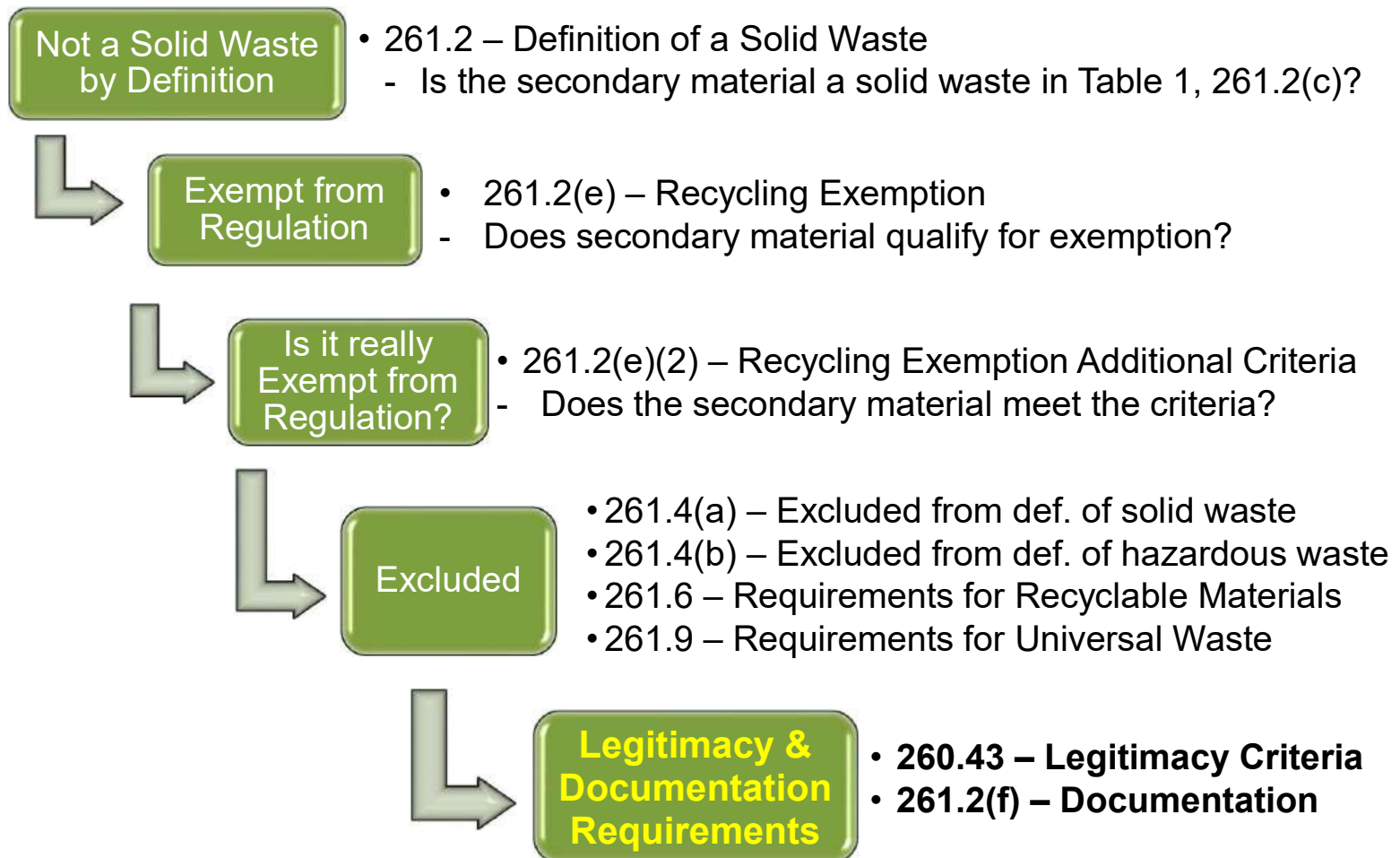
# Decision Diagram B from Manual

## Decision Diagram B - Hazardous Waste Recycling



Refer to Manual Pages 185-186

## *Five Steps to Determine if you have a Solid Waste when RCRA Recycling*





## *Step 5*

### *Legitimacy and Documentation*

Any Recycling Activity must meet the Legitimacy Factors of 260.43(a)

- (1) Provide a useful contribution to the recycling process or to a product or intermediate of the recycling process
- (2) Produce a valuable product or intermediate
- (3) Manage the hazardous secondary material as a valuable commodity when it is under their control.

*Step 5 (continued)*  
*Legitimacy and Documentation*

Any Recycling Activity must meet the Legitimacy Factors of 260.43(b) Must **evaluate** all factors and consider overall legitimacy of a specific recycling activity

- (1) The product of recycling does not:
- (i) Contain significant concentrations of any hazardous constituents from Appendix VIII not in analogous products
  - (i) Contain concentrations of hazardous constituents at levels significantly elevated from those found in analogous products
  - (i) Exhibit a hazardous characteristic that analogous products do not exhibit

## *Legitimacy and Documentation*

DEQ Hazardous Waste Section web page resources:

[Technical Assistance and Guidance Documents | NC DEQ](#)

### **Hazardous Secondary Material (HSM)**



- [Template for Documenting Legitimacy Factors for HSM](#)
- [Generator Controlled Exclusion for HSM Guidance](#)
- [Transfer Based Exclusion for HSM Guidance](#)
- [Link to EPA's HSM Recycling Checklist](#)
- [Link to EPA's Implementation Guide for the Definition of Solid Waste Exclusion found at 40 CFR 261.4\(a\)\(24\)](#)





*Examples  
of “Sham”  
Recycling*

- Ineffective or only marginally effective for the claimed use
- Used in excess of the amount necessary
- Handled in a manner inconsistent with its use as a raw material or commercial product substitute
- Recycled product is not comparable to a product made from analogous raw materials





## *Step 5*

# *Legitimacy and Documentation*

- Documentation of claims that materials are not solid wastes 261.2(f) will:
  - *Demonstrate* a known market for the material exists that meets the terms of the exclusion/exemption.
  - *Prove* the claim that the material is not a solid waste and is available for review during inspections.

## *Question: Waste Acid*

**Spent sulfuric acid** from a chemical manufacturing process is used to produce fertilizer that is sold to the general public.

What is the status of the spent acid?

*Table 1 – 40 CFR 261.2(c)  
Table for Determining whether Recycled Materials are Solid Wastes*

	Use constituting disposal (§261.2(c)(1))	Energy recovery/fuel (§261.2(c)(2))	Reclamation (§261.2(c)(3)), except as provided in §§261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27)	Speculative accumulation (§261.2(c)(4))
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32)	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	Not a Solid Waste –	(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	Not a Solid Waste –	(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	Not a Solid Waste –	Not a Solid Waste –
Scrap metal that is not excluded under 40 CFR 261.4(a)(13)	(*)	(*)	(*)	(*)



## *Question: Scrap Metal*

Scrap metal exhibits the toxicity characteristic for lead (D008).

A facility sends the scrap metal to a reclamation facility.

How should this material be managed?

*Table 1 – 40 CFR 261.2(c)*  
*Table for Determining whether Recycled Materials are Solid Wastes*

	Use constituting disposal (§261.2(c)(1))	Energy recovery/fuel (§261.2(c)(2))	Reclamation (§261.2(c)(3)), except as provided in §§261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27)	Speculative accumulation (§261.2(c)(4))
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Scrap metal that is not excluded under 40 CFR 261.4(a)(13)	(*)	(*)	(*)	(*)



NOT A SOLID WASTE WHEN  
RECYCLED.

---

If the scrap metal will be recycled, it is exempt from RCRA hazardous waste requirements per 261.6(a)(3)(ii).

---

# *Question: Laboratory Chemicals*



Unused reagents in their original containers are left over from a research project in a laboratory.



These are common reagents that could be used in other experiments in different laboratories at the same facility.



Are the reagents solid waste?



*Answer:*

**NOT a solid waste  
until a determination  
is made to discard  
the materials.**



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## *Question: Laboratory Chemicals*

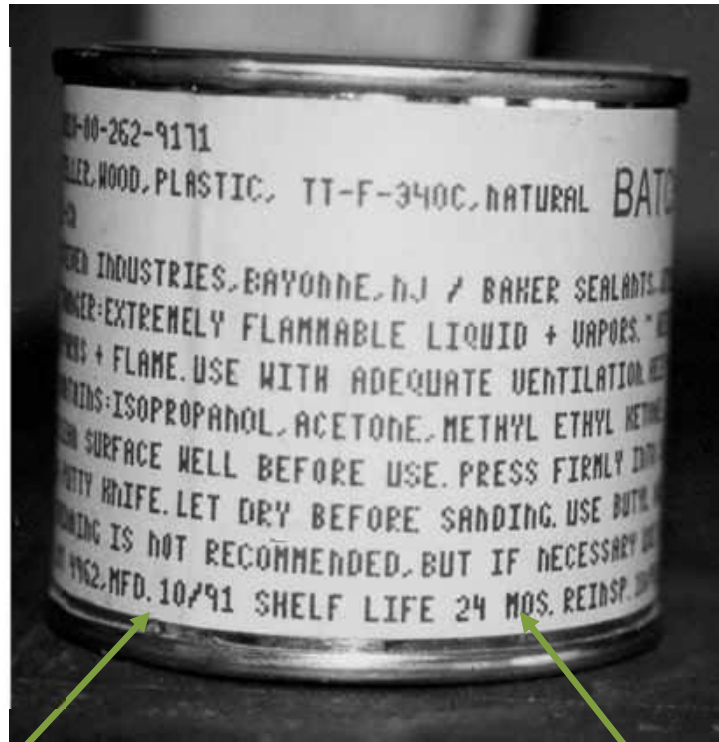
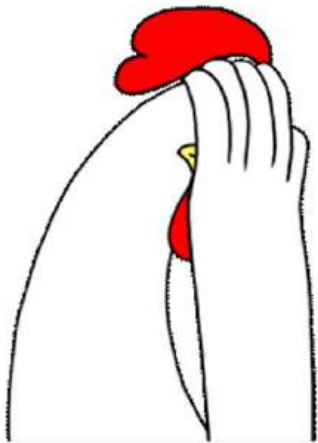
- A cabinet with old dusty containers.
- Past expiration dates
- No expiration date but old and no longer going to be used.
- Are the reagents solid waste?

*Table 1 – 40 CFR 261.2(c)  
Determining whether Recycled Materials are Solid Wastes*

	Use constituting disposal (§261.2(c)(1))	Energy recovery/fuel (§261.2(c)(2))	Reclamation (§261.2(c)(3)), except as provided in §§261.4(a)(17), 261.4(a)(23), 261.4(a)(24) or 261.4(a)(27)	Speculative accumulation (§261.2(c)(4))
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Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	Not a Solid Waste –	Not a Solid Waste –
Scrap metal that is not excluded under 40 CFR 261.4(a)(13)	(*)	(*)	Solid Waste (*)	(*)

*However;*

This one is 30 years past its shelf life. Most likely of no use in the optimized process now. Once determined it will be discarded, it becomes a solid waste.



Manufactured 10/91

Shelf Life 24 months



## *Question: Unknown Material*

- During the lab safety inspection you encounter unlabeled glass containers.
- All lab staff are aware of the containers, but have no idea what they contain.
- Are these materials solid waste?
- If so, are they hazardous waste?





## The materials are solid waste.

---

- *If the materials are unknown, then sampling and testing are required to determine if the solid waste is also a hazardous waste.*

*Questions?*



## *Image Credits:*

*All photos in the presentation were selected from NC DEQ inspection archived photos or from the Stock Images and Design Themes provided within MS PowerPoint.*





2024 Waste Minimization/  
Sustainable Materials Management  
*Department of Environmental Quality*





**Rose Pruitt**  
Hydrogeologist

**Division of Waste Management**  
**Hazardous Waste Section**

[Rose.Pruitt@deq.nc.gov](mailto:Rose.Pruitt@deq.nc.gov)

**919.270.3476**



**\*Hazardous Waste Generator Compliance Manual**

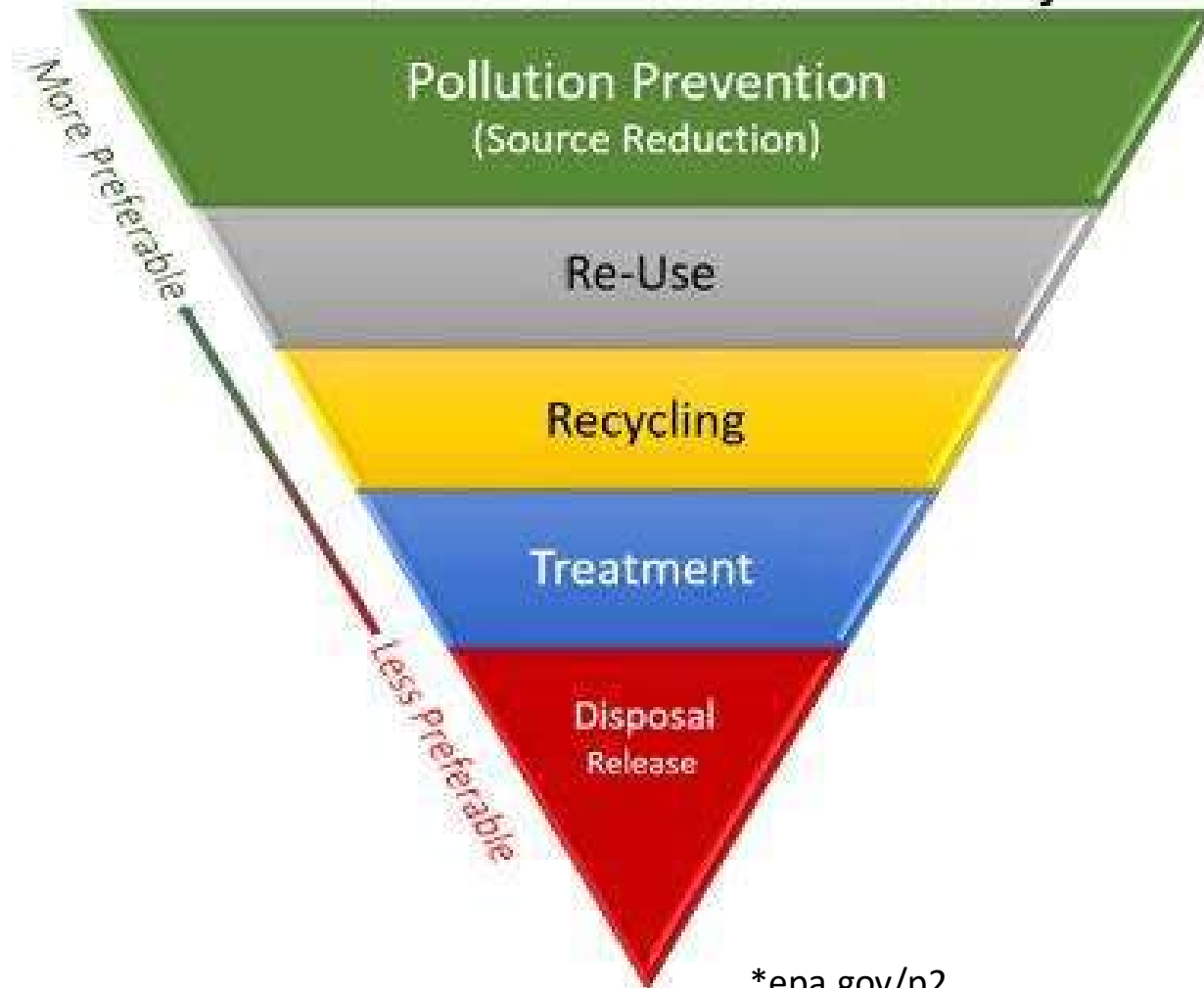
**\*pages 67-78\***

**What will be covered in this presentation:**

- **Waste Minimization** is a management approach that focuses on reducing and/or eliminating the amount & toxicity of hazardous waste generated.
  - **Source Reduction**
  - **Sustainable Materials Management (SMM)** is a systematic approach to using and reusing materials more productively over their life cycles.
- **NCDEQ Resources** available to assist



## Environmental Protection Hierarchy



\*[epa.gov/p2](http://epa.gov/p2)





## Waste Minimization

- The use of **source reduction and/or recycling methods** prior to energy recovery, treatment, or disposal of waste(s).
- Any action that reduces the amount and/or toxicity of chemical wastes that must be shipped off-site for disposal as hazardous waste.

\*If you are a **LQG** or **SQG**, [40 CFR 262.27](#) requires you to demonstrate some form of waste minimization activity, depending on your generator status.

↑ You agree to this when signing the manifest ↑



## Waste Minimization

LQG/SQG; Page 67

### Hazardous Waste Manifest Certification Statements

**40 CFR 262.27** A Large Quantity Generator (LQG) or Small Quantity Generator (SQG) who initiates a shipment of HW will certify as such in **Item 15** of the Uniform Hazardous Waste Manifest:

(a) “I am a **Large Quantity Generator**. I have a **program in place** to reduce the volume and toxicity of waste generated to the degree I have determined to be **economically practicable**, and I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.”

(b) “I am a **Small Quantity Generator**. I have made a **good faith effort** to minimize my waste generation and select the best waste management method that is available to me and that I can afford.”



## Waste Minimization Plan

- Best way to demonstrate compliance is to maintain a written waste minimization plan
- If no written plan is maintained, be prepared to fully **explain** your waste minimization activities during the inspection process. At a minimum, provide a written policy statement.



*Written example on  
Page 72 of Manual*



## *Waste Minimization & Biennial Report*



\*LQGs

### **The Biennial Report (LQGs) reflects:**

- The efforts undertaken during the year to **reduce** the **volume & toxicity** of the HW generated;
- The **changes** in volume & toxicity achieved in comparison to previous years.



## Waste Minimization

Page 68

Waste Minimization **does not** include:

- Waste Treatment:
  - Processes designed to change the physical, chemical, or biological composition of waste streams
- Energy Recovery
- Disposal of Waste
- Dilution for Toxicity Reduction (**illegal** per RCRA!)

### §268.3 Dilution prohibited as a substitute for treatment.

(a) Except as provided in paragraph (b) of this section, no generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with subpart D of this part, to circumvent the effective date of a prohibition in subpart C of this part, to otherwise avoid a prohibition in subpart C of this part, or to circumvent a land disposal prohibition imposed by RCRA section 3004.

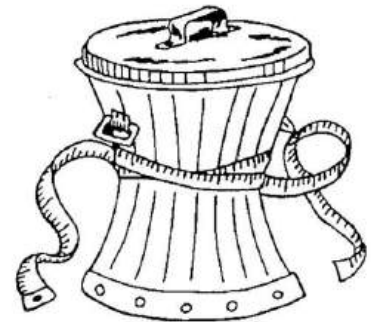
(b) Dilution of wastes that are hazardous only because they exhibit a characteristic in treatment systems which include land-based units which treat wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Clean Water Act (CWA), or which treat wastes in a CWA-equivalent treatment system, or which treat wastes for the purposes of pretreatment requirements under section 307 of the CWA is not impermissible dilution for purposes of this section unless a method other than DEACT has been specified in §268.40 as the treatment standard, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.

## *Benefits of Waste Minimization*

### Reductions

# Reduces waste generation and costs through:

- Raw material and product losses (expired materials)
- Raw material purchase costs (purchase only what is needed)
- Waste management recordkeeping/paperwork burden
- Waste management costs (time & shipping = \$\$\$)
- Workplace accidents/exposure
- Potential compliance issues





## *Waste Minimization Practices*

- Source Reduction
- Training Program
- Housekeeping
- Procurement Strategies
- Recycling
- Manufacturing Processes



## Source Reduction

**Source Reduction** reduces or eliminates the generation of waste at the source and refers to any practice that reduces the use of hazardous materials in production processes. Examples include:

- **Reformulating or redesigning products**, ex: lead free PVC compounds (lead in PVC occurred in US; as recent as 2015 in Europe).
- **Using less-toxic feedstocks**, ex: lead-free solder in manufacturing
- **Improving work practices**, ex: rotating stock/ingredients to prevent expiration





## *Source Reduction Strategies*

### Reducing Your Waste Generation

- Waste audits
- Personnel training
- Inventory control
- Reuse/recycling
- Preventative maintenance
- Process changes
- Use of less-hazardous/non-hazardous products/components



## *Source Reduction Strategies*

### Waste Audit



**The Waste Audit is an in-house analysis of operations generating waste.**

- **Raw materials/cleaning substitutions**
  - Ingredient changes
  - Solvent substitutions
- **Technology modification**
  - Powder coat vs. conventional spray
  - Water based
- **Closed-loop recycling**
  - Distillation



## *Source Reduction Strategies*

### Personnel Training

- All personnel with hazardous waste management responsibilities should receive thorough introductory and refresher training to ensure that proper procedures are followed to comply with RCRA regulations.
- Trained personnel =>  
Proper waste management=>  
Reduced exposure/waste generation



## *Source Reduction Strategies*

### Housekeeping

Good housekeeping helps prevent product loss and subsequent waste management costs.

Measures include:

- Procurement strategies
  - Proper storage practices
  - Handling & spill preparedness
  - Disposal and training
- What's  
the  
plan?



## *Source Reduction Strategies*

### Procurement

## **Procurement strategies begin with evaluating purchasing practices:**

- Track material use and needs.
- Establish a procurement schedule.
- Check vendors' policies on “buy-backs” / returns, material guarantees, etc.
- In-house examination of raw materials to determine usability.
  - Has it really “expired”?



## *Source Reduction Strategies*

### Recycling Examples

Alternate Uses Include:

- **Direct use** - an ingredient in a product or substitute product
- **Recovery and/or purification** - spent solvents, petroleum and used oils- ex: recycling solvents/thinners, engine oil, metalworking fluids, hydraulic fluids, etc., to recover usable components.

***These activities may be RCRA regulated. Be sure to understand the processes and any applicable exclusions or exemptions.***



## *Source Reduction Strategies*

Reuse/Recycling: Batch Distillation

**Batch Distillation Units** can maximize productivity while minimizing the quantity of hazardous waste generated.



*Source Reduction Strategies*  
Reuse/Recycling: On-Site Distillation



Permanent Constant Feed Units



Mobile/Contractor Distillation Units



.. can lower disposal costs and enhance recovery and reuse of the product.





## *Source Reduction Strategies*

### Recycling Examples

When mercury is removed from switches, gauges, electronics, dental amalgam, etc., it can be recycled for use in new products that still require mercury. See [www.epa.gov/mercury](http://www.epa.gov/mercury)

The leading domestic end uses\* of mercury and mercury compounds:

- Dental amalgam (43%)
- Relays, sensors, switches, & valves (41%)
- Bulbs, lamps, & lighting (8%)
- Formulated products (buffers, catalysts, fixatives, & vaccination uses) (7%)
- Batteries & other end uses (1%)

- \*U.S. Geological Survey, Mineral Commodity Summaries, January 2022  
<https://pubs.usgs.gov/periodicals/mcs2022/mcs2022-mercury.pdf>



*Source Reduction Strategies*  
Inventory Control



.. is it?



*Source Reduction Strategies*  
Preventative Maintenance - Inspections

Conduct routine PM on equipment



**Equipment failure =  
waste generation,  
potential exposure, &  
lost production**



# *Source Reduction Strategies*

## Process Changes

### **Consider a process change**

Consider the following:

- Changes versus current practice
  
- Look at multiple aspects
  - Reduced toxicity
  - Reduced waste disposal costs
  - Reduced product/ingredient costs
  - Reduced training costs



## *Source Reduction Strategies*

### Process Changes

A water based electro-deposition system replaced a traditional spray booth.



A powder coating system can also be substituted for a traditional paint booth.



## *Source Reduction Strategies*

### Product Substitution Example

A manufacturer introduced a biodegradable plant-based ester (non-hazardous) into all areas of manufacturing which eliminated acetone (hazardous solvent) usage at the facility (Poly-Chem Acra Strip 600 Composite Resin Remover).

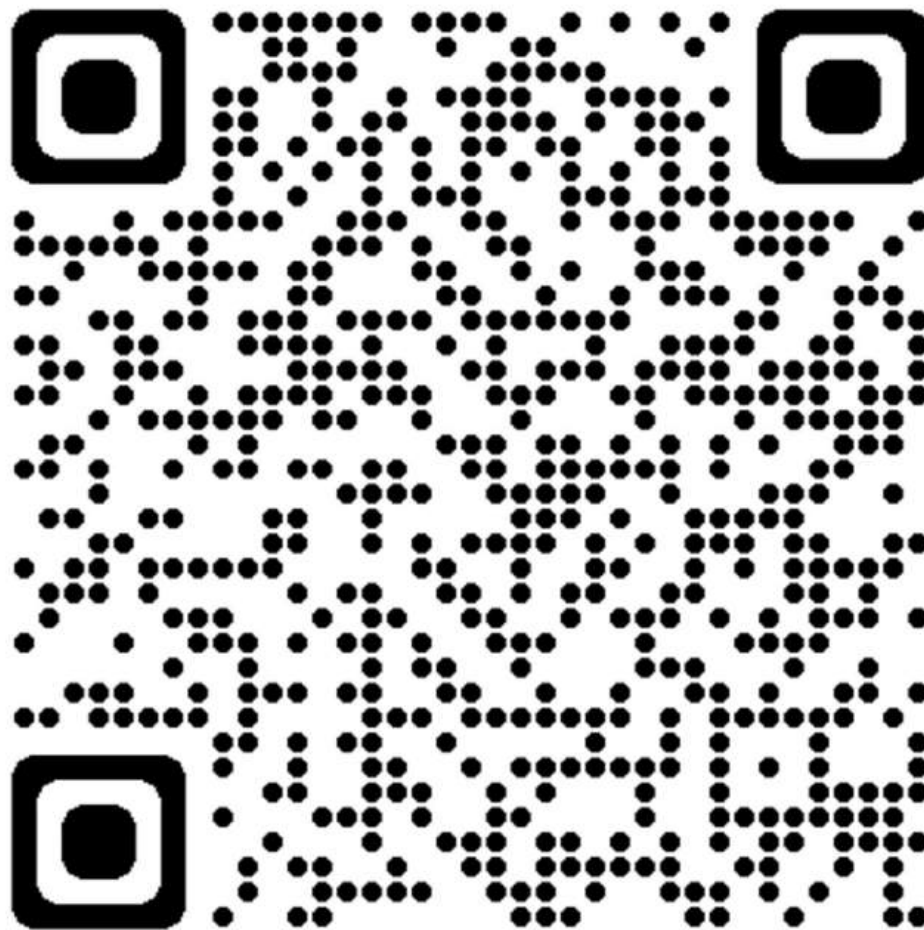
Less than two years later, it was able to renotify from a LQG to a SQG and operate as a Very Small Quantity Generator of HW apart from tank clean-out events once every few years.





*US EPA Safer Choice Program Link*

<https://www.epa.gov/saferchoice>



## US EPA Safer Choice Program



- Helps consumers and commercial buyers find safer products;
- Identifies products that perform well;
- Identifies products that are safer for human health and the environment.

### Find Safer Choice-Certified Products

e.g. company or product

Search



[All-Purpose Cleaners](#)



[Car Care Products](#)



[Dish Soaps](#)



[Floor Cleaners](#)



[Laundry Products](#)



[Tub and Tile Cleaners](#)





# US EPA Safer Choice Program

<https://www.epa.gov/saferchoice/products#sector=Business>



Safer Choice Home

Learn About Safer Choice

Frequently Asked Questions

Resources for Manufacturers

Partner of the Year Awards

**Search Safer Choice Products**

For Use in Your Community

Steps to Get the Safer Choice Label on Your Product

Safer Chemical Ingredients List

How to List on SCIL

Safer Choice Standard and Criteria

Related Programs

DfE Alternatives

## Search Products that Meet the Safer Choice Standard

*Busque productos que cumplan con la norma Safer Choice*

Looking for safer cleaning and other products? Use the search box below to find products that meet the Safer Choice Standard.

A downloadable spreadsheet of Safer Choice-certified products list is also available on [EPA Envirofacts](#).

### Search Safer Choice-Certified Products

Product or Company Name (Optional)

Business

Show only:

Fragrance-free products<sup>1</sup>

Products with outdoor uses<sup>2</sup>

Product Type (Optional)



# Source Reduction Strategies

## Minimize Resource Usage



Sky  
Lights



All fluorescent light fixtures are off.  
The light source is entirely solar.



## *US EPA Sustainable Materials Management*

Sustainable Materials Management (SMM) is the focus of US EPA Waste Minimization efforts.

The use & reuse of materials in the most productive & sustainable way across the entire life cycle (from point of resource extraction through material disposal: Cradle-to-Grave).



## *Sustainable Materials Management*

- By examining how materials are used throughout their life cycle, the SMM approach seeks to:
- Use materials in the most productive way with an emphasis on using less.
  - Reduce waste chemicals and environmental impacts throughout the product's life cycle.
  - Assure we have sufficient resources to meet current and future needs.



# Sustainable Materials Management

## Product Design

The **US EPA** has emphasized that by looking at a product's life cycle, we can find new opportunities to reduce environmental impacts, conserve resources, and reduce costs.

For example, re-designing a product to:

- Manufacture using different, fewer, less toxic and more durable materials.
- Have a useful end-of-life and recyclability.
- Develop an ongoing relationship between manufacturer and customers to ensure best use of the product, its maintenance, and return at end-of-life.



## *NCDEQ Resources*

- NC Tax Certification Program**



- Division of Environmental Assistance & Customer Service (DEACS)**

- Environmental Stewardship Initiative (ESI)**



## NC Tax Certification Program

Page 74

North Carolina offers a tax exemption on equipment and facilities used **exclusively** for recycling and resource recovery.

Tax Certification Program Rules 15A NCAC 13B Section.1500

<https://www.deq.nc.gov/about/divisions/waste-management/solid-waste-section/applications-solid-waste-permits-and-approvals/tax-certification-program>

### 15A NCAC 13B .1501 RESOURCE RECOVERING FACILITIES

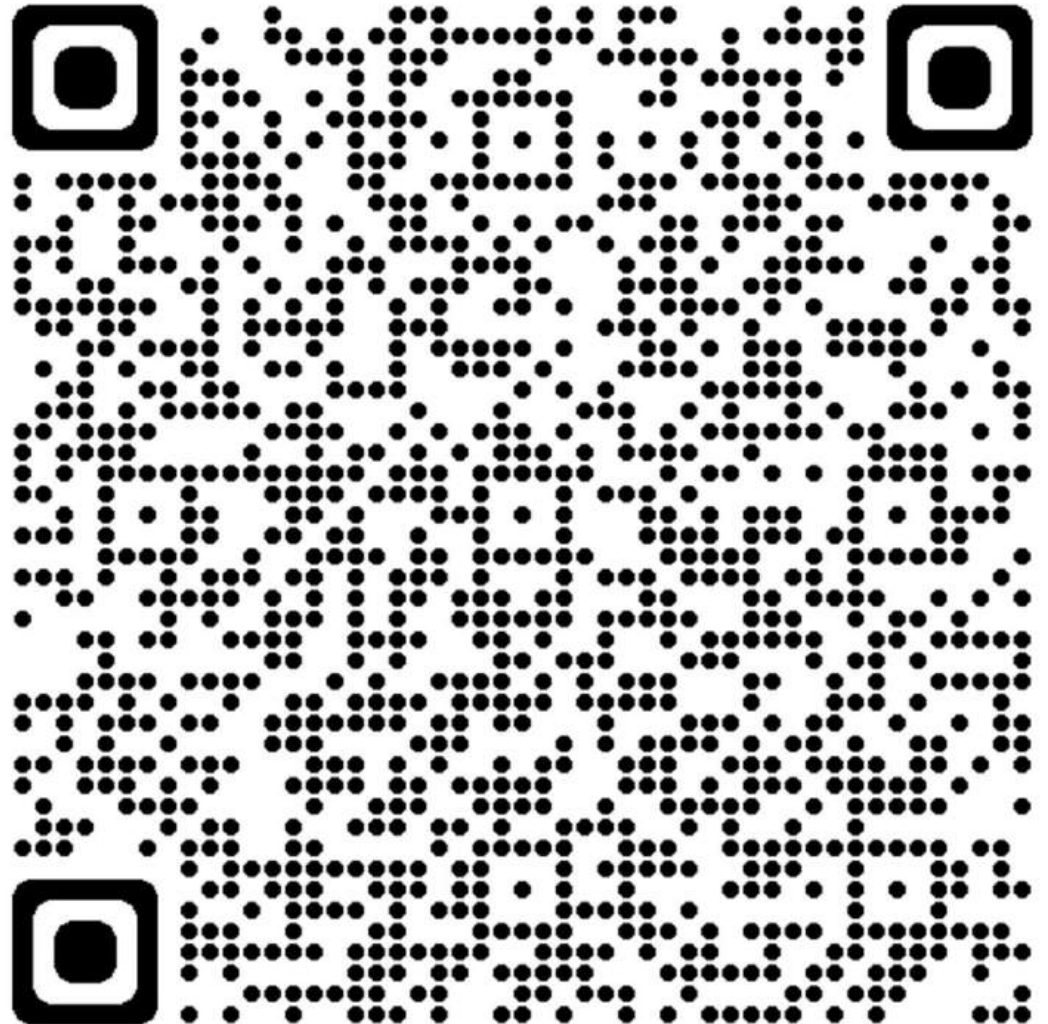
- (a) A resource recovering facility is a building, or buildings, or parts thereof, and includes any equipment exclusively and integrally used therein for obtaining material or energy resources from solid waste. The facility also includes land occupied by the buildings and equipment.
- (b) Facilities used to collect, sort, or otherwise prepare solid waste for reuse or recycling are resource recovering facilities.
- (c) Incidental or supportive facilities and equipment as defined in .1506(a) of this Section do not qualify for special tax treatment as resource recovering facilities.



## *Tax Certification Program*

### Solid Waste Section

- <https://www.deq.nc.gov/about/divisions/waste-management/solid-waste-section/applications-solid-waste-permits-and-approvals/tax-certification-program>



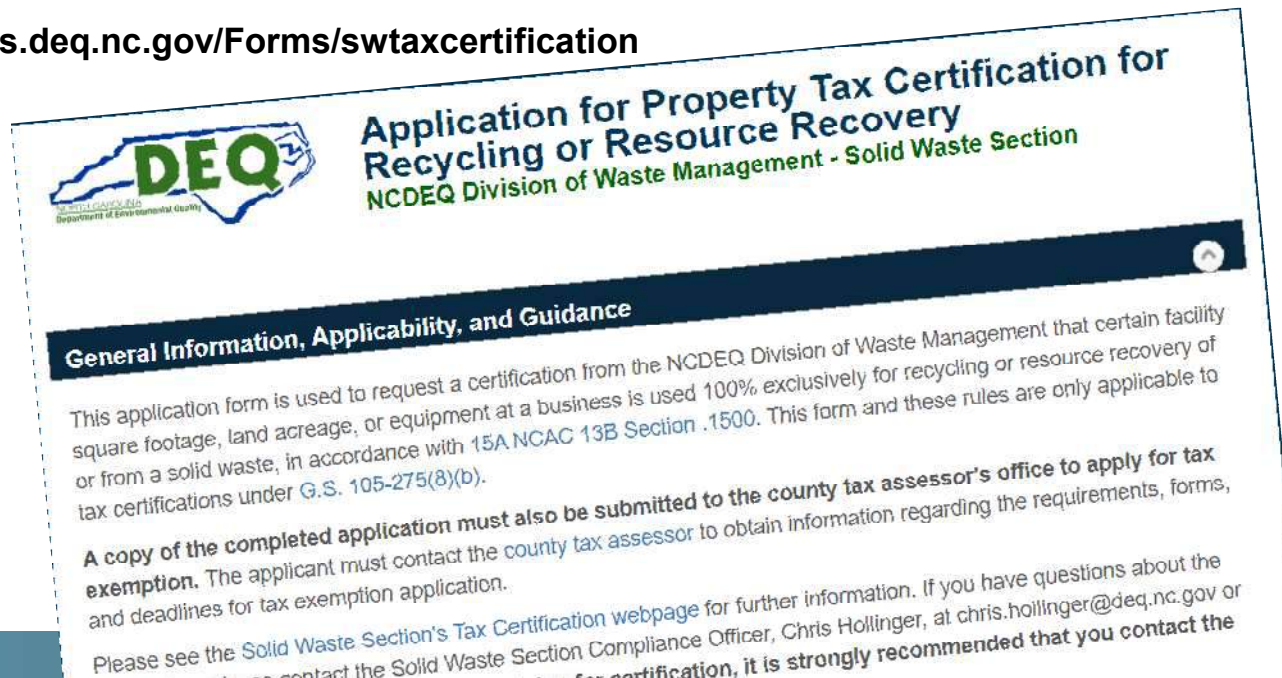


## NC Tax Certification Assistance

For questions about Tax Certification applications & eligibility:

**Chris Hollinger, Compliance Officer  
Solid Waste Section**  
Phone: 919-707-8284  
[Chris.Hollinger@deq.nc.gov](mailto:Chris.Hollinger@deq.nc.gov)

<https://edocs.deq.nc.gov/Forms/swtaxcertification>



**DEQ**  
NORTH CAROLINA  
Department of Environmental Quality

### Application for Property Tax Certification for Recycling or Resource Recovery

NCDEQ Division of Waste Management - Solid Waste Section

#### General Information, Applicability, and Guidance

This application form is used to request a certification from the NCDEQ Division of Waste Management that certain facility square footage, land acreage, or equipment at a business is used 100% exclusively for recycling or resource recovery of or from a solid waste, in accordance with 15A NCAC 13B Section .1500. This form and these rules are only applicable to tax certifications under G.S. 105-275(8)(b).

**A copy of the completed application must also be submitted to the county tax assessor's office to apply for tax exemption.** The applicant must contact the county tax assessor to obtain information regarding the requirements, forms, and deadlines for tax exemption application.

Please see the Solid Waste Section's Tax Certification webpage for further information. If you have questions about the application, contact the Solid Waste Section Compliance Officer, Chris Hollinger, at [chris.hollinger@deq.nc.gov](mailto:chris.hollinger@deq.nc.gov) or [919-707-8284](tel:9197078284). For certification, it is strongly recommended that you contact the



*Division of Environmental Assistance &  
Customer Service (DEACS)*



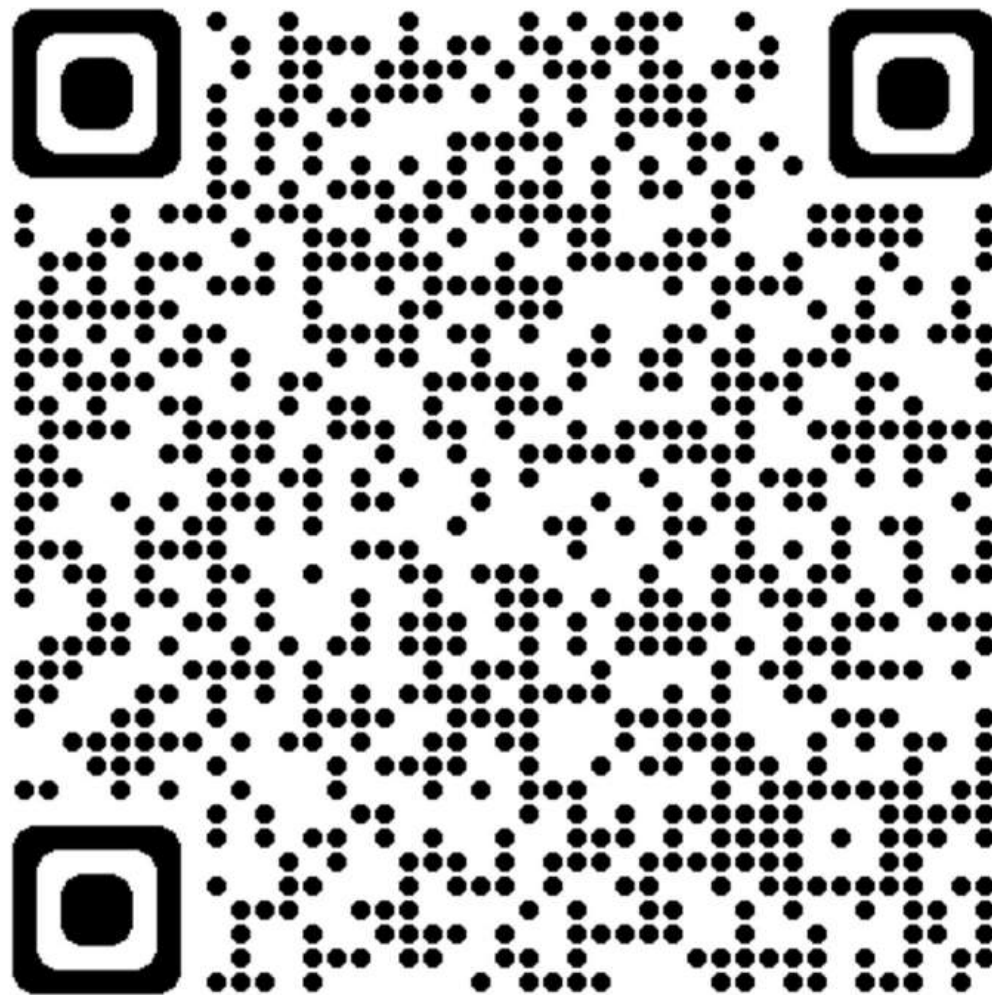
- **Non-regulatory** customer service to broaden the understanding of compliance and permitting programs.
- Can assist with communication between your facility & other DEQ agencies/programs.





## *DEACS Link*

<https://www.deq.nc.gov/about/divisions/environmental-assistance-and-customer-service/about-deacs>



# Division of Environmental Assistance & Customer Service (DEACS)

## Non-Regulatory - Pollution Prevention Assistance



Encourage Efficiency, Support Recycling, Promote Economic Growth and Navigate Permitting



## *Division of Environmental Assistance & Customer Service (DEACS)*

**DEACS** helps create economic growth by promoting recycling, material management programs, and the expansion of recycling infrastructures.



### Programs Offered

Support for businesses, local governments and more



### General Recycling Information

Recycling outreach materials, toolkits and campaigns



### Directories and Maps

Recycling market information and tools



### Organics Recycling and Compost

Learn about organics recycling, market resources and incentives



### Data, Reports and Publications

Take a closer look at the state's efforts regarding solid waste and materials management



### Links

Other resources, agencies and organizations

<https://deq.nc.gov/conservation/recycling>



## *Environmental Stewardship Initiative (ESI)*

### **PEER-TO-PEER PROMOTION OF ENVIRONMENTAL EXCELLENCE**

- DEQ **recognition** and leadership program
- **Free** and **voluntary**
- Promotes **outstanding environmental performance** and **networking**
- Support going beyond compliance by **conserving** natural resources and resulting in **economic benefits**
- Grown from 28 members in 2002 to 106 members at 210 sites



[www.ncesi.org](http://www.ncesi.org)



## *NC Environmental Stewardship Initiative*

**ESI** invites organizations to partner with the State in reducing environmental impacts from all media, which includes:

- Hazardous & Solid Waste Reduction
- Energy Usage Reduction
- Wastewater Reduction
- Water Conservation
- Air Quality Improvements

Waste minimization planning includes multiple environmental factors, not just hazardous waste management, as part of organizations' pollution prevention strategies.

### **ESI Elements Include:**

- Technical and Compliance Assistance
- Waste, Energy, Water Assessments
- Personalized On-site Environmental Management Systems (EMS) Assistance
- Waste Sort Assistance
- Networking Opportunities
- Dedicated Coach/DEQ Contact
- Recognition Awards/Marketing



# ESI Member Results



## 2022 ESI Members Results

Reductions	Value	Units
Air Emissions	142	Tons
Hazardous waste	191	Tons
Landfilled waste	3,577	Tons
Wastewater Pollutants	8,965	Tons
Greenhouse Gas Emissions*	73,802	Metric Tons CO <sub>2</sub> e
Material Consumption	185,661	Tons
Energy	1,264,662	MMBtu
Wastewater Volume	98,641,150	Gallons
Water Use	151,764,223	Gallons

Reuse	Value	Units
Biomass Recovery**	61,128	Tons
Total Recycled Volume	176,125	Tons

# \$5,396,288

Total Cost Savings

\*Indirect not reported in energy reductions

\*\*Category created for compost/mulch related goals



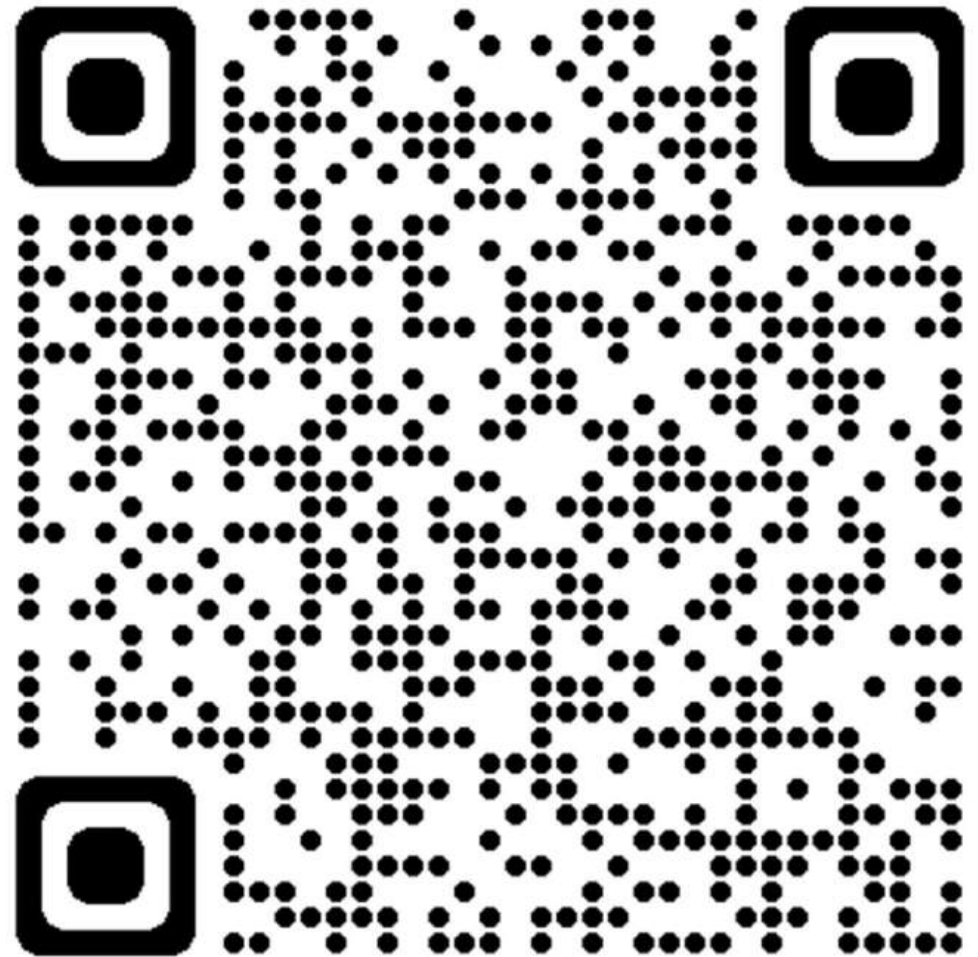
## *ESI 20<sup>th</sup> Anniversary Story map*



Access the ESI story map [here](https://storymaps.arcgis.com/stories/f9061f580273430fb07714dfd91ff296?header)  
( <https://storymaps.arcgis.com/stories/f9061f580273430fb07714dfd91ff296?header> )

*ESI 20<sup>th</sup> Anniversary Link*

<https://storymaps.arcgis.com/stories/f9061f580273430fb07714dfd91ff296?header>



# ESI Members



QUESTIONS?

QUESTIONS?

**Rose Pruitt**  
**Hydrogeologist**

[Rose.Pruitt@deq.nc.gov](mailto:Rose.Pruitt@deq.nc.gov)

919.270.3476



QUESTIONS?

QUESTIONS?



## *Picture References*

- Slide 4 - <https://www.epa.gov/p2>
- Slide 27 - <https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy>
- Slide 28 - <https://www.epa.gov/smm/sustainable-materials-management-basics>
- Slide 29 - <http://www.spdpsolutions.com/files/3514/3837/7595/sustainability.jpg>





# Universal Waste

*Appendix H - page 166*



# Hazardous Waste Section Division of Waste Management



**Ryan Mayette**

Environmental Specialist II

[Ryan.Mayette@deq.nc.gov](mailto:Ryan.Mayette@deq.nc.gov)

919-270-1967



# *What are Universal Waste?*

## *40 CFR 273*

- Batteries
- Pesticides
- Mercury-Containing Equipment
- Lamps
- Aerosol Cans





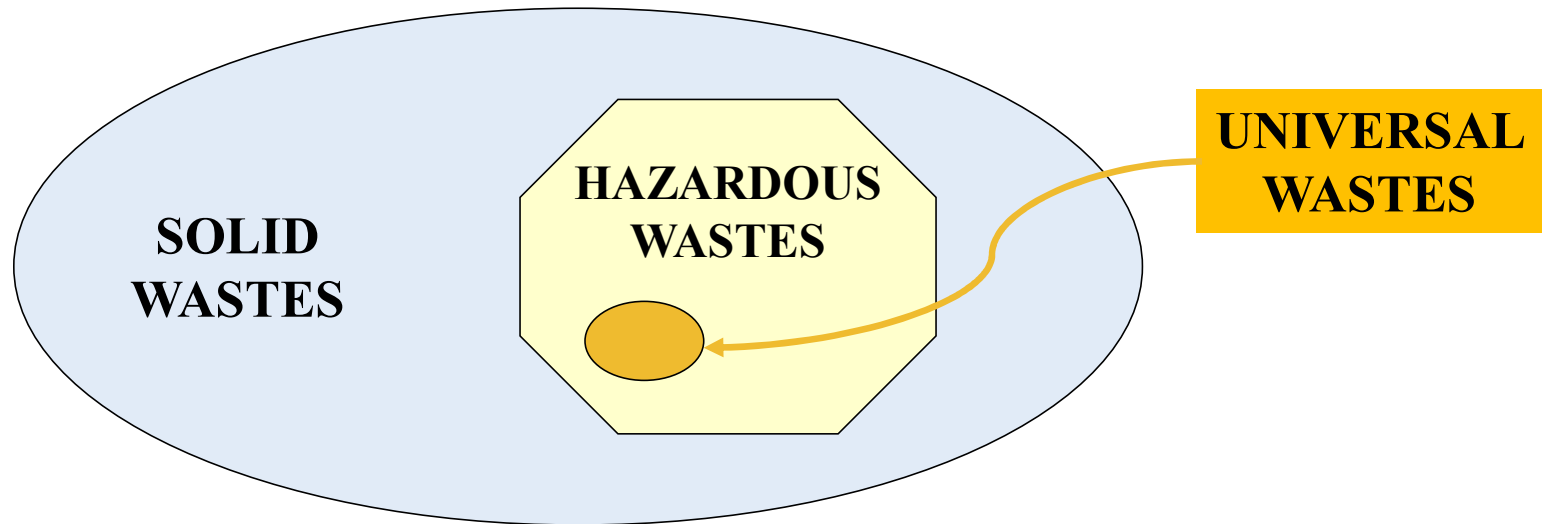
# General Hazards of Universal Waste

33 As Arsenic	56 Ba Barium	46 Cd Cadmium	24 Cr Chromium
82 Pb Lead	80 Hg Mercury	47 Ag Silver	34 Se Selenium



# *Where does Universal Waste Fit?*

## *40 CFR 273*



- Must be managed as **hazardous waste** before they can be designated as universal wastes.
- They are exempt from full hazardous waste regulations but need to be managed separately.

# *Regulated Participants in the Universal Waste System*



*Standards for Small Quantity Handlers of  
Universal Waste (page 166-167)*  
**40 CFR 273 Subpart B**

- Not required to notify EPA of universal waste handling activities.
- Prohibited from diluting or treating universal waste, except by responding to releases as provided in **40 CFR 273.17**; or by managing specific wastes as provided in **40 CFR 273.13**.
- Must label or mark the universal waste to identify the type of universal waste.
- Must inform all employees who handle or have responsibility for managing universal waste.

*Standards for Large Quantity Handlers of  
Universal Waste (page 167-168)*  
***40 CFR 273 Subpart B***

- Must notify the HWS of the wastes they are managing under the universal waste program. If they already have an EPA ID number, they are not required to re-notify.
- Shipping records (bill of lading, invoices, etc.) must be maintained for at least three years from the date the waste left the facility.
- Must label or mark the universal waste to identify the type of universal waste.
- Must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures.

# *How to manage my Universal Waste?*

## **40 CFR 273**

- No costly analytical testing/reporting required.
- Universal wastes do not have to be accumulated in a hazardous waste accumulation area.
- Universal waste is not counted toward total monthly hazardous waste generation rate.



# Comparison of Universal Waste Handlers

## 40 CFR 273.9

Requirements:	Small Quantity Handler of Universal Waste (SQHUW)	Large Quantity Handler of Universal Waste (LQHUW)
EPA ID Number	No	Yes
Universal Waste Labeling/Marking	Yes	Yes
Manifest Requirements	No	Yes (retain records for 3 years)
Inspections	No	No
Training	Yes	Yes
Accumulation Time Limit	1 year	1 year
Amount of UW Stored	Less than 5,000 kg – 11,023 lbs	5,000 kg – 11,023 lbs or more

# *Comparison of Hazardous Waste Universal Waste Requirements*





# *Universal Waste – Aerosol Cans*

## *40 CFR 273.6*

### Definition of **Aerosol Can**:

- A non-refillable receptacle containing a gas compressed, liquefied, or dissolved under pressure, the sole purpose of which is to expel a liquid, paste, or powder and fitted with a self-closing release device allowing the contents to be ejected by the gas.



# *Universal Waste – Aerosol Cans*

## *40 CFR 273.6*

### **What are waste aerosols?**

- Many waste aerosols contain unused chemical product and excess propellant even if they seem 'empty'.
- An example may include aerosols that will no longer spray evenly.
- Waste aerosols may be hazardous because the...
  - Liquid product is dangerous to your health.
  - Gas propellant or product is hazardous.



## *How do I Store and Dispose of Hazardous Waste Aerosols?*

Universal Waste Aerosol Cans must be:

- Accumulated in a container that is structurally sound.
- Compatible with the contents.
- Lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.
- Protected from sources of heat.



## *How do I Store and Dispose of Hazardous Waste Aerosols?*

As long as each individual aerosol can is not breached and remains intact, the following is allowed:

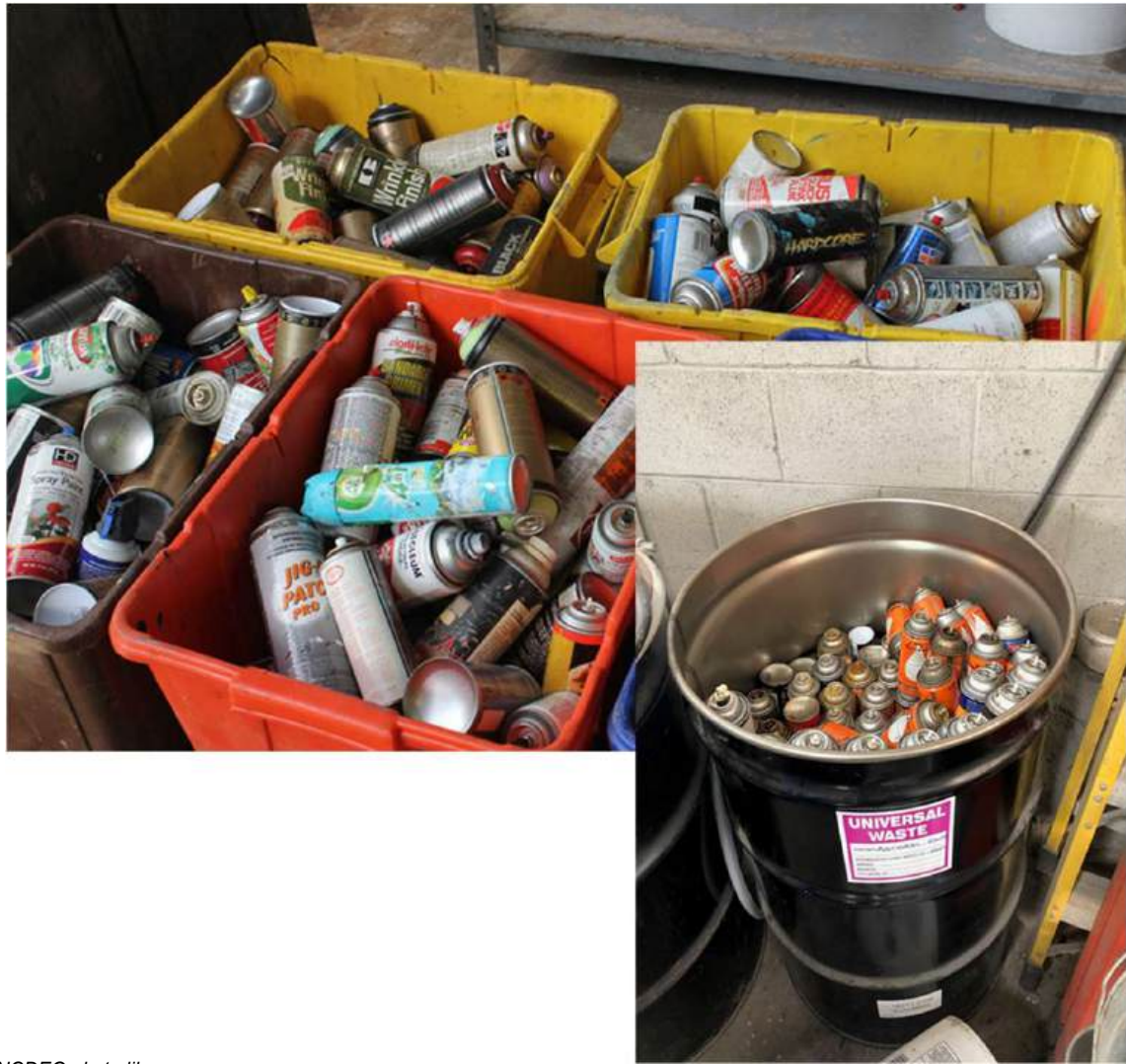
- Sorted into types based on contents.
- Commingled into one container.
- Must remove actuators to reduce risk of accidental release.



## *How do I Store and Dispose of Hazardous Waste Aerosols?*

- Label each aerosol can or container in which the cans are contained with one of the following phrases:
  - **"Universal Waste – Aerosol Can(s)"**
  - **"Waste Aerosol Can(s)"**
  - **"Used Aerosol Can(s)"**





\*\*\*This cardboard box is not structurally sound.

# *Puncturing and Draining Aerosol Cans*

If universal waste aerosol cans are punctured and drained:

- The empty can must be recycled.
- Establish a written SOP on how to operate the device.
- Employees must be trained.
- A written procedure in the event of a spill or leak.



## *Aerosol Can Puncturing Stations*







## *FAQs about Aerosol Can Management*

**Question:** If I am puncturing waste aerosol cans, am I allowed to throw the empty metal can in regular trash?

**Answer:** No, waste aerosol cans that are punctured must be recycled as scrap metal.

## *FAQs about Aerosol Can Management*

**Question:** Do aerosol cans have to be completely empty to manage them as universal waste?

**Answer:** No, aerosol cans do not have to be empty to be managed as a universal waste. They must be empty (with no significant liquids) once they are punctured/drained and managed as scrap metal.

## *FAQs about Aerosol Can Management*

**Question:** I have some aerosol cans that I'd like to continue to manage as hazardous waste, but others I want to manage as universal waste. Is this allowed?

**Answer:** Yes, it is suggested that a written SOP be developed and training for staff that manage the aerosol cans, so they understand which are managed as hazardous waste and which are managed as universal waste.

# *Universal Waste – Mercury Containing Equipment*

## *40 CFR 273.9*

- A device or part of a device (including thermostats but excluding lamps and batteries) containing elemental Hg integral to its function.
- Some commonly recognized items include, but are not limited to, thermometers, thermostats, barometers, manometers, temperature and pressure gauges, and mercury switches.



# *How do I store and dispose of Mercury Containing Equipment?*

Label each device or container for which the equipment is contained with the following phrases:

- **“Universal Waste-Mercury Containing Equipment”**
- **“Waste Mercury-Containing Equipment,”**
- **“Used Mercury-Containing Equipment.”**

**OR**

- **“Universal Waste-Mercury Thermostat(s)”**
- **“Waste Mercury Thermostat(s)”**
- **“Used Mercury Thermostat(s)”**

# *Mercury Switch Removal Program*



# *Universal Waste - Pesticides*

## *40 CFR 273.9*

Definition: A Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant.

- Resulting from a pesticide recall.
- Unused pesticides collected as part of a waste pesticide collection program.
  - **“Universal Waste-Pesticide(s)”**
  - **“Waste-Pesticide(s)”**





# Universal Waste - Batteries

## 40 CFR 273.9

Universal Waste Batteries consist of:

- Nickel-Cadmium batteries
- Metal hydride batteries
- Lead-acid batteries
- Silver oxide
- Mercury oxide
- Lithium
- Zinc carbon
- Alkaline batteries (ex. AA, AAA)



## *How do I store and dispose of batteries?*



Labeled containers must be identified as:

- **“Universal Waste Batteries”,**
- **“Waste Batteries”**
- **“Used Batteries”**

# *How do I store and dispose of batteries?*



*FAQs about batteries*  
*40 CFR 273.9*

**Question:** Can Li-ion batteries go into regular trash?

**Answer:** No, Li-ion batteries if crushed, punctured or processed in unsuitable conditions, or exposed to water can ignite and cause a fire hazard.

# *Universal Waste - Lamps*

## *40 CFR 273.9*

The bulb or tube portion of an electric lighting device.

Universal waste lamps consist of:

- Fluorescent lamps
- High intensity lamps
- Neon lamps;
- Mercury vapor lamps;
- High pressure sodium lamps; and
- Metal halide lamps.
- LED's



### Note:

- This category does not include associated light fixtures such as ballasts.
- For info about PCBs check out: <https://www.epa.gov/pcbs>

## *How do I store and Dispose of Lamps?*

Universal waste must be managed to prevent releases by keeping containers closed and using structurally sound and compatible containers.



## *How do I store and Dispose of Lamps?*

If a lamp breaks or shows evidence of leakage, spillage, or damage you must:

1. Immediately clean up the broken lamp and place the pieces or damaged lamp in an approved container.
2. The containers must be closed, structurally sound, and compatible with the contents of the lamps.



# *How do I store and Dispose of Lamps?*

Releases must be immediately contained and managed in compliance with 40 CFR 262 (Standards Applicable to Generators of Hazardous Waste)



NCDEQ photo library

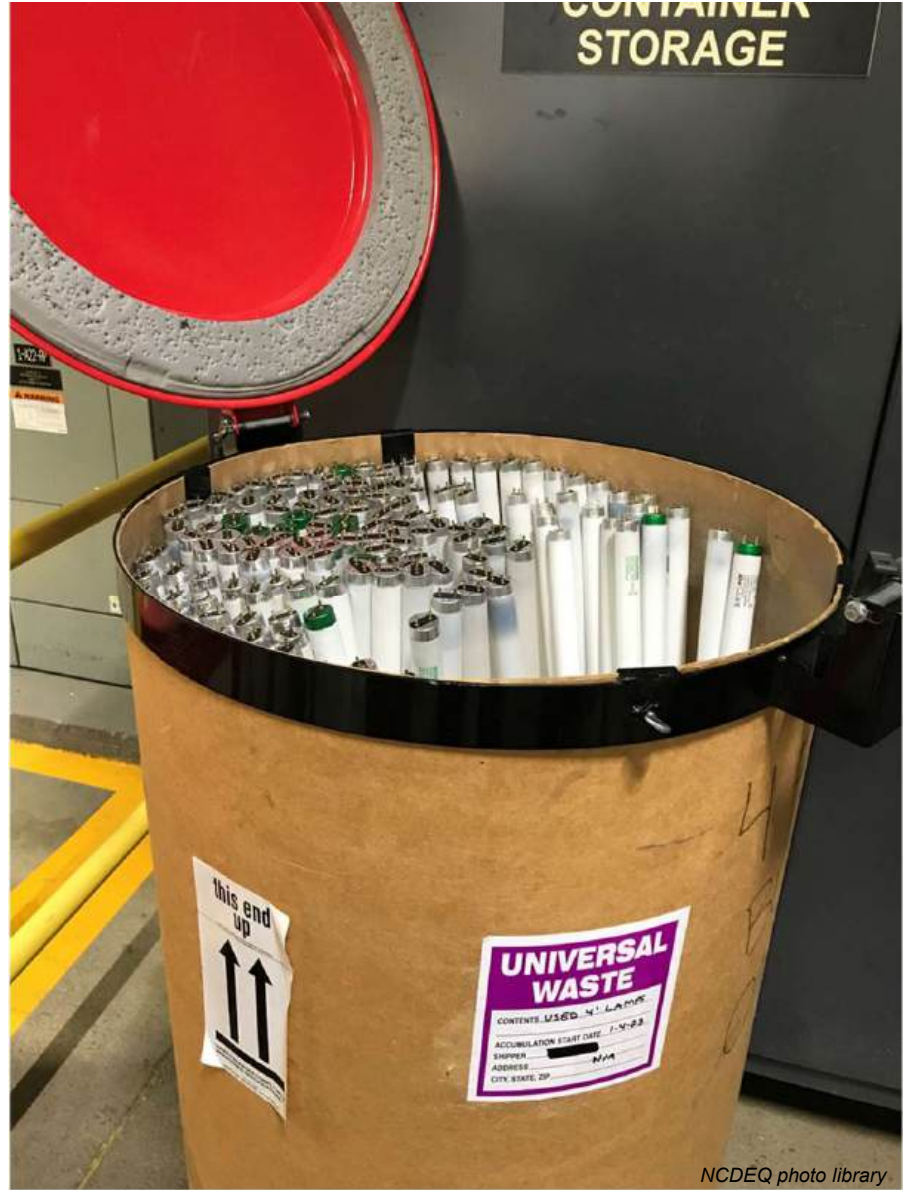


Universal waste must be managed to prevent releases by keeping containers closed and using structurally sound and compatible containers





NCDEQ photo library



NCDEQ photo library



## *How do I store and Dispose of Lamps?*

What about Green Tips Florescent Lamps?

- Green tips still contain **mercury**.
- If you claim non-hazardous, be ready to prove it.
- **Universal Waste—Lamp(s),”**
- **or “Waste Lamp(s),”**
- **or “Used Lamp(s)**



NCDEQ photo library

# *Fluorescent Lamp Crushers*

Is it still a Universal Waste?



**NO!!**

## *Shipment Information for Handlers (page 168)*

Handlers must send universal waste only to:

- Other handlers,
- Destination facilities, or
- Foreign destination (**§273.18 or §273.38**)
- This applies to large and small quantity handlers of universal waste.



## *Shipment Information for Handlers (page 168)*

Universal wastes must be transported in accordance with the US Department of Transportation requirements.

- Includes packaging, labeling, marking, placarding, and preparing shipping papers

For guidance on DOT requirements:

- <http://www.phmsa.dot.gov/portal/site/PHMSA>
- DOT Hotline: 1.800.467.4922

## *Destination Facilities (page 168)*

A facility that treats, disposes of, or recycles Universal Waste:

- Must comply with hazardous waste storage, treatment or disposal facility permitting.
- Must comply with recycling facility requirements.
- Must send waste off-site only to another destination facility or a foreign destination.
- Must keep shipping records for at least 3 years.





PLEASE   RECYCLE



## *What is E-waste?*

- E-Waste is a term that has been given to electronic wastes by the solid waste community as well as the public.
- This generic name encompasses the many types of electronic devices that end up in the municipal solid waste stream.
- E-Waste contains components which would make the item a hazardous waste. (Cadmium, Lead, and Mercury)
- **NOT** a Universal Waste!



## *Examples of E-Waste*



## *E-Waste Management*

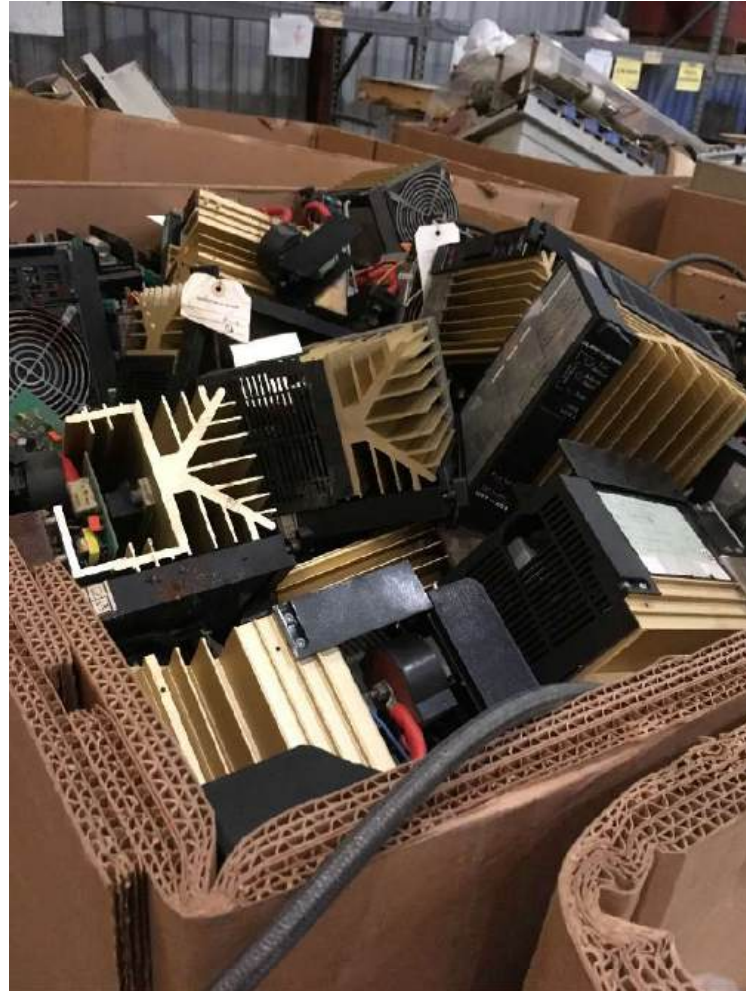
### **What do I do with E-Waste?**

- As long as the scrap metal will be recycled, it is exempt from RCRA hazardous waste requirements per:
  - **40 CFR 261.6(a)(3)(ii)**

**Speculative Accumulation** - refers to false claims that wastes will be recycled and/or the indefinite storage of hazardous waste before recycling.

- Speculative accumulation is not allowed!
- If disposed of, a hazardous waste determination must be made!:
  - **40 CFR 260.11**

## *How to store E-Waste?*



# *Common Deficiencies Found During an Inspection*

Common deficiencies found onsite related with Universal Waste during an inspection:

- Open container.
- Labeling/marketing.
- Improper container.
- Universal waste training.
- Waste outside of container.
- Accumulation start date.



NCDEQ photo library

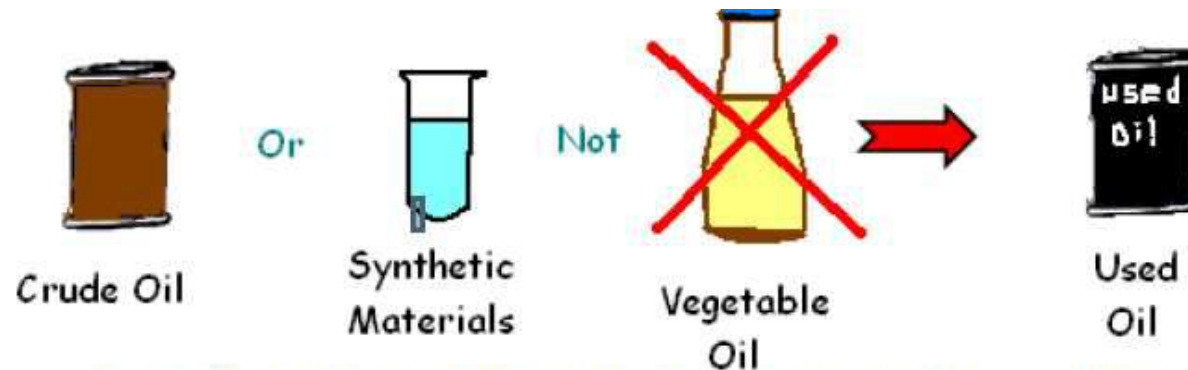
# USED OIL

SLUO Printed by Labelmaster, An American Labelmark Co., Chicago, IL 60646 (800) 621-5806

*Appendix G - page 159*



## What are Used Oils?



*Used oil is derived from Crude Oil or Synthetic Materials that have been used.*

*Vegetable oil is not regulated as used oil.*

- ❖ **Definition:** Any oil that has been refined from crude oil, or any synthetic oil, that has been used and because of such use is contaminated by physical or chemical impurities. (§ 279.1)



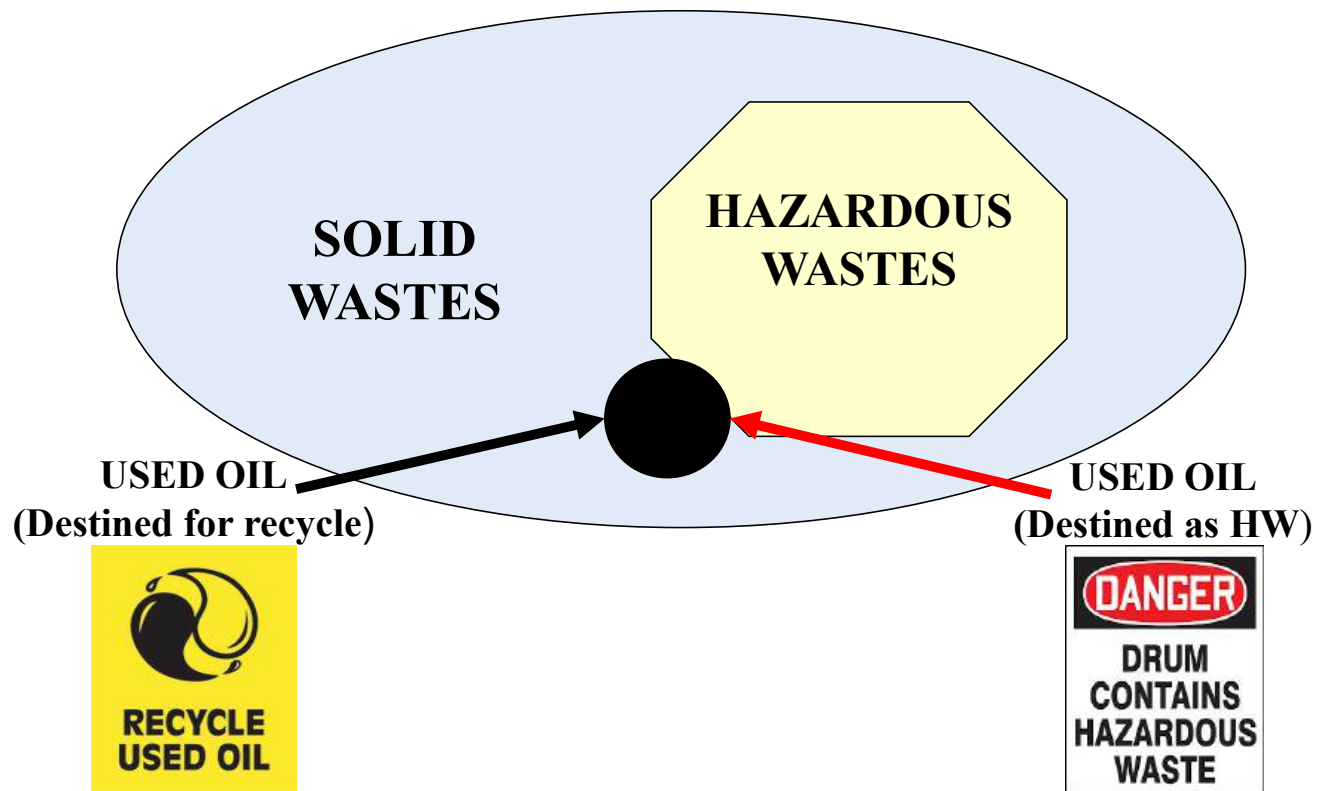
## *Examples of Used Oil*

Includes the following:

- ❖ Used motor oil
- ❖ Used compressor oils.
- ❖ Used hydraulic oil
- ❖ Used transmission & brake fluid
- ❖ Spent synthetic cutting & machine oils
- ❖ Spent quench oils
- ❖ Non-PCB transformer oils (<50ppm)



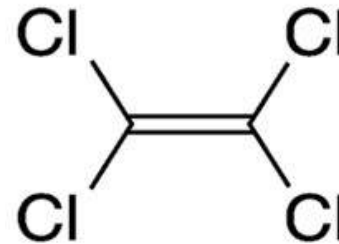
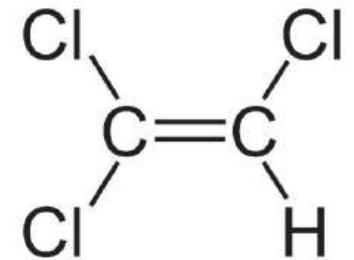
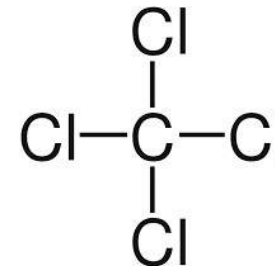
# *Where does Used Oil fit in the Solid Waste World?*



## General Hazards of Used Oil

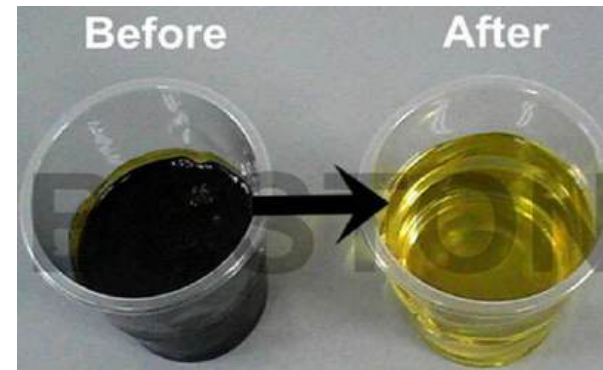
Releases to the environment can cause ecological damage:

- ☠ Cadmium
- ☠ Chromium
- ☠ Lead
- ☠ Mercury
- ☠ Silver
- ☠ Chlorinated Solvents



## *Goals of Used Oil Regulations*

- ❖ **Recycling Presumption:** All used oil is considered recyclable until a decision is made to dispose of it.
- ❖ **Less Stringent:** Used oil (§279) recycled is subject to less stringent requirements (§261).



# *Standards for Used Oil Generators*

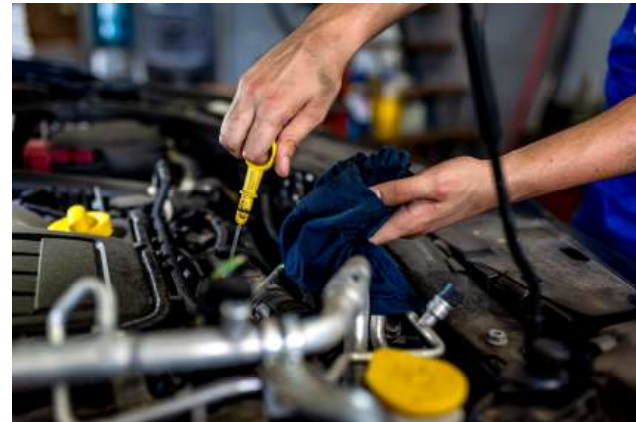
## *40 CFR 279.1 Subpart C*

Definition: Any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

- ❖ Different from a hazardous waste generator.
- ❖ No distinction based on quantity.

Exemptions: (§ 279.20)

- ❖ Household do-it-yourselfers.
- ❖ Farmers generating <25 gal/month from farm machinery/vehicles.



# *Used Oil Storage & Management Requirements*

## *40 CFR 279.22*

- ❖ Store only in containers and/or tanks.
- ❖ Good condition, no visible leaks.
- ❖ Label “**Used Oil**”.
- ❖ Respond to releases as soon as they occur.

Comply with Other Applicable Regulations:

- ❖ SPCC rule/plan (*40 CFR 112*)
- ❖ Oil Pollution Act 1990 (*OPA-90*)
- ❖ Standards for USTs (*40 CFR 280*)





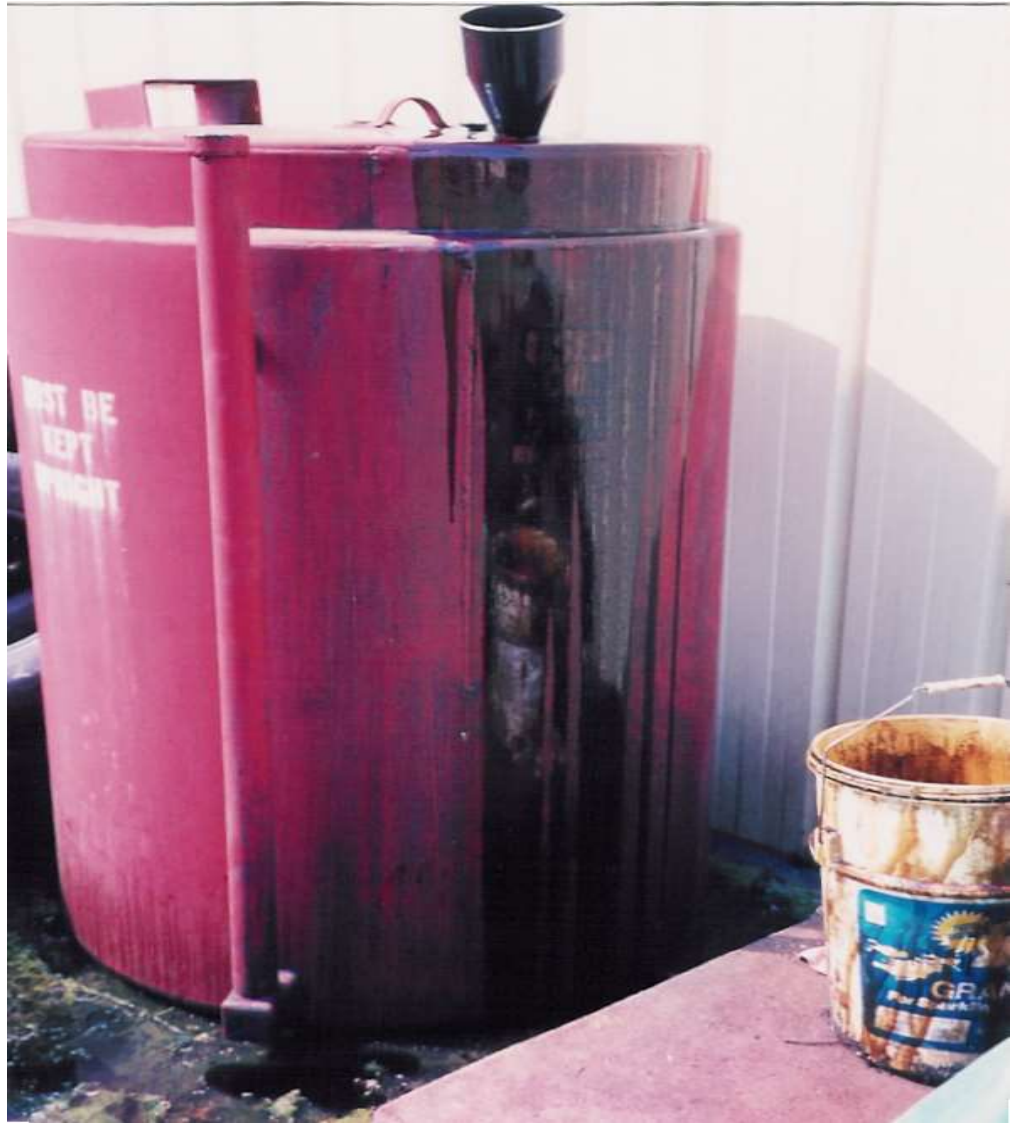
- ❖ Used Oil must be stored in containers or tanks that are in good condition and labeled **“Used Oil”**.











## *Off-site Shipments (page 162)*

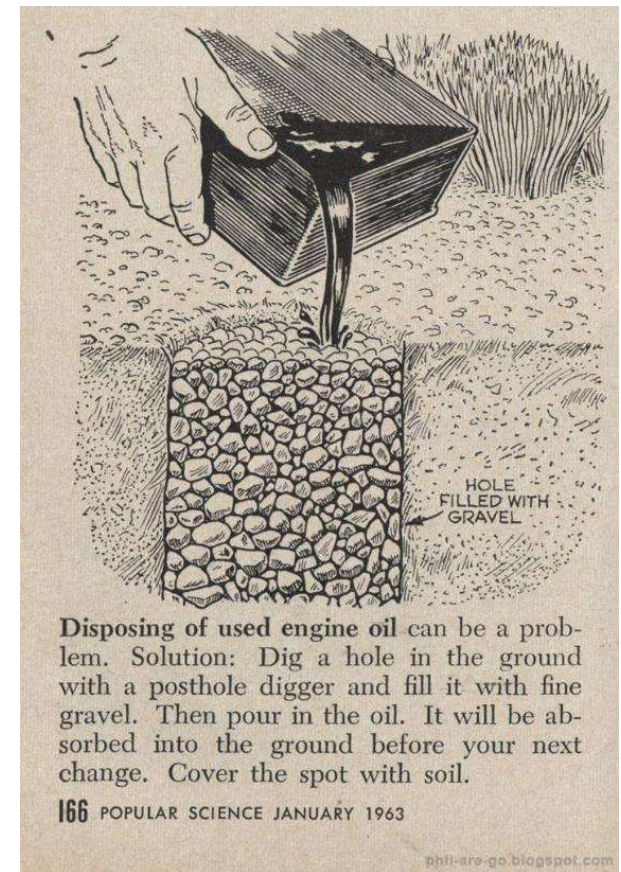
### *40 CFR 279.24*

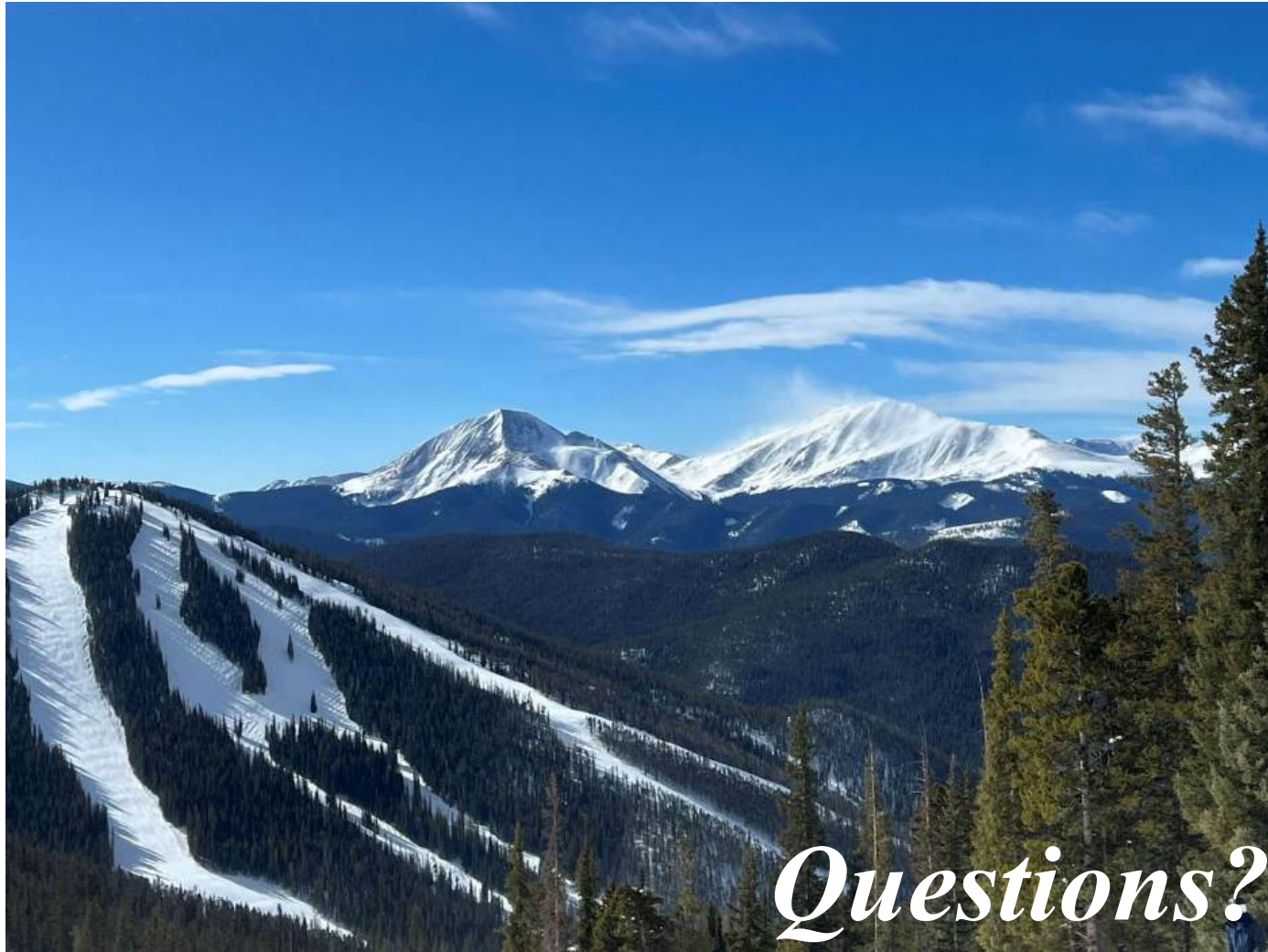
Generators must ensure that their used oil is transported only by transporters who have obtained EPA identification numbers, However...

- ❖ Self-transportation of small amounts to approved collection centers.
- ❖ Transport <55 gallons used oil at one time.
- ❖ Transport in vehicle owned by generator or employee of generator.
- ❖ Tolling arrangements. *40 CFR 279.24 (c)*

## Used Oil Restrictions (page 159)

- ❖ Do NOT use for road oiling or dust control. (ex. Times Beach, MO disaster).
- ❖ Do NOT discharge into sewers, storm drains, surface waters, septic tanks, ground waters or onto the ground.
- ❖ Do NOT use for vegetation control.
- ❖ Do NOT dispose of in any landfill.
- ❖ Burning in oil-fired space heaters – source, capacity & venting requirements **(40 CFR 279.23)**.







# RCRA Enforcement

Aram Kim

919-270-2921 [aram.kim@deq.nc.gov](mailto:aram.kim@deq.nc.gov)



# History of Enforcement Actions

## The Regulatory Reform Act

- Became law on July 25, 2011 & Implemented as of February 1, 2012
- Uniform policy for NOVs for all regulatory programs within NCDEQ
- Potential or actual level of harm to public health, the environment and the natural resources of NC



# Most Common Violations

Waste Determination  
Weekly Inspections  
Container Management  
Labeling



Training  
Tank Management  
Universal Waste  
& Used Oil Management





# Types of Inspections

**CAV**

Compliance  
Assistance  
Visit



**CEI**

Compliance  
Evaluation  
Inspection



**CMP**

Complaint  
Investigation



**FCI**

Focused  
Compliance  
Inspection





# Violation Severity Levels

## Tier 1 Violations

- Minor duration and/or gravity
- Not committed willfully
- Little or no harm
- **Ticket Notice of Violation (TNOV)**

## Tier 2:

- More serious
- Documented harm or the potential for moderate to severe harm
- Moderate duration & gravity
- Continued noncompliance w/ Tier 1 violations
- Prior history of noncompliance
- **Typically, a Standard Notice of Violation (NOV) will be issued.**

## Tier 3:

- Most serious violations
- Significant harm
- Committed willfully and intentionally
- Significant prior history
- Continued noncompliance w/ Tier 2 violations
- **Civil Penalties, Consent Orders, Injunctions, or other compliance tools**



## Levels of NOVs

TNOV

Ticket Notice of Violation

NOV

(Standard) Notice of Violation

IANOV

Immediate Action Notice of Violation

CO

Compliance Order



# What's Next?

So you've had an inspection

# Compliance Orders

## Types:

- Short Form
- Standard Form
- Administrative Order on Consent



# Compliance Orders

	Short Form	Standard Form
Max. penalty	\$6,500.00	\$32,500.00
Issued for	violations that creates an imminent potential threat to human health or the environment.	significant violations that pose an <u>immediate</u> threat to human health and the environment.
Ex	<ul style="list-style-type: none"> <li>Repeat violations discovered during a re-inspection</li> <li>Non-compliance with previous NOV's</li> </ul>	<ul style="list-style-type: none"> <li>Failing to conduct and document proper waste determinations</li> <li>Operating as a TSD Facility without a permit</li> </ul>



# Compliance Orders

## Administrative Orders on Consent

- Typically, based either on a resolution to a Compliance Order or as a voluntary action of the facility identifying a problem.
- A stipulated penalty is typically included to recover any economic benefit gained from non-compliance & the cost of investigation.



# Audit Policy

- Will not seek administrative / civil penalties beyond the economic benefit
- Must provide sufficient documentation to be eligible
- Must meet all nine conditions





## Audit Policy – 9 Conditions Required

1. Discovered through environmental audit
2. Voluntarily
3. Within **21 calendar days** after discovery
4. Independently
5. Correction and remediation



## Audit Policy – 9 Conditions Required

6. Prevent a recurrence

7. May not be a same or related violation (past 3 years)

8. May not be a violations that caused serious harm to the environment/public

9. Cooperate



## Example – Audit Policy

- SQG. Un-notified for 3 years.
- Not penalized beyond the economic benefit gained for non-compliance
- Economic Benefit calculations

Small Quantity Generator fees \$525

Document daily inspections \$585

Provide RCRA training to six employees \$2,340

Post contingency planning information \$159

Make emergency arrangements w/ local authorities \$206

Total: \$3,815



# Hazardous Waste Section 2023 Data

<b>Evaluation</b>	
Commercial TSD Facilities	9 CEIs, 401 FCIs
Attachment List CEI	84
LQG CEI	171
SQG CEI	87
Citizen Complaint	87
Emergency Response	11
Compliance Assistance Visit	50
Compliance Schedule Evaluation	108
<b>Enforcement</b>	
Notices of Violation (NOV)	81
IANOV	9
Compliance Order	8



## EPA Region 4 HW Enforcement Response Policy

- Guidance for taking civil enforcement action.
- Consistent, appropriate, and timely enforcement in all states in Region 4.
- Violators are grouped into two different categories:
  - Significant Non-Complier (SNC)
  - Secondary Violator (SV)



## RCRA Civil Penalty Policy

- Describes calculation matrix.
- Penalty calculation is determined by reviewing:
  - Potential for Harm
  - "Extent of Deviation" from a statutory or regulatory requirement



*Penalty  
Matrix*

Short form Order PENALTY ASSESSMENT MATRIX		Degree of Deviation from Requirements		
		MAJOR	MODERATE	MINOR
Nature and Degree of Harm	MAJOR	\$6500 - 1300	\$5200-1000	\$3800-700
	MODERATE	\$2800-500	\$2000-300	\$1300-200
	MINOR	\$800-130	\$400-130	\$130



## Example – Penalty Calculation

LQG, 3 violations:

- Failure to mark each piece of equipment for a hazardous waste tank
- Failure to accumulate hazardous waste in a tank for less-than 90-days while operating as an LQG
- State administrative code - Failure to comply with the requirements of any person who treats, stores, or disposes of hazardous waste by failing to have a permit to store hazardous waste on-site in excess of 90-days





## Example – Penalty Calculation

Container Management violations **\$3,900**

Unpermitted Storage Facility violations **\$6,500**

Storage facility fee **\$1,680**

Investigative costs **\$762.34**



## Civil penalties received by the State are governed by the NC State Constitution, Article IX, Sec. 7.

### **Sec. 7. County school fund; State fund for certain moneys.**

(a) Except as provided in subsection (b) of this section, all moneys, stocks, bonds, and other property belonging to a county school fund, and the clear proceeds of all penalties and forfeitures and of all fines collected in the several counties for any breach of the penal laws of the State, shall belong to and remain in the several counties, and shall be faithfully appropriated and used exclusively for maintaining free public schools.

(b) The General Assembly may place in a State fund the clear proceeds of all civil penalties, forfeitures, and fines which are collected by State agencies and which belong to the public schools pursuant to subsection (a) of this section. Moneys in such State fund shall be faithfully appropriated by the General Assembly, on a per pupil basis, to the counties, to be used exclusively for maintaining free public schools. (2003-423, s.1.)



# Penalty Consequences

<https://deq.nc.gov/about/divisions/waste-management/hw/civil-penalties>

Administrative Order(s) Issued	Violations	Penalty Amount	Administrative Order(s) Issued
<p>Transcontinental AC US LLC 700 Crestdale Road, Matthews, NC; Mecklenburg County Docket #2022-095</p>	<p>Failed to:</p> <ul style="list-style-type: none"> <li>• Have waste in container;</li> <li>• have containers properly labeled with an indication of the hazards in SAA;</li> <li>• remove the excess from the satellite accumulation area;</li> <li>• have containers properly labeled with an indication of the hazards in CAA;</li> <li>• updated their contingency;</li> <li>• request an extension;</li> <li>• have a RCRA storage Permit; and</li> <li>• not accumulated hazardous waste longer than the 90 days allowed.</li> </ul>	<p>penalty of \$13,758.33</p> <p>\$ 1,757.08 for investigative and inspection costs</p> <p>\$1,680.00 in fees for acting as a hazardous waste storage facility</p>	<p>Signed March 13, 2023</p>
<p>Advanced Environmental Options, Inc. 1383 NC Hwy 120 Mooresboro, NC; Rutherford County Docket #2022-073</p>	<p>Failed to:</p> <ul style="list-style-type: none"> <li>• have to perform a proper waste determination.</li> </ul>	<p>penalty of \$10,152.90</p> <p>\$1,251.29 for investigative and inspection costs</p>	<p>Signed March 17, 2023</p>
<p>DyStar Carolina Chemical Corp. 8309 Wilkinson Boulevard, Charlotte, Mecklenburg County Docket #2023-010</p>	<p>Failed to:</p> <ul style="list-style-type: none"> <li>• make a proper waste determination;</li> <li>• maintain hazardous waste containers in good condition;</li> <li>• mark or label an indication of the hazards;</li> <li>• properly maintain ground water monitoring wells;</li> <li>• updated their contingency;</li> <li>• request a 30-day extension;</li> <li>• have a RCRA storage Permit; and</li> <li>• not accumulated hazardous waste longer than the 90 days allowed.</li> </ul>	<p>penalty of \$19,700.00</p> <p>\$ 1,769.42 for investigative and inspection costs</p> <p>\$1,680.00 in fees for acting as a hazardous waste storage facility</p>	<p>Signed April 3, 2023</p>





Thank you for your attention!





North Carolina Hazardous Waste Workshop  
**Paperwork Review**  
Fall 2024



**Andrew Martin**

**Environmental Specialist II**

**Hazardous Waste Section  
Division of Waste Management**

**[Andrew.Martin@deq.nc.gov](mailto:Andrew.Martin@deq.nc.gov)**

**919-270-3507**



# *Understanding Compliance and Documentation*

- Right of Entry/Inspection
- Required Paperwork



# Goals

1. Get the inspector in the facility as fast as possible.
2. Get the inspector out of the facility as fast as possible.
3. Have your records organized. Why? See 1 & 2 above!





# Upon Entry

- The inspector(s) will not sign any document or log requiring them to agree to any confidentiality or camera limitations. We also won't agree to safety terms that interfere with the inspection.
- The inspector will respect the safety guidelines being taken by facilities but will not share personal health information.
- ***Plan for this before the inspector arrives.***



Humboldt State University Controlled IT Spaces Visitor Log Rev. 2/1/12					
Controlled IT Space Room Number _____					
<b>Visitor AGREEMENT TO ACCEPT RESPONSIBILITY</b>					
<ul style="list-style-type: none"><li>• Access to the HSU Data Center, Core Distribution Rooms, and Telecommunications Spaces is limited to authorized personnel only. Unauthorized access to the HSU Data Center, Core Distribution Rooms, or Telecommunications spaces must be reported to University Police and the Information Security Office.</li><li>• Violators are subject to disciplinary action up to and including dismissal from employment, expulsion from the University, and civil or criminal prosecution, as appropriate. Disciplinary action shall be conducted in accordance with applicable collective bargaining agreements or other appropriate University policies.</li><li>• By signing below, I certify that I have read and understand the above terms, and agree to the terms.</li></ul>					
Visitor Name	Company/Org	Escort Name	Date:	Time In	Time Out



## *Authority of Entry under N.C. General Statute 130A-17*

- Right of Entry: NC Hazardous Waste inspectors have the authority to enter premises as necessary to enforce environmental laws.
- Administrative Warrants: If entry is refused, an administrative search and inspection warrant can be obtained under G.S. 15-27.2.
- Imminent Hazard: No warrant is required if there is an imminent hazard present.



## *RCRA Section 3007 (a) and (b)*

- Provides the authority to conduct inspections
  - Any Representative of EPA or a State may inspect the premises and records of any person who generates, treats, stores, transports, or disposes of hazardous waste
- Restrictions imposed on the inspectors:
  - Inspection must be conducted at a reasonable time
  - Inspections must be completed with reasonable promptness
- All information, records or reports obtained as a result of an inspection are public record
  - UNLESS a claim of confidentiality is made



## *N.C.G.S. 130A-304 – Confidential information protected*

Confidential information is protected, if your facility makes a claim that meets the criteria in the general statute.



# *The Inspection: Records Review*

- Documentation of Waste Determination
- Notification Records (EPA 8700-12)
- Arrangements with Local Emergency Authorities
- Hazardous Waste Contingency Plan & Quick Reference Guide (QRG)
- Hazardous Waste Personnel Training Documents
- Biennial Report
- Hazardous Waste Central Accumulation Area (CAA) Inspection Records
- Hazardous Waste Manifests / Land Disposal Restrictions



SQG vs.  LQG  
*Paperwork Requirements*

### Small Quantity Generator

- Manifests/LDRs
- Weekly (7 days) Inspections of Central Accumulation Area(s)
- Documented arrangements made with local emergency authorities
- Emergency info posted by phones/HW areas
- Training - employees must be thoroughly familiar...
- SQG renotification

### Large Quantity Generator

- Manifests/LDRs
- Weekly (7 days) inspections of Central Accumulation Area(s)
- Documented arrangements made with local emergency authorities
- Contingency Plan & Quick Reference Guide
- Training
  - Documented RCRA training
  - Job description
- Biennial Report



# *Hazardous Waste Determination*

## *40 CFR 262.11(f)*



### Waste Identification:

Documentation must clearly identify and describe the waste being evaluated. Includes both non-hazardous and hazardous waste.



### Methods of Determination:

Record the methods used to determine if the waste is hazardous, including any tests or analytical data.



### Generator Knowledge:

Document the generator's knowledge of the waste, including materials and processes that produced it.



### Supporting Documentation:

Include any Safety Data Sheets (SDS), process flow diagrams, or other relevant information.



### Record Retention:

Maintain all documentation for at least three years from the date the waste was last sent for treatment, storage, or disposal.





SQG

LQG

# Notification of Hazardous Waste Activity

40 CFR 262.18





## *EPA Identification Numbers*



A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the administrator.

The EPA ID number will remain with the property.

*NCR000000*

*NCD987654321*



# *Re-notification for SQG and LQG*

*40 CFR 262.18*



Requires re-notification for SQGs and LQGs:

- SQGs every four years starting September 1, 2021
  - Next one due September 1, 2025
  - Must be submitted to the Hazardous Waste Section by September 1 of each year the re-notification is required
  - <https://files.nc.gov/ncdeq/Waste%20Management/DWM/HW/Guidance%20Document%20table%20documents/2020/SQG-ReNotification.pdf>
- LQGs by March 1 of each even numbered year
  - Can use Biennial Report to notify



## *Electronic Notification*



### *Reminder:*

- Now facilities request EPA ID numbers and update facility information electronically in EPA's RCRAInfo database instead of submitting a hard copy (EPA 8700-12 Form) to the HWS for entry in RCRAInfo
  - The only exception is a facility that submitting a RCRA Part A Application/Revision
    - They must still submit a hard copy (EPA 8700-23 Form) to the HWS Permit Writer in lieu of entering this information directly into RCRAInfo.



# *RCRAInfo Industry Application*

- Link to a tutorial about registering for RCRAInfo Industry Application:  
<https://files.nc.gov/ncdeq/Waste%20Management/DWM/HW/8700-guidelines/Electronic-Filing-of-EPA-Notifications.pdf>

Questions about registering?

Melodi Deaver      919-707-8204  
Melodi.Deaver@ncdenr.gov



## *Other Questions About Your Notifications*

- Laura Alexander 919-707-8214  
[Laura.Alexander@deq.nc.gov](mailto:Laura.Alexander@deq.nc.gov)





# Emergency Arrangements

For SQGs: 40 CFR 262.16(b)(8)(vi)

For LQGs: 40 CFR 262.256



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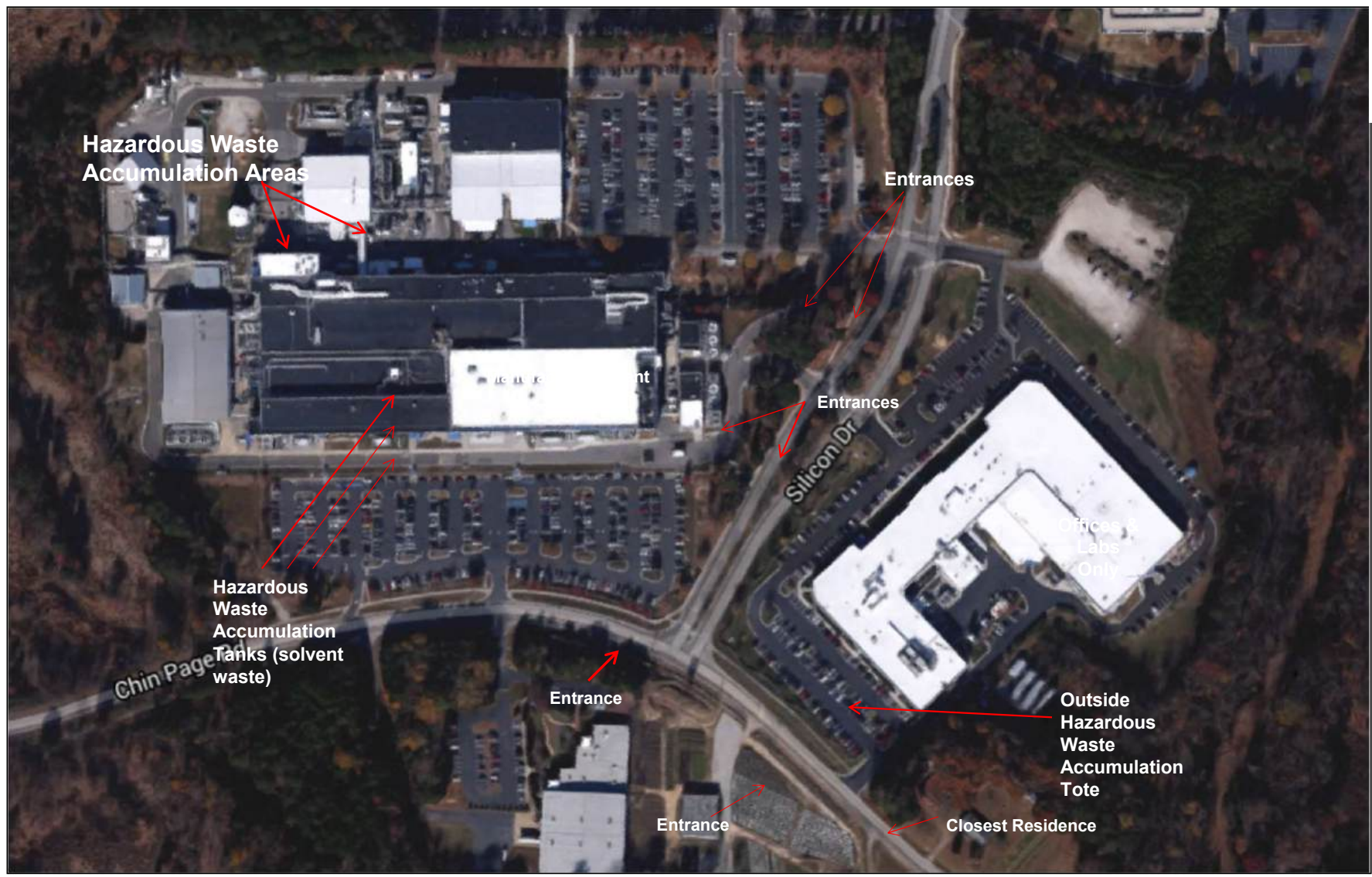
# *Emergency Arrangements With Local Authorities.*



- **For LQGs and SQGs:** Arrangements must account for areas where hazardous waste is **generated and accumulated** (both satellite and central accumulation areas) at the facility.
  - Coordination: Document attempts to make arrangements with local emergency authorities, such as fire departments, police, hospitals, and LEPCs.
  - Information Sharing: Provide them with the necessary information about the hazardous waste handled at the facility. What, Where, Who, Quantity.
  - Retention: Maintain all emergency arrangement documentation for at least three years after the arrangement is made.



SQG  
 LQG





# Emergency Arrangements



- When more than one police or fire department might respond to an emergency, designate a primary emergency authority to a specific fire or police department.
- ***An LQG should document arrangements agreed to by local authorities in their contingency plan. Page 119 in the Generator Compliance Manual.***



(Facility Name)  
(Attn: Facility Contact Name)  
(Address of the Facility)

Subject: Emergency Arrangements Response

Dear (Facility Contact Name):

I have received the information submitted by (Name of the Facility) to this office concerning hazardous waste generated and accumulated at your facility. Our agency is capable of providing the services indicated in the submitted information. I am also aware of the types, quantities, and properties of hazardous wastes generated and accumulated at the facility and the possible hazards associated with such materials, as described in the information that was submitted to this agency.

Sincerely,

Emergency Authority Contact (e.g. Fire Department, Police Department or Local Hospital)

Date Reviewed:(by Emergency Authority Contact) \_\_\_\_\_

# *Emergency Arrangements*



- A facility possessing **24-hour response capabilities** may seek a waiver from the authority having jurisdiction over the fire code within the facility's state or locality as far as needing to make arrangements with the local fire department as well as any other organization necessary to respond to an emergency, provided that the waiver is documented in the operating record.



# *Emergency Coordinator*

*SQGs – 40 CFR 262.16(b)(9)(i) and LQGs – 40 CFR 262.264*



- Identify and document an emergency coordinator who is available at all times to respond to emergencies.
- Has the responsibility for coordinating all emergency response measures.
- For LQGs it can be a staffed position if the facility operates 24/7/365.





# Contingency Plan

40 CFR 262.260 – 262.263



# *Contingency Plan*



- Development: LQGs must develop a detailed contingency plan for responding to emergencies.
- Documentation: Ensure that copies of the plan are kept on-site and shared with local authorities.
- It must describe the actions facility personnel must take in response to fires, explosions, or releases of hazardous waste
- Addresses areas where hazardous waste is generated and accumulated (both satellite and central accumulation areas)
- Documentation: Ensure that copies of the plan are kept on-site and shared with local authorities.



# *Contingency Plan*

## *40 CFR 262.261 – 262.262*



- Must describe arrangements agreed to by emergency authorities (police, fire, hospital, etc.) or, if applicable, the Local Emergency Planning Committee
- The plan must list names and emergency telephone numbers of all persons qualified to act as emergency coordinator (see 262.264)
  - List must be kept up to date
- Emergency Equipment:
  - Inventory: Maintain a documented inventory of emergency equipment available on-site (e.g., fire extinguishers, spill control materials, communication systems).
  - Location: Ensure the location of the emergency equipment is documented and accessible.





III. LIST OF EQUIPMENT	EMERGENCY EQUIPMENT CAPABILITIES/FUNCTION	(Ref. 40 CFR 262.261(e) LOCATION(S))
Absorbent Socks	Absorbs hazardous waste liquid spills found at the facility for proper cleanup/disposal.	At all satellite areas, central accumulation areas, and strategically placed throughout the facility.
Boots	Solvent resistant boots are large enough for personnel to wear over regular footwear. Prevents cleanup personnel from contaminating footwear in the event of a liquid spill.	Hazardous Material storage room
Broom	Long handle and flat brush surface have the ability to collect absorbent materials or other dry materials.	At the central accumulation areas
Face Mask	Breathing apparatus is designed to fit over the nose/mouth. Apparatus filters air by means of dual replaceable carbon cartridges. To be used when solvent vapors in confined areas might cause breathing difficulties or hazards to cleanup personnel.	Near all satellite areas and central accumulation areas
Face Shield	Protects the eye/face from potential splashes and contacts with materials while allowing full visibility for working.	Satellite and central accumulation areas
Fire Extinguisher	Multi-purpose (ABC) portable extinguisher is available to fight a fire which might occur during spill containment or collection.	Satellite and central accumulation areas
Floor Dry	Standard clay based industrial absorbent material used to absorb a spill and provide a temporary dike for spilled liquids.	At all satellite and central accumulation areas
Gloves	Solvent-resistant gloves protect to the forearm and are used to minimize exposure to hazardous materials.	At all satellite areas, central accumulation areas, and strategically placed throughout the facility

- Example of list of emergency equipment with the description, capabilities and location.
- Location of emergency equipment can also be shown on a map.
- Page 107



# Contingency Plan

## 40 CFR 262.261(f)



Contingency plan must describe the following:

- Describe the Signal(s) used to begin evacuation (e.g. horn, high/low siren, siren followed by verbal instruction, etc.)
- Evacuation routes – the primary & secondary routes from all areas where HW is generated and/or accumulated (satellite accumulation areas and central accumulation areas)
  - This can be described in the plan; or,
  - Evacuation map (more common) showing primary and secondary routes of evacuation.

-Print this *in color*

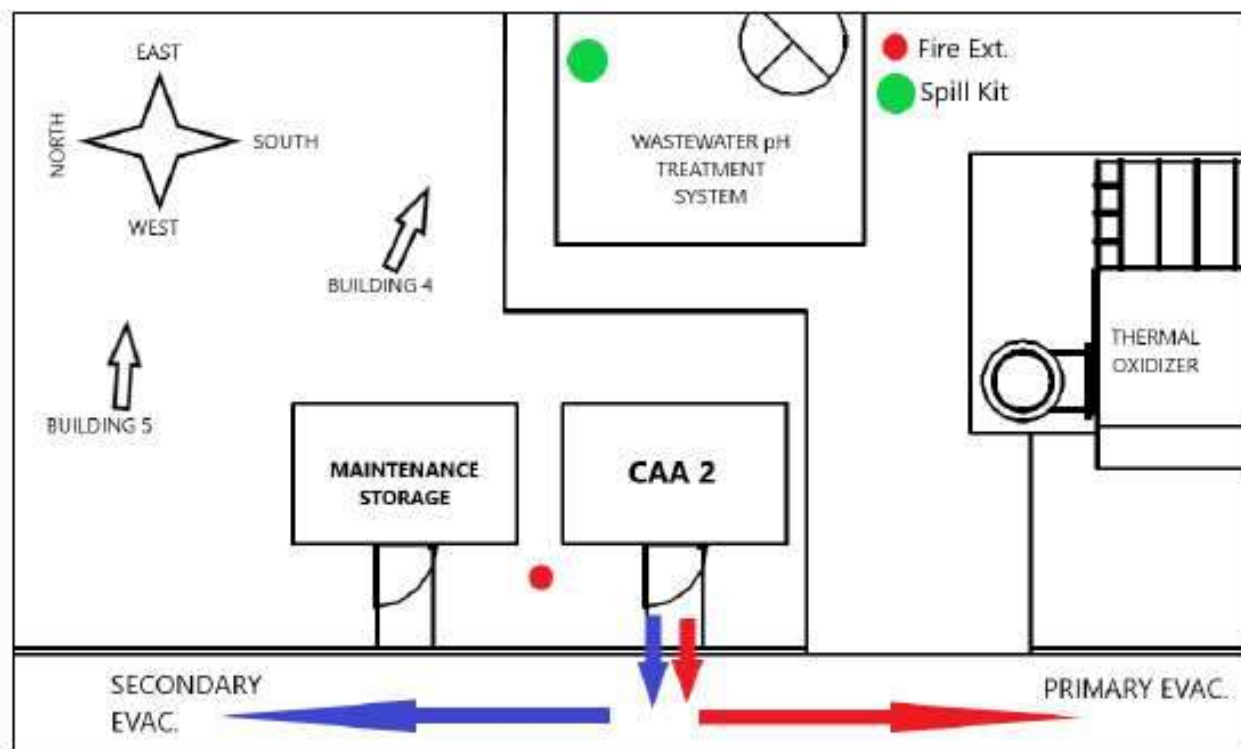




**Your Facility**  
**Environmental, Health and Safety Policy/Procedure**

**Title: Contingency Plan for a Major Chemical Spill or Release**

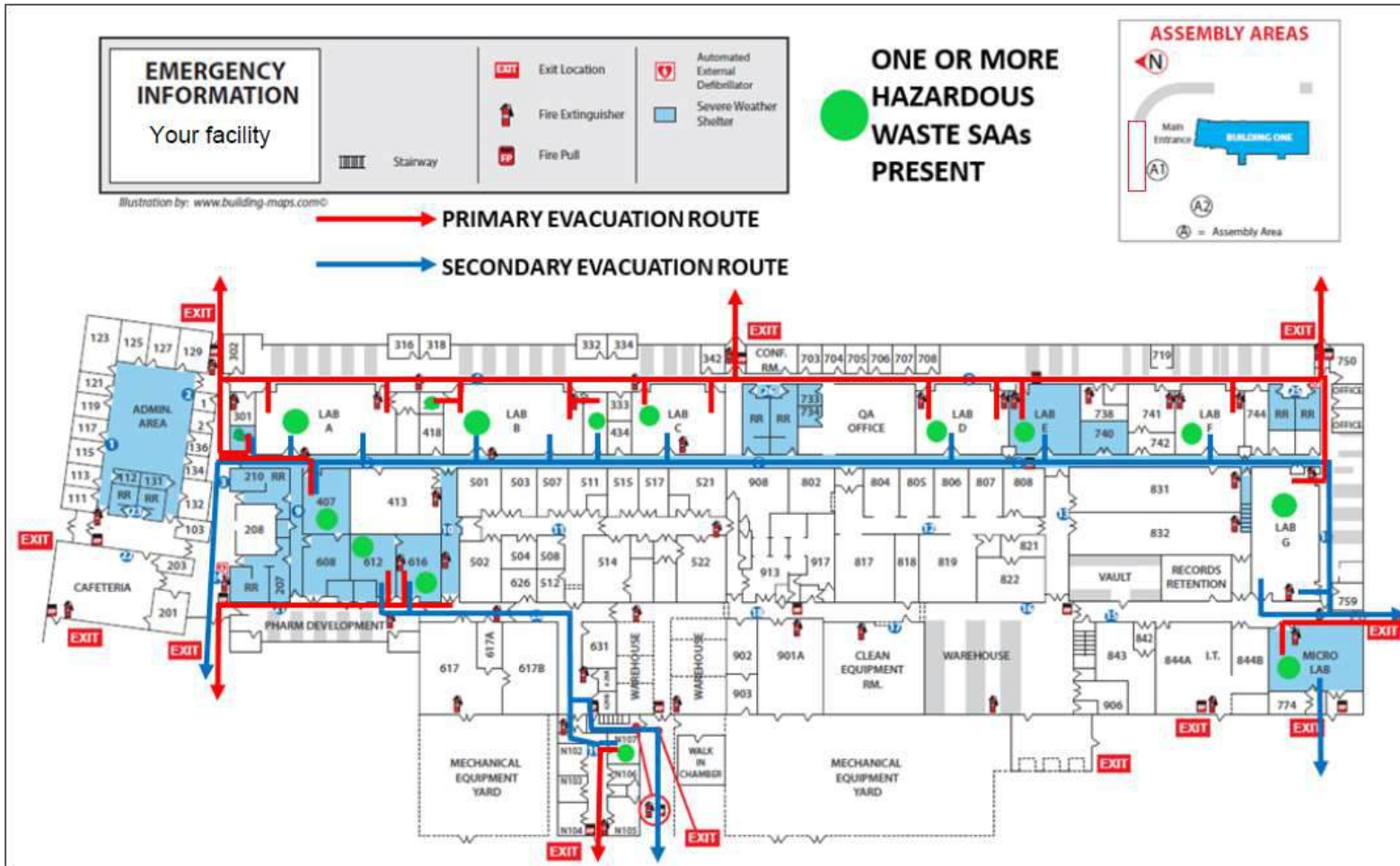
**CAA 2 Evacuation Map**



Example CP evacuation map from the HW central accumulation area

- *With primary and secondary routes of evacuation*

### Building 1 Evacuation Map



Example CP evacuation map from the HW satellite accumulation areas

- *With primary and secondary routes of evacuation*

# Contingency Plan

## 40 CFR 262.263



Update the Contingency Plan ***immediately*** when:

- Regulations change
- The plan fails in an emergency
- Changes occur in facility design, construction, operation, maintenance, or other circumstances (e.g. add a CAA)
- Emergency coordinators change
- Emergency equipment changes

***Must resend the portion(s) of CP & Quick Reference Guide with changes to local authorities***



# *Contingency Plan - Quick Reference Guide*

*40 CFR 262.262(b)*



- LQGs must prepare a quick reference guide (QRG) summarizing the contingency plan's key elements for local emergency responders.
  - The QRG should aim for clarity and brevity to ensure quick and easy access during emergencies.
  - Confirm that local emergency responders have the most recent version.
- Use Visual Aids:
  - Include maps, diagrams, and flowcharts to visually represent key information, like emergency routes and equipment locations.



# *Contingency Plan - QRG*

*40 CFR 262.262(b)*



The QRG must include eight components:

1. Name of the emergency coordinator(s) and 7days/24-hour emergency telephone number(s)
2. Types/names of hazardous wastes (HW) in layman's terms & associated hazard of each HW present at any one time;
  - Example: toxic paint wastes, spent ignitable solvent, corrosive acid
3. Estimated maximum amount of each HW that may be present at any one time;
4. Identification of any HW where exposure would require unique or special treatment by medical or hospital staff



EXAMPLE QUICK REFERENCE GUIDE

This example was created by EPA Region 7 to be used as a guide to assist the regulated community with compliance. It does not substitute for or replace any regulatory requirements.



**Contingency plan quick reference guide**

ABC FACILITY  
990 SW Main Street  
Anytown, Iowa 50000

**Facility Contacts:**

Primary Emergency Coordinator: George Washington Mobile Number (24/7): 515-555-0000  
 Secondary Emergency Coordinator: Abraham Lincoln Mobile Number (24/7): 515-555-0001  
 Tertiary Emergency Coordinator: Martha Washington Mobile Number (24/7): 515-555-0002

**Note:** ABC Facility operates 3 shift, 24/7, but the order of contact during an emergency is listed above.

**Hazardous Waste Information:**

Name of Waste	Waste Codes/Hazards	Location Accumulated	Maximum Amounts Present	Response Notes	Special Notes to Hospital/Treatment personnel
Paint Related Wastes (liquid)	D001 (ignitability, flash point <140 °F); F003, F005 (Benzene, Methyl Ethyl Ketone, Toluene, Toxicity)	NW corner of Warehouse, hazardous waste storage area	Five, 55-gallon drums (2,065 pounds)	If personnel come into direct contact with material, decontamination at the hospital may be required prior to treatment.	None
Paint Related Wastes (liquid)	D001 (ignitability, flash point <140 °F); F003, F005 (Benzene, Methyl Ethyl Ketone, Toluene, Toxicity)	Two Satellite Accumulation Areas as noted with blue asterisks on the attached map.	One, 55-gallon drum (440 pounds)	If personnel come into direct contact with material, decontamination at the hospital may be required prior to treatment.	None
Off-specification 2, 4-D, a herbicide, (brand name is Amine 4) (liquid)	D016 (toxicity); Flashpoint 190 °F.	SW corner of warehouse near new product storage of Amine 4.	Off-Spec – 1 tank, 1,000 gallons New product – 1 tank (same tank as off-spec), 1,000 gallons	Use PPE to prevent contact with skin and eyes. Immediately prevent spills from entering drains and waterways. Prevent sources of ignition and open flames.	Contact Chemtrac for emergency medical treatment information at 1-800-424-9300. If in eyes, wash eyes for several minutes.

# Contingency Plan - QRG

40 CFR 262.262(b)

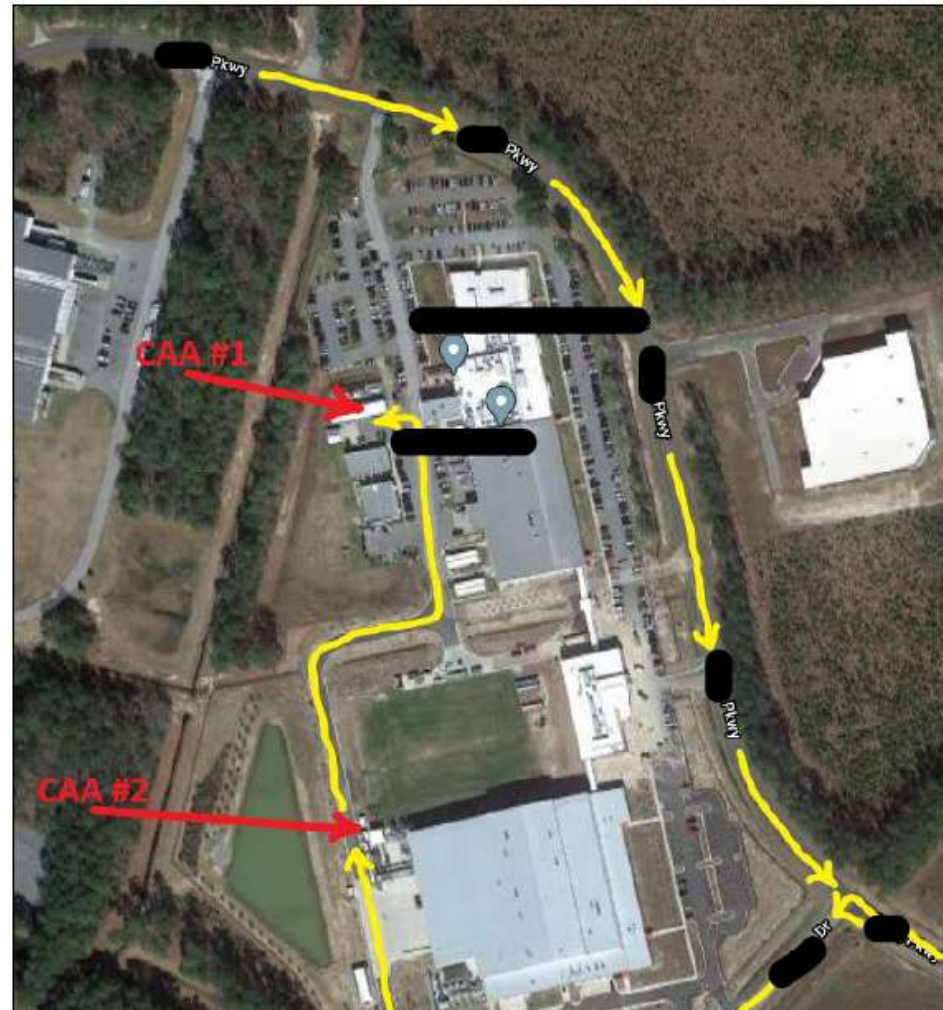


5. Map of facility showing where HWs are generated, accumulated, and treated, **as well as routes for accessing these wastes/areas. This includes satellite accumulation areas (SAAs) and central accumulation areas (CAAs)**
6. The identification of on-site notification systems (e.g., a fire alarm that rings off site, smoke alarms)



## *QRG, continued*

- Map of facility showing where hazardous wastes and generated, accumulated, and treated and routes for accessing these wastes.



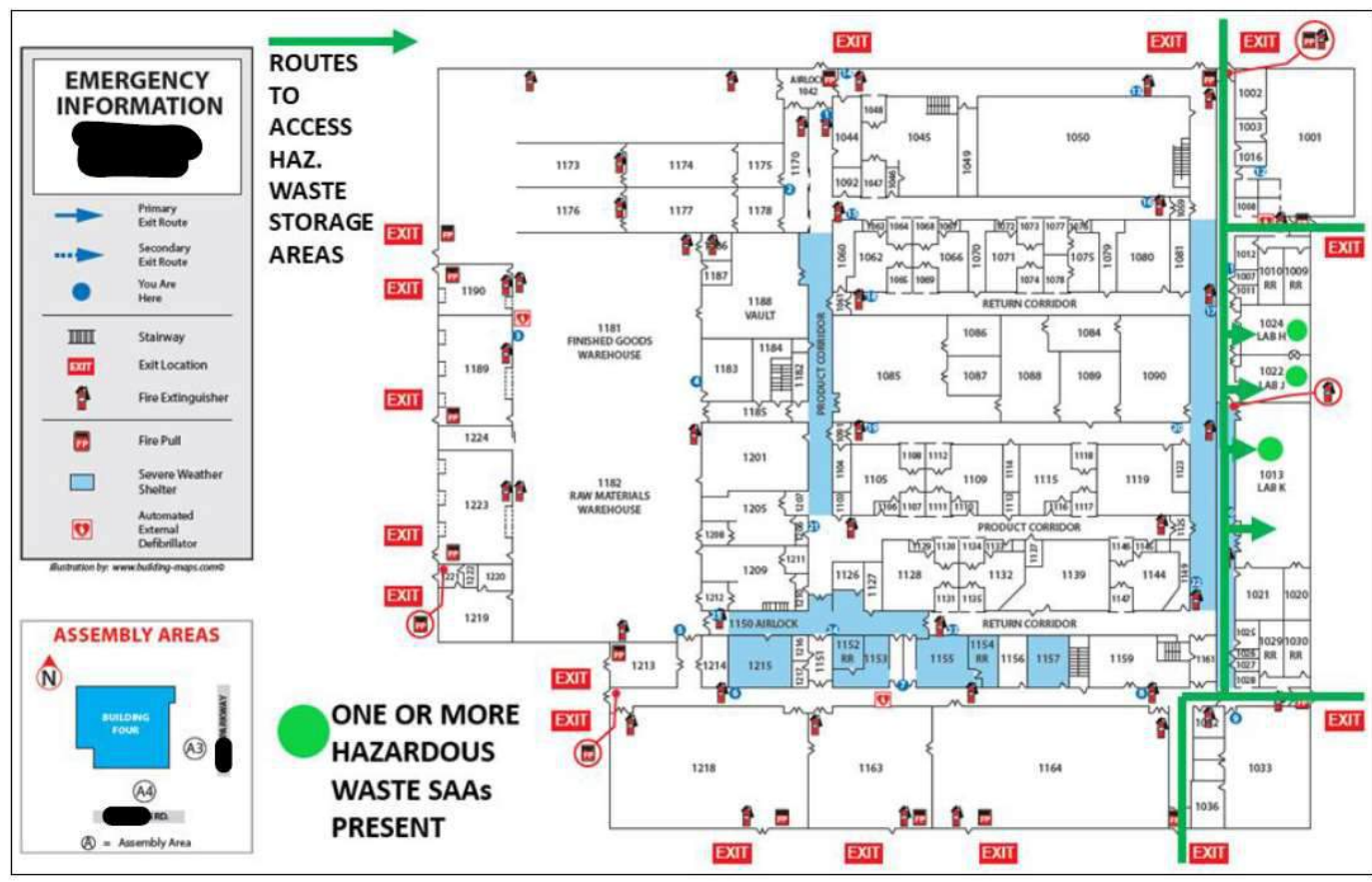


# QRG, continued



- Map of facility showing where hazardous wastes and generated, accumulated, and treated and routes for accessing these wastes.

Building D Hazardous Waste Storage Locations and Access Routes



# *Contingency Plan - QRG*

*40 CFR 262.262(b)*



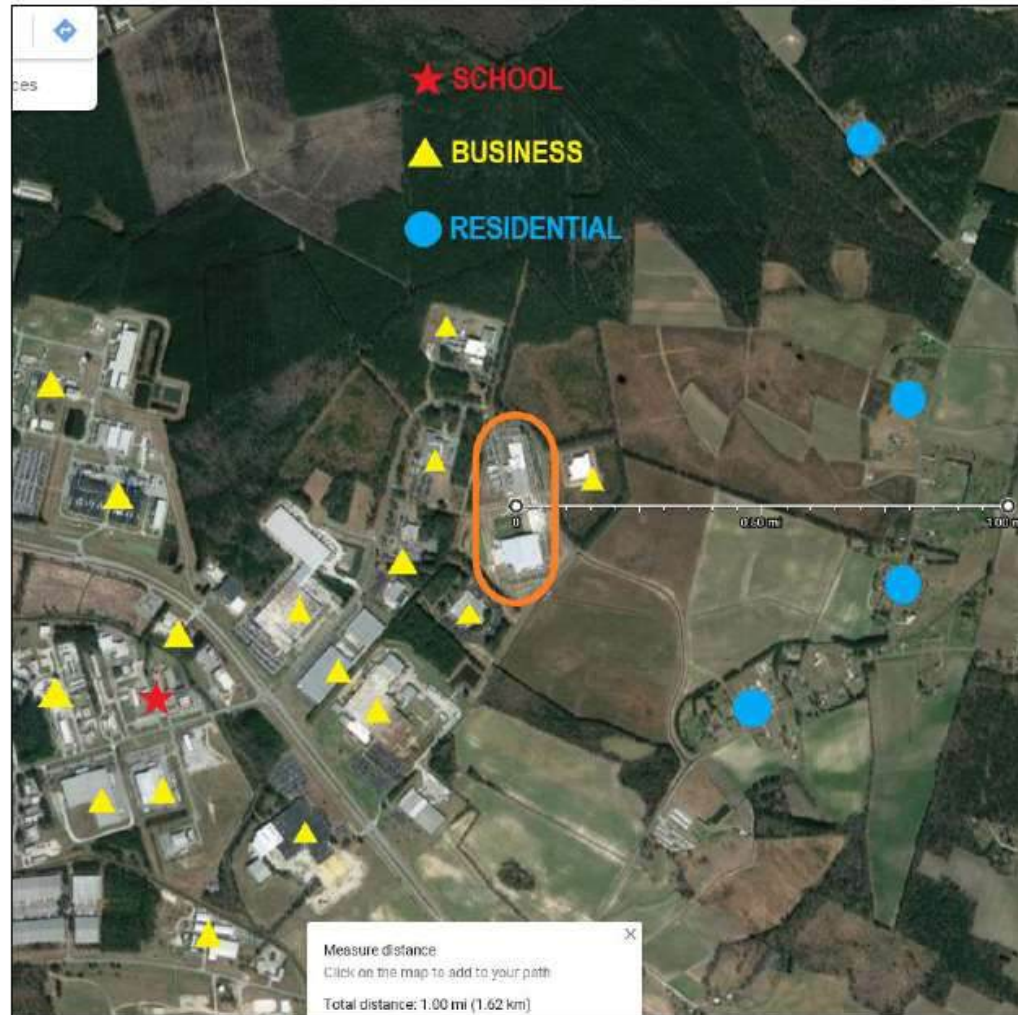
7. Locations of water supply (e.g., fire hydrant and its flow rate)
8. Street map of facility in relation to surrounding businesses, schools, residential areas to understand how best to get to facility and also evacuate citizens and workers



## *QRG, continued*

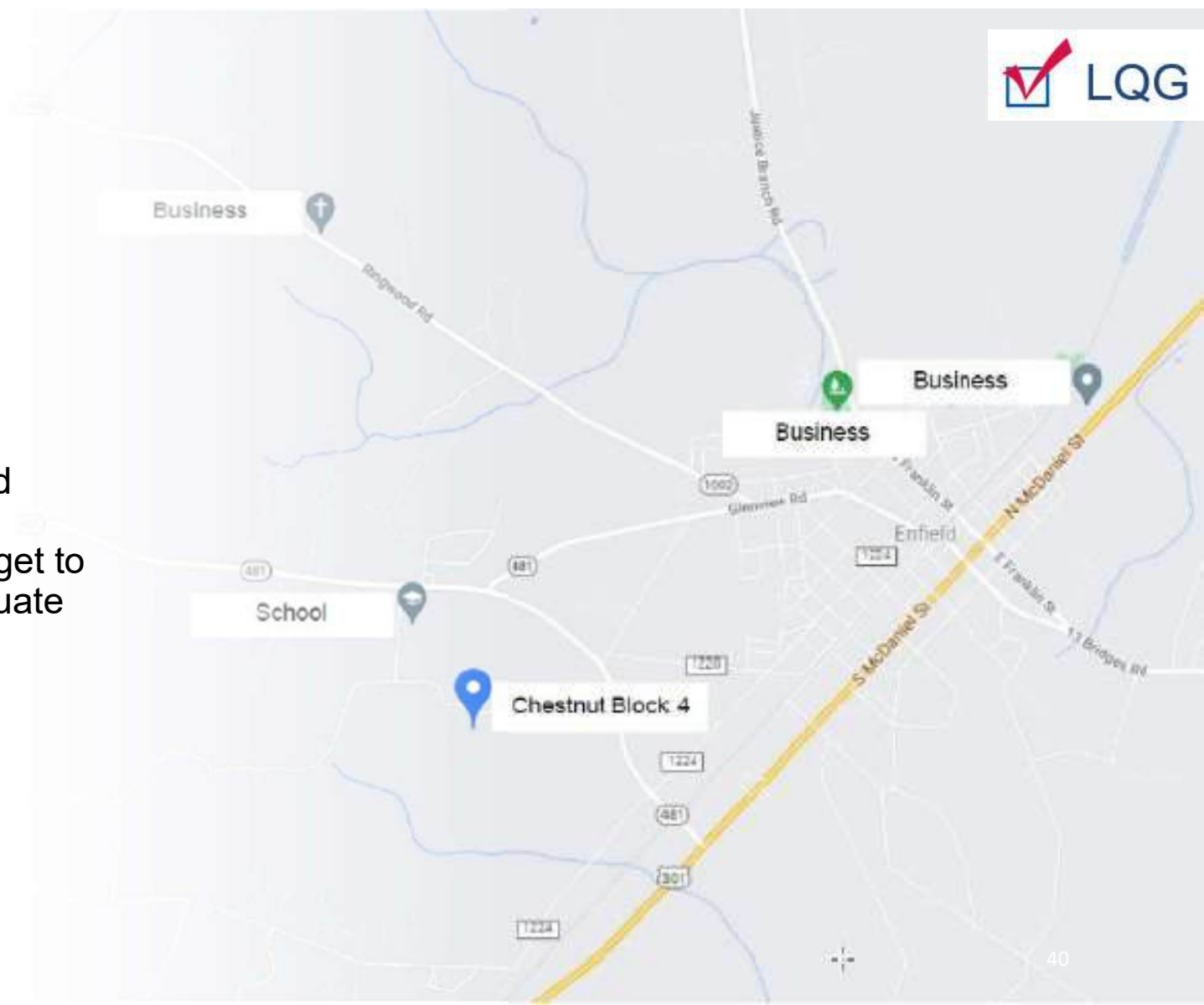
- Street map of facility in relation to surrounding businesses, schools, and residential areas to understand how best to get to the facility and also evaluate citizens and workers.

One Mile Radius Street Map



Orange oval - facility

- *QRG, continued*
- Street map of facility in relation to surrounding businesses, schools, and residential areas to understand how best to get to the facility and also evaluate citizens and workers.



# *Required Emergency Information*

*40 CFR 262.16(b)(9)(ii)*



The SQG must post the following information **next to telephones or in areas directly involved in the generation and accumulation of HW:**

- The name and emergency telephone number of the emergency coordinator
- Location of fire extinguishers and spill control material, and, if present, fire alarm; and
- The telephone number of the fire department (unless the facility has a direct alarm).
- Use visual aids when possible.



My Company Incorporated  
 191 Somewhere Road  
 Greenville, North Carolina 27834



# SQG Emergency Info Posted

Emergency Coordinator: \_\_\_\_\_ (252) 999-9999  
 Pitt County Fire Department: (252) 999-9999  
 CHEMTREC: (800) 424-9300  
 Pitt County Sheriff's Office: (252) 999-9999  
 Emergency Response: (252) 999-9999  
 Hospital: (252) 999-9999

## Emergency Contacts Telephone Posting

Post this sheet near the telephone(s) in areas where hazardous waste is generated or accumulated.

### Emergency Coordinator(s)

Coordinator name	Emergency telephone number

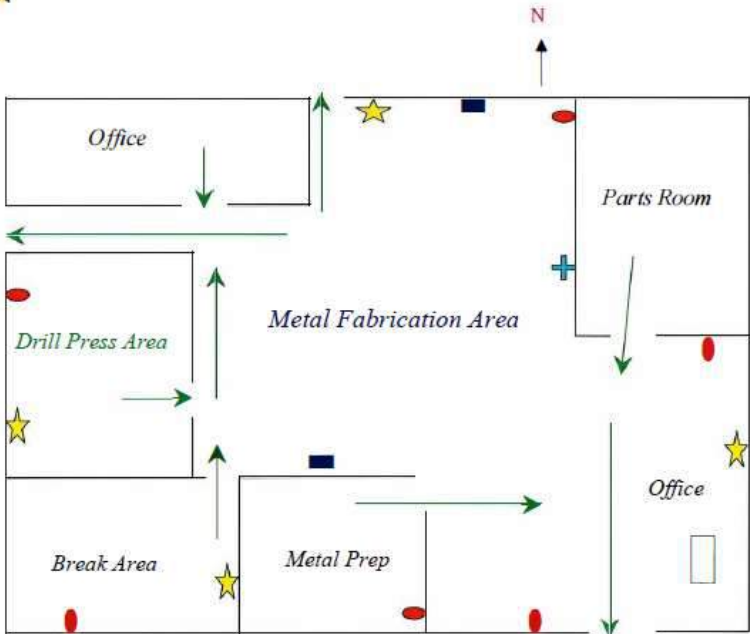
Emergency contact	Phone number
<b>Fire Department</b>	
<b>Police Department</b>	
<b>Hospital</b>	
<b>State 24-Hour Emergency Response Line</b>	
<b>National Response Center (24-Hour)</b>	<b>1-800-424-8802</b>

### Location of Emergency Response Equipment

Fire extinguishers	
Fire alarm (if present)	
Spill control materials	
Special equipment (if present)	

[Fulfills emergency contact telephone posting requirements for small quantity generators in §262.16(b)(9)(ii)]

- FIRST AID KIT
- FIRE EXTINGUISHERS
- SPILL KITS
- EXIT ROUTES
- FIRE ALARMS





## Personnel Training

For LQGs: 40 CFR 262.17(a)(7)

For SQGs: 40 CFR 262.16(b)(9)(iii)





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## *Who must be trained?*

- Emergency Coordinators for hazardous waste
- Employees who manage hazardous waste
  - Including, but not limited to those who:*
    - Sign manifests
    - Perform weekly inspections
    - Move hazardous waste from satellite to central accumulation area
    - Add/remove hazardous waste to/from hazardous waste central accumulation container
- Contractors with hazardous waste management duties





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## *What training is required?*

- Training must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.
- HAZWOPER training alone may not satisfy all the hazardous waste requirements since its an OSHA requirement for workplace safety standards and not hazardous waste specific.

## *What training is required?*

### Hazardous Waste Management:

- HW accumulation areas (SAAs and CAAs)
- Container and/or tank management
- Weekly inspections
- Waste determinations
- Waste packaging
- Properties of facility's hazardous waste





## *What training is required?*

### Emergency Response:

- Alarm/types of communication
- Implementing the contingency plan (fire, explosion, and/or spill)
- Evacuation routes
- Emergency equipment function, inspection, and repair
- Site shutdown procedures

# *Emergency Coordinator Training*



- Contingency plan content and implementation
  - Appropriate responses to fires, explosions, and releases (including impacts to waterways)
- Communication and alarm systems
- Must assess both the direct & indirect effects of the emergency
- Understand what information the National Response Center (NRC) will need if they are notified
- When to notify HWS staff and the information required (*40 CFR 262.265(i)*)





## *Who can provide RCRA training?*

---



Training program must be directed by a person trained in hazardous waste management procedures (qualified either by experience or education).



Document the qualifications of the instructors conducting the training.

## *When and how often is training required?* LQG

- Training must be completed within six months of new employment or position change with HW management responsibilities (if different duties)
- Employees must not work in unsupervised positions until they have completed the training requirements
- Personnel must participate in annual review of the initial training required.

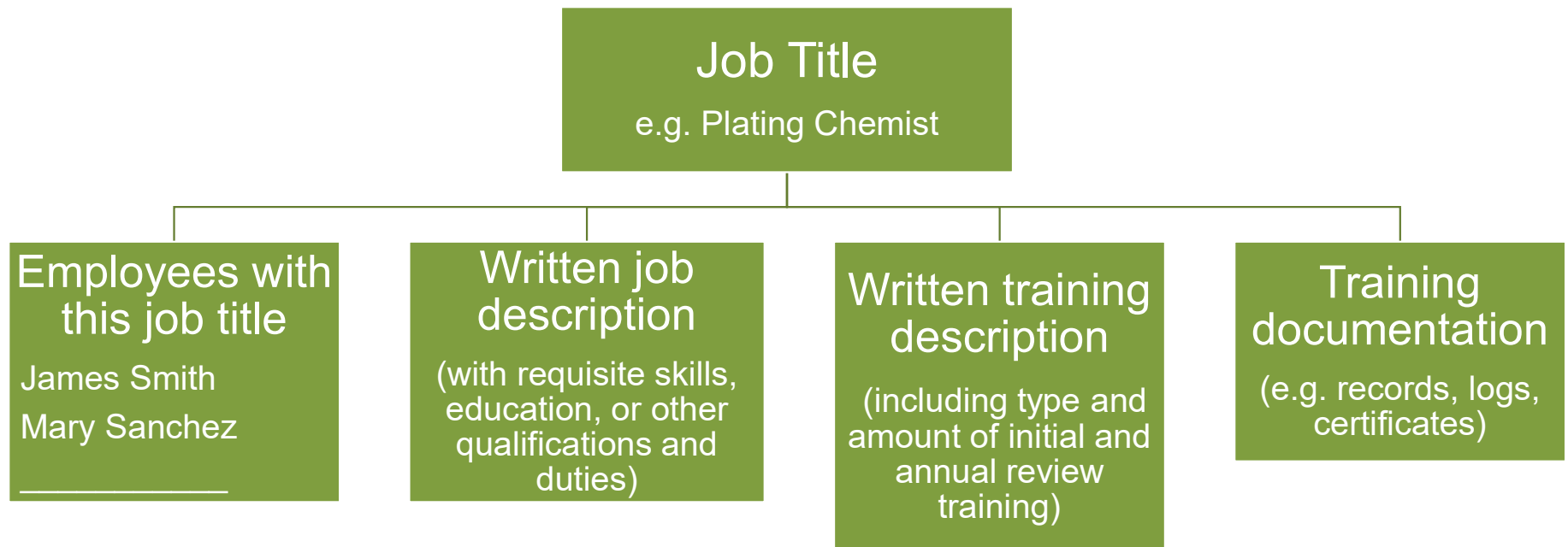




*ANNUAL REVIEW* =

At least every 365 days

# Training Recordkeeping Requirements







## *Required Training Records*

The LQG must maintain the following documents and records at the facility:

- The job title for each position at the facility related to hazardous waste management and the name of each employee filling that job title.





## *Required Training Records*

- A written job description for each position
  - Must include the requisite skill, education, or other qualifications, and duties of the facility personnel assigned to each position
  - Must include hazardous waste management responsibilities



**Sample Training Documents**  
Hard Chrome Plating Company  
Job Description



Name: Dewayne Johnson  
Job Title: Plating Chemist

**Summary:** Plating Scientist is the level for very experience and/or advanced technical chemists. Must have the ability to effectively determine proper plating processes.

**Minimum Requirements:** Master's in chemistry with 5+ years of experience or Bachelor's degree with 10+ years of experience.

**Responsibilities:**

- Proposes and implements successful plating processes
- Designs experiments to address project goals based on interpretation of results, with limited guidance
- May train, supervise or direct other scientists at the associate level

**Technical Skills:**

- Expert understanding of applied theory of plating chemistry related to projects
- Broad knowledge of plating process reactions and their applications
- Basic understand of plating knowledge
- Effectively participates in development of project plan to meet goals and objectives

**Communication Skills:**

- Provides regular updates to colleagues
- Prepares written reports detailing plating processes
- Writes clear and concise entries in laboratory notebook

**Safety:**

- Accountable for maintaining safe working environment
- Observes Hard Chrome Plating Company safety policies and procedures
- Provides strong leadership by principle and by example

**Hazardous Waste Management:**

- ~~Secondary Emergency Coordinator.~~
  - Remain familiar with the contingency plan and procedures set forth in the plan
  - Make appropriate communications in time of emergency with Fire/Police, Hard Chrome Plating executive staff as appropriate, with personnel in charge of environmental reporting, and environmental emergency response contractors as appropriate
  - Direct Emergency Personnel to appropriate locations
  - Act as liaison between emergency crews, response contractors and Hard Chrome Plating staff
- Hazardous Waste Handler
  - Awareness and satellite accumulation (including but not limited to) caps, labeling, dating
  - Periodically removing satellite waste containers and deliver to less than central accumulation area
  - Annual RCRA Training including Emergency Coordinator (secondary) refresher, Contingency Plan training, RCR hazardous waste training



## Staff with Hazardous Waste Responsibilities



### ABC Plating Company, North Carolina

Revised June 2021

#### HAZARDOUS WASTE JOB FUNCTIONS/TRAINING:

The hazardous waste management team consists of the following positions:

Position/Job Title	Employee Name	Level of Training	Responsibilities
EHS Manager	Heather Goldman	<ul style="list-style-type: none"> <li>• Site Waste Management</li> <li>• Hazardous Waste Management</li> <li>• Hazwoper First Responder Operations</li> <li>• DOT Hazardous Materials Transportation 49 CFR Parts 171-180</li> <li>• Review of Contingency Plan</li> </ul>	Overall program management/program support. Transfer hazardous waste to the central accumulation area. Emergency response. Primary emergency coordinator. Signs manifests.
Plating Chemist Supervisor	Jenne Walker Autumn Romanski	<ul style="list-style-type: none"> <li>• Site Waste Management</li> <li>• Hazardous Waste Management</li> <li>• Review of Contingency Plan</li> <li>• DOT Hazardous Materials Transportation 49 CFR Parts 171-180</li> </ul>	Transfer hazardous waste to central accumulation area. Weekly inspections. Prepare hazardous waste for shipment. Signs manifests. Emergency response. Secondary emergency coordinator.
Plating Chemist	Wes Hare Aram Kim Dan Girdner Andrea Stermer	<ul style="list-style-type: none"> <li>• Site Waste Management</li> <li>• Hazardous Waste Management</li> <li>• Waste Handling Operations</li> <li>• Review of Contingency Plan</li> </ul>	Transfer hazardous waste to central accumulation area.

#### TRAINING FREQUENCY

## *Required Training Records*

- Curriculum: Maintain detailed records of the topics covered in the training, such as waste handling procedures, emergency response, and regulatory requirements.
- Attendance: Keep a record of which employees attended the training sessions, including dates and times.



**JOB DESCRIPTION/TRAINING RECORD FOR HAZARDOUS WASTE  
MANAGEMENT/DISPOSAL POSITIONS PER 40 CFR 262.17(a)(7)**



This record must be maintained at the facility.

FACILITY: *facility name* \_\_\_\_\_ UNIT: *Plant number* \_\_\_\_\_

ADDRESS: *address of facility* \_\_\_\_\_

PHONE: *000-000-0000* \_\_\_\_\_ DATE: \_\_\_\_\_

EMPLOYEE NAME: \_\_\_\_\_

JOB TITLE: \_\_\_\_\_

HAZARDOUS WASTE RELATED QUALIFICATIONS AND DUTIES **(INCLUDE REQUISITE SKILLS, EDUCATION, OR OTHER QUALIFICATIONS).**

The above person works with and handles hazardous materials and wastes at the work site located at \_\_\_\_\_, CITY, STATE. This person has the appropriate qualifications to read understand, apply, and communicate written and verbal information regarding handling and managing hazardous wastes. Training is required within six months of assuming duty and once a year thereafter. This employee is responsible for proper handling, documenting, inspecting, and transporting hazardous wastes. This employee is also responsible for responding to emergencies. The above individual commenced these duties on \_\_\_\_\_ 20\_\_\_\_\_.

DATE	DESCRIPTION OF TRAINING ENTER THE TITLE, A BRIEF DESCRIPTION AND THE NAME OF THE INSTRUCTORS. NOTE WHETHER THE TRAINING IS: CLASSROOM, ON-THE-JOB, OR COMPUTER BASED/ELECTRONIC	EMPLOYEE SIGNATURE



## *Required Training Records*

- Keep training records in order and up to date
- Employee name, job title, job description, HW duties, and training dates/types in one location
- Keep a copy of these records in the hazardous waste files (not just in human resources' files!)

# *Training Records Retention*

01

Training records on current personnel must be kept until closure of the facility.

02

Training records on former employees must be kept for at least three years from the date the employee last worked at the facility.

03

Training records must accompany personnel transferred within the same company.



# *Personnel Training for SQG*

*40 CFR 262.16(b)(9)(iii)*



The generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies.




*DOT Hazardous Materials  
Training  
49 CFR 172 – Not HW  
regulations!!*

- This workshop does not qualify for the Dept. of Transportation Hazardous Materials Training that is required for people who sign a hazardous waste manifest *in addition to other “Hazmat employees”...*

Resources:

- Hazmat Transportation Training Requirements brochure:  
<https://www.phmsa.dot.gov/training/hazmat/hazmat-transportation-training-requirements>
- Hazmat Transportation Training Modules:  
<https://www.phmsa.dot.gov/training/hazmat/training-modules>



**DOT hazmat is  
NOT the same as  
RCRA hazardous  
waste!!**



# Biennial Report

40 CFR 262.41



# *Biennial Report*



- LQG must prepare and submit a single copy of a Biennial Report by March 1 of each even numbered year; 2023 activities were due March 1, 2024
- Biennial Report covers generator activities during the previous year
  - 2023 Biennial Report was due March 1, 2024 (covering 2019 activity)
  - Biennial Report is filed through RCRAInfo Industry Application (no longer filed through Easitrak)
- LQG must keep a copy of each Biennial Report for 3 years



# *Biennial Report*

- **Report Contents:**
  - **Waste Description:** Provide detailed descriptions of the types and quantities of hazardous waste generated during the reporting period.
  - **Management Methods:** Document the methods used for waste management, including treatment, storage, and disposal practices.
  - **Facility Information:** Include details about the facility, such as location, EPA ID number, and contact information.
- **Common Pitfalls:**
  - **Incomplete Data:** Avoid missing or inaccurate information, which can lead to non-compliance.
  - **Late Submission:** Ensure timely submission to avoid non-compliance.
- **Tips for Compliance:**
  - **Pre-Submission Review:** Double-check all data and entries before submitting.
  - **Software Tools:** Consider using software tools to help track waste generation and streamline the reporting process.





# Inspection Records

For LQGs: 40 CFR 262.17(a)(1)(v)  
For SQGs: 40 CFR 262.16(b)(2)(iv)





# Inspection Records

- Inspection Requirements:
  - Frequency: Conduct inspections of hazardous waste storage areas at least once a week.(Every 7 days).
  - Scope: Inspect containers, tanks, and other storage areas for signs of leaks, deterioration, or potential hazards.
- Inspection Checklist:
  - Container Condition: Check for corrosion, dents, and proper labeling.
  - Containment Systems: Ensure secondary containment systems are intact and functional.
  - Spill Control Equipment: Verify that spill kits and emergency equipment are readily available and in good condition.
  - Aisle Space: Confirm adequate aisle space is maintained for easy access and emergency response.

# Inspection Records

- Documentation:
  - Inspection Log: Record the date, time, and findings of each inspection in a logbook or electronic system.
  - Inspector Information: Include the name of the individual who conducted the inspection.
  - Corrective Actions: Document any issues found and the corrective actions taken, along with the completion date.
- Record Retention:
  - Retention Period: Maintain inspection records for at least three years from the date of inspection
  - Accessibility: Ensure records are easily accessible for regulatory review during inspections or audits.



# Inspection Records

- **Best Practices:**
- **Consistent Scheduling:** Establish a routine inspection schedule to ensure inspections are conducted regularly.
- **Training:** Ensure all personnel involved in inspections are properly trained and aware of what to look for.
- **Follow-Up:** Promptly address any issues identified during inspections to maintain compliance and safety.





# Hazardous Waste Manifests

40 CFR 262 Subpart B (262.20 – 262.27)



# *Hazardous Waste Manifest*



**May be the single most important document for a generator!**

- Manifests document the cradle to grave
- The manifest clearly documents who, what, where, when, and how much has been sent
- Facilities (TSDs) mishandle, go bankrupt, etc. and the waste and/or contamination will have to be dealt with



# Key Components of the Hazardous Waste Manifest



- Generator ID #
- Emergency Response Phone
- Manifest Tracking #
- Generator's Name
- Generator's Address
- Generator's Phone
- Transporters
- Designated Facility

Please print or type.

Form Approved: OMB No. 2050-

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number	
5. Generator's Name and Mailing Address		Generator's Site Address (if different than mailing address)				
Generator's Phone:						
6. Transporter 1 Company Name				U.S. EPA ID Number		
7. Transporter 2 Company Name				U.S. EPA ID Number		
8. Designated Facility Name and Site Address				U.S. EPA ID Number		
Facility's Phone:						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		No.	Type			
1.						
2.						
3.						

DRAFT



# Hazardous Waste Manifest, cont.

- A description of the waste, including container quantity and type, weight/volume, and waste codes
- Any special handling instructions
- Generator's certification (signature and date)

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
		No.	Type			
1.						
2.						
3.						
4.						
14. Special Handling Instructions and Additional Information						
15. GENERATOR/SOFFEROR'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.						
Generator's/Offor's Printed/Typed Name		Signature			Month	Day Year
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Part of entry/exit: _____ Date leaving U.S.: _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name		Signature			Month	Day Year
Transporter 2 Printed/Typed Name		Signature			Month	Day Year
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
18b. Alternate Facility (or Generator)				Manifest Reference Number		
				U.S. EPA ID Number		
18c. Signature of Alternate Facility (or Generator)						
					Month	Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1.	2.	3.	4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name		Signature			Month	Day Year

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM



# Hazardous Waste Manifest, cont.

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NC [REDACTED]	2. Page 1 of 1	3. Emergency Response Phone 8002553924	4. Manifest Tracking Number [REDACTED] 864837 JJK			
5. Generator's Name and Mailing Address 252- [REDACTED] [REDACTED] [REDACTED]				Generator's Site Address (if different than mailing address) [REDACTED] [REDACTED] [REDACTED]				
6. Transporter 1 Company Name Lamp Environmental Industries (LEI)				U.S. EPA ID Number LAR000055467				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address Fielding Environmental 150 4th Ave Freedom, PA 15042				U.S. EPA ID Number PAD000797548				
Facility's Phone:								
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Vol.	13. Waste Codes		
		No.	Type			D001	D007	D008
X	1. RQ, UN1133, Waste Adhesives, 3, PG-II (RQ-D001,D007,D008,D011,D018)	24	DM	372 -392	P	D001	D007	D008
X	2. RQ, UN1133, Waste Adhesives, 3, PG-II (RQ-D001,D007,D008,D011,D018)	3	DM	473	P	D001	D007	D008
	3.							
	4.							
14. Special Handling Instructions and Additional Information 1.ERG#128: 2022PA - 2885 2.ERG#128: 2022PA - 2885								
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.								
Generator's/Officer's Printed/Typed Name [REDACTED]				Signature [REDACTED]		Month Day Year 10 15 22		

## *Hazardous Waste Manifest*

---

Make sure manifests are up to date

---

Keep in the order of their shipping dates

---

Put the copy signed by destination facility in front

---

***Recommended to KEEP THEM FOREVER!!!***

---

*Electronic copies are acceptable*





# *Exception Reporting 40 CFR 262.42*

If an LQG does not receive a signed copy of the manifest from the designated facility within 35 days, the generator must contact the transporter or designated facility to determine the status of the hazardous waste.

File an Exception Report with the HWS if generator has not received a copy of the manifest within 45 days (60 days for SQGs) of the date the waste was accepted by the initial transporter.





# *Exception Reporting 40 CFR 262.42*

## **LQG Exception Report must include:**

- Legible copy of the manifest
- Cover letter signed by the generator or his authorized representative explaining efforts taken to locate the hazardous waste and the results of those efforts
- Must keep copy of Exception Report on file for 3 years

## **SQG "Exception Report" must include:**

- Legible copy of the manifest with an indication the generator did not receive confirmation of delivery



# Land Disposal Restrictions

40 CFR 268



# *Land Disposal Restrictions (LDR)*



- LDR Program applies to everyone handling HW (except VSQGs)
- Purpose of LDR:
  - Protection: LDRs ensure that hazardous waste is treated to reduce its toxicity before disposal on land, protecting human health and the environment.
- LDR Notification Form:
  - Submit a notification form to the receiving facility indicating whether the waste meets LDR treatment standards. Applicable to each waste stream.
  - Contents: Include waste codes, treatment standards, test results and any additional information required.



# *LDR Requirements*

*40 CFR 268.7(a)(1)-(9)*



- Certification:
  - Generator Certification: Certify that the waste either meets the treatment standards or will be treated to meet the standards before disposal.
  - Facility Certification: Receiving facilities must certify that the waste has been treated to meet LDR standards before disposal
- Another notification is required when the treatment facility, process, or the waste changes
- Documentation must be kept for at least 3 years



UTS FEDERAL/SOUTH CAROLINA ONE-TIME LAND DISPOSAL  
RESTRICTION NOTIFICATION AND CERTIFICATION FORM



Generator Name: [REDACTED]

US EPA ID Number: NCR 000 [REDACTED]

Waste Description: Emission Control Dust from the Primary Production of Steel in Electric Furnaces. (K061 – Non-wastewater)

Designated Facility: American Zinc Recycling Corp  
941 Technology Dr  
Barnwell, SC 29812

US EPA ID Number: SCR 000 771 618

[REDACTED] North Carolina as required by 40CFR 268.7 provides to America Zinc Recycling Corp the notification that the material being shipped under the Manifest Document Number listed below and all future shipments are subject to land disposal restrictions. This waste is prohibited from land disposal since it does not meet the applicable treatment standards in 40CFR 268.40 indicated below.

Waste Code	Regulated Hazardous Constituent	Regulatory Level (Non-wastewater) TCLP, mg/l
K061	Antimony	1.15
	Arsenic	5.0
	Barium	21
	Beryllium	1.22
	Cadmium	0.11
	Chromium (Total)	0.60
	Lead	0.75
	Mercury	0.025
	Nickel	11
	Selenium	5.7
	Silver	0.14
	Thallium	0.20
	Zinc	4.3

[REDACTED] Name      [REDACTED] Signature      [REDACTED] 965 State Manifest Doc. No.      12/23/ Date



## *LQG CAA Closure and Facility Closure*



If a large quantity generator of hazardous waste intends to permanently cease the accumulation of hazardous at its site it must make specific notifications and meet certain performance standards.

- Notify no later than **30 days** prior to facility closure using a 8700-12 notification.
- Notify within **90 days** after closure of facility using a 8700-12 notification that the facility has met or not met the closure performance standards.

### Closure performance standards

- LQG must close each hazardous waste container accumulation area.
- LQG must also remove or decontaminate all contaminated equipment, structures, soil, and any remaining hazardous waste.
- Any hazardous waste generated during closure must be managed as a hazardous waste by the LQG.



## *Just Closing a CAA and not the Facility*



If you are planning to stop using a CAA temporarily or permanently.

- Place a notice in the facility's operating record within 30 days after closure of the hazardous waste accumulation unit. Notice must identify the location of the unit within the facility. If the waste accumulation unit is subsequently reopened, the generator may remove the notice from the operating record.
- Or perform the steps on the previous slide.



## *Common Pitfalls and How to Avoid Them*

- **Incomplete or Missing Manifests.**
  - Ensure all hazardous waste manifests are accounted for and completed properly.
- **Missing or Inadequate Contingency Plans/QRGs**
  - Ensure that Contingency Plans/QRGs are updated and contain the necessary information.
  - Double check emergency coordinator information.
- **Failure to Conduct or Document Weekly Inspections.**
  - Ensure that weekly inspections are conducted every seven days from the previous inspection.
  - Ensure that weekly inspections are properly documented.





## *Remember!*



- Keep your records neat and orderly
- Ensure records are available for review
  - Location of records must be known by multiple staff
- Call your inspector for a compliance assistance visit (CAV), if you've never been inspected; if process changes occur; if new EHS staff.





You did it!  
*Congratulations*





## *Photo Credits*

- Slide 72 - <http://www.fritcar.com/>





North Carolina Hazardous Waste Workshop  
Solvent Wipes, Episodic Generation, &  
Container Management

Fall 2024





**Andrea Stermer**  
Environmental Specialist II

**Hazardous Waste Section**  
**Division of Waste Management**

**Andrea.Stermer@deq.nc.gov**  
**919-270-3871**



# Topics

- Solar Panels
- Excluded Solvent-Contaminated Wipes
- Optional Provisions
  - Episodic Generation of Hazardous Waste (HW)
    - ❖ Episodic vs. Short Term Generation
  - Consolidation of VSQG HW at LQGs
- Hazardous Waste Container Management
  - Satellite Accumulation Area (SAA) units
  - Central Accumulation Area (CAA) units
  - Empty Containers



# *Solar Panels*

## Solar Panel Guidance:

<https://deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/technical-assistance-and-guidance-documents#SolarPanels-3173>



Picture from: <https://www.eqmagpro.com/wberc-approves-20-mw-of-solar-projects-in-birbhum-district-west-bengal/>

# *Excluded Solvent-Contaminated Wipes*

*For Reusable Wipes: 40 CFR 261.4(a)(26)*

*For Disposable Wipes: 40 CFR 261.4(b)(18)*

*Generator Compliance Manual - Appendix O*







## Excluded Solvent-Contaminated Wipes Summary



	Solvent-Contaminated Reusable Wipes	Solvent-Contaminated Disposable Wipes
Includes:	<p>Wipes containing one or more F001-F005 listed solvents in § 261.31 that includes (but not limited to):</p> <ul style="list-style-type: none"> <li>▪ Methylene chloride (F001 or F002)</li> <li>▪ Tetrachloroethylene (F001 or F002)</li> <li>▪ Trichloroethylene (F001 or F002)</li> <li>▪ Acetone (F003)</li> <li>▪ Ethyl benzene (F003)</li> <li>▪ Methanol (F003)</li> <li>▪ Benzene (F005)</li> <li>▪ Methyl ethyl ketone (F005)</li> <li>▪ Toluene (F005)</li> </ul>	
Does not include:	<ul style="list-style-type: none"> <li>➤ Wipes that contain listed hazardous waste other than solvents.</li> <li>➤ Wipes that exhibit the characteristic of toxicity, corrosivity, or reactivity due to non-listed solvents or contaminants other than solvents.</li> </ul>	
		<ul style="list-style-type: none"> <li>➤ Wipes that are hazardous due to trichloroethylene</li> </ul>



## *Excluded Solvent-Contaminated Wipes Summary, cont.*



	Solvent-Contaminated Reusable Wipes	Solvent-Contaminated Disposable Wipes
Storage:	Must be accumulated, stored, and transported in: <ul style="list-style-type: none"> <li>▪ Non-leaking, closed containers that can contain free liquids (if they occur)</li> <li>▪ Must be labeled/marked “Excluded Solvent-Contaminated Wipes”</li> <li>▪ They may be accumulated for up to 180 days</li> <li>▪ Wipes must not contain free liquids prior to being sent for cleaning or disposal</li> </ul>	
Free Liquids:	Free liquids removed from wipes must be managed as hazardous waste.	
Handling Facilities:	<ul style="list-style-type: none"> <li>➤ Laundry or dry cleaner whose discharge is regulated under the Clean Water Act</li> </ul>	<ul style="list-style-type: none"> <li>➤ To a combustor regulated under the Clean Air Act or hazardous waste combustor; or</li> <li>➤ To a municipal solid waste landfill</li> </ul>





## *Solvent-Contaminated Wipes Recordkeeping*



Generators must maintain documentation that includes:

- Name & address of the laundry, dry cleaner, landfill, or combustor
- Documentation that the 180-day accumulation time limit is being met
- Description of the process the generator is using to meet the "No Free Liquids" condition



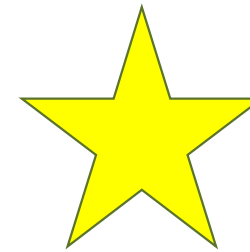


*Questions on Excluded Solvent Contaminated Wipes?*

# Optional Provisions

Episodic Generation Provision and  
Consolidation Provision





## Episodic Generation

For SQG: 40 CFR 262.16(f) and 40 CFR 262 Subpart L

For VSQG: 40 CFR 262.14(c) and 40 CFR 262 Subpart L





# *Episodic Generation*

## *40 CFR 262 Subpart L*



### *Generator Compliance Manual – Appendix M*

Allows SQG and VSQGs to maintain their existing generator category for HW generated during an episodic event provided specific conditions described in 40 CFR 262 Subpart L are met.



# *Episodic Generation*

## *40 CFR 262.231*



### **Episodic Event:**

An activity(ies) either planned or unplanned that:

- does not normally occur during generator operations, and
- results in an increase in the generation of HW that exceeds the calendar month quantity limits for the generator's usual category



# *Episodic Generation*

*40 CFR 262.231*



## **Planned Episodic Event:**

Episodic events that the generator planned and prepared for, including

- Regular maintenance,
- Tank cleanouts,
- Short-term projects, and
- Removal of excess chemical inventory



# *Episodic Generation*

*40 CFR 262.231*

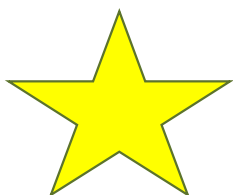


## **Unplanned Episodic Event:**

Episodic events that the generator did not plan or reasonably did not expect to occur, including

- Production process upsets,
- Product recalls,
- Accidental spills, or
- "Acts of nature" such as tornado, hurricane, flood, fire





## *Episodic Generation*

*40 CFR 262.231*



### Episodic Event is **NOT**:

- Increased production of hazardous waste due to an increased rate of production is not an episodic event.
- The episodic event does not begin when the facility receives its sampling results, and they show the waste is hazardous.



*An unplanned event is not because you did not plan to have hazardous waste. It is because the event is unplanned.*



# *Episodic Generation – Notification Requirements*

## *40 CFR 262.232*



- Generator must notify:
  - At least **30 calendar days** *prior to initiating a planned episodic event* (electronically using myRCRAid) or
  - Within **72 hours** *after an unplanned episodic event* (by phone, fax, email; then provide notification electronically using myRCRAid by the end to the event)
- Episodic event must be initiated and completed within **60 days** (there are no extensions to this timeframe)



# *Episodic Generation*

## *40 CFR 262 Subpart L*



- Limit of one episodic event per calendar year
- Or two events if a petition (40 CFR 262.333) is granted by HWS
  - If the generator already held a planned episodic event in the calendar year, the generator may only petition for an unplanned episodic event
  - If the generator already held an unplanned episodic event in the calendar year, the generator may only petition for a planned episodic event



# *Episodic Generation*

## *40 CFR 262 Subpart L*



- Generator must obtain an EPA ID number if they do not have one already, including VSQGs
- Pay the fee associated with the amount of hazardous waste generated per N.C.G.S. 130A-294.1
- Must ship episodic hazardous waste on a hazardous waste manifest (including VSQGs)





# *Episodic Generation*

## *40 CFR 262 Subpart L*



- Maintain records associated with the episodic event (keep 3 years)
  - Beginning and end dates of the episodic event
  - A description of the episodic event
  - A description of the types and quantities of HW generated during the event
  - A description of how the waste was managed and name of the TSD (recommend making a note on the HW manifest which waste was episodic)



# *Episodic Generation*

## *40 CFR 262 Subpart L*



### Requirements for VSQGs:

- **Obtain** an EPA ID number (if the site does not have one already)
- **Use** a hazardous waste manifest and transporter to send episodic waste to a TSDf or recycler
- **Manage** the episodic hazardous waste in a manner that minimizes the possibility of an accident or release
- **Label** episodic waste containers with "Episodic Hazardous Waste," an indication of the hazards, and the date the event began
- **Identify** an emergency coordinator
- **Maintain** records associated with the episodic event



# *Episodic Generation*

## *40 CFR 262 Subpart L*



SQGs need to **comply with existing SQG regulations** and maintain records associated with the episodic event

- **Label** episodic waste containers with "**Episodic Hazardous Waste,**" an indication of the hazards, and the date the event began



# Mark containers/tanks "Episodic Hazardous Waste"



**EPISODIC HAZARDOUS WASTE**

STATE AND FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL. IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL.

GENERATOR INFORMATION:

NAME \_\_\_\_\_ PHONE \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

EPA / MANIFEST ID NO. / DOCUMENT NO. \_\_\_\_\_  
 EPA CA ACCUMULATION WASTE NO. / WASTE NO. / START DATE \_\_\_\_\_

CONTENTS, COMPOSITION: \_\_\_\_\_

PHYSICAL STATE:  SOLID  LIQUID HAZARDOUS PROPERTIES:  FLAMMABLE  TOXIC  CORROSIVE  REACTIVITY  OTHER \_\_\_\_\_

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX \_\_\_\_\_

**HANDLE WITH CARE!**



**THIS CONTAINER ON HOLD PENDING ANALYSIS**

**ON HOLD**

CONTENTS Episodic Hazardous Waste  
Acid Waste (off-spec)

**Accumulation Start Date: 9/1/23**

ORIGIN OF MATERIALS Tank 7 Cleanout

ADDRESS 123 Main St., Small Town, NC

CONTACT John Smith 999-123-4567

**DO NOT TAMPER WITH CONTAINER! AUTHORIZED PERSONNEL ONLY.**



# *Episodic Event Case Study*

## *Anywhere Machine Works*

- Current Generator Category: VSQG
- No EPA ID Number
- Discontinuing the use of the electroplating lines
- Typically generates 10 pounds of sludges from electroplating (F006) and ~5 gallons of solvent waste in a calendar month through normal activities
- The electroplating chemicals are going to be shipped offsite for disposal



## *Planned Episodic Event Example Anywhere Machine Works*

Can Anywhere Machine Works become an episodic generator?

Is it an episodic event? **Yes**

Is it planned or unplanned? **Planned (Chemical Cleanout)**

How much waste will be generated?

Hydrochloric acid, sodium hydroxide, nitric acid =  
**7,000 pounds of acids and bases**

**Anywhere Machine Shop has a planned episodic event that will create a hazardous waste of more than the 220-pound limit in a calendar month allowed for VSQGs.**



## *Planned Episodic Event Example Anywhere Machine Works*

Can the time frames for notification and disposal be met?

Yes, Anywhere Machine Shop can notify 30 days before the start of the cleanout and have all excess inventory removed within the 60-day episodic event period.

Anywhere Machine Works needs to file a notification in RCRAInfo/8700-12 form ensuring to:

- Obtain an EPA ID number
- Mark Section 13 to notify of episodic generation

Comply with the 40 CFR 262 subpart L requirements for VSQGs  
(More on Notification and Episodic Requirements later)



## *Episodic Generator vs. Short Term Generator – Key Differences*

### Episodic Generator

- Site is required to have an EPA ID (can obtain one during episodic notification)
- Site typically generates hazardous waste at VSQG or SQG amounts
- Can be used one time a year (or twice if petitioned for a second event)
- Only must comply with applicable requirements specified in 40 CFR 262 subpart L
- Allows 60 days to complete event and remove waste (regardless of amount of HW generated in the episodic event)

### Short Term Generator

- Site typically does not already have an EPA ID number assigned (once assigned it stays with site)
- For sites that typically do not generate hazardous waste
- For one-time generation event. Short term generation may not be used again at the site (for the same business)
- All applicable generator requirements apply for the amount of hazardous waste generated
- Allows 90 days to remove waste for LQGs/180 days for SQGs.







*Questions on  
Episodic  
Generation?*



# Consolidation Provision

For LQGs: 40 CFR 262.17(f)

For VSQGs: 40 CFR 262.14(a)(5)(viii)



## Generator Compliance Manual – Appendix L

Allows a VSQG to transfer HW to a LQG for consolidation as long as both entities are under the control of the same person, provided specific conditions are met by both the VSQG and LQG

- "Person" defined in N.C.G.S. 130A – 290(a)(22)
- "Control" is defined in 40 CFR 262.17(f)



# *LQG Consolidation of VSQG HW*

## *40 CFR 262.17(f)*



- Notify the HWS (using the electronic 8700-12) of this activity at least **30** days prior to receiving the first shipment of VSQG HW
- Maintain paperwork for each shipment received from the VSQG including:
  - Name, site address and contact information for the VSQG(s),
  - Description of HW, quantity, and date received
- Manages waste received by LQG rules
- Reports VSQG waste on biennial report



# *LQG Consolidation of VSQG HW*

## *40 CFR 262.14(a)(5)(viii)*



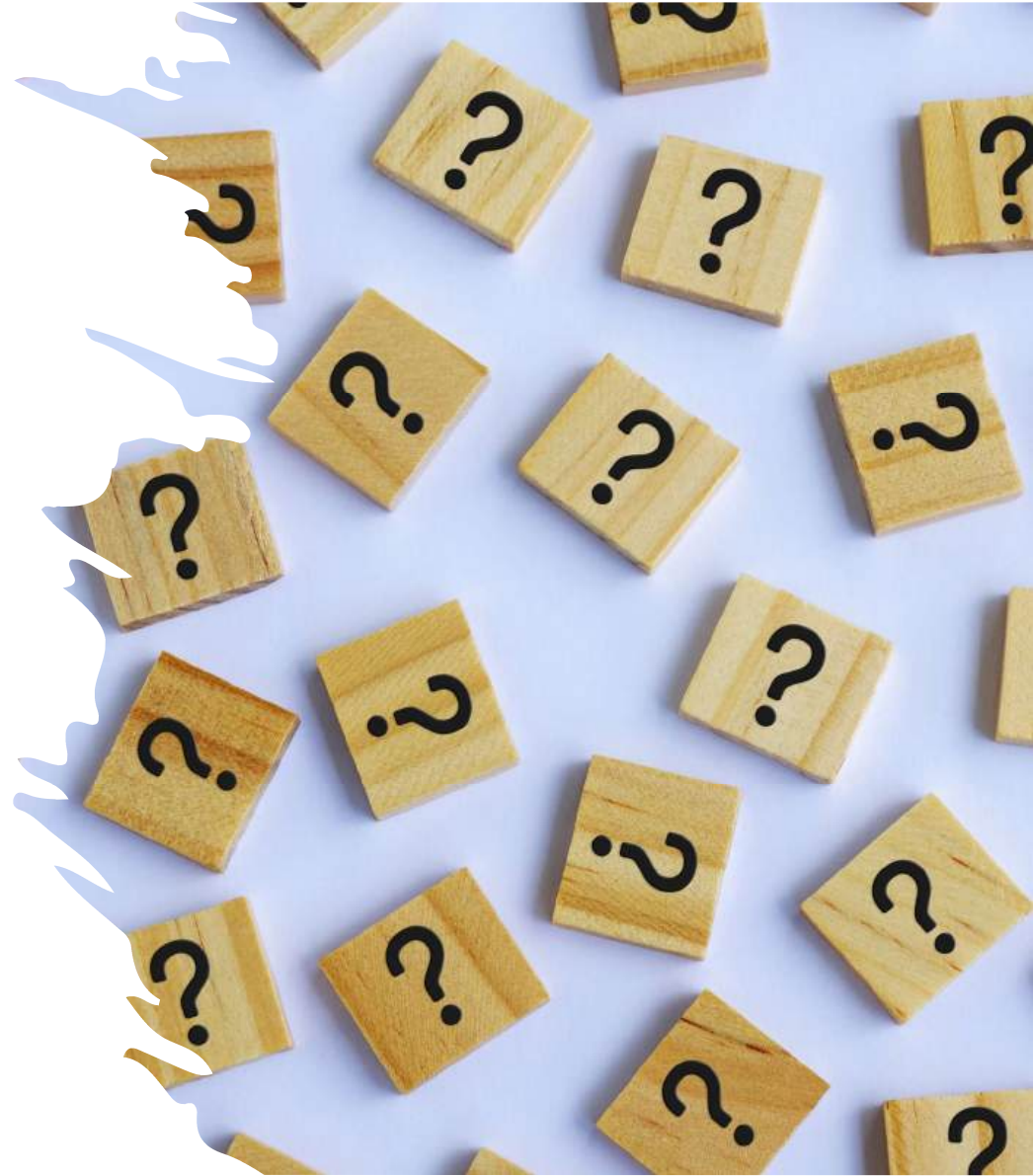
### Requirements for the VSQG:

Label containers being transferred to the LQG (under the control of the same person) with specific wording:

- "Hazardous Waste"; **and**
- Indication of the hazards of the contents of the container



*Questions on  
Consolidation?*



# Introduction to Container Management



# *HW Accumulation Units*

*40 CFR 262.16/262.17*



Generators are allowed to use certain types of units:

## Most common

- Tanks
- Containers

## Not as common

- Drip pads
- Containment buildings



*Satellite Accumulation Area*  
*40 CFR 262.15*  
*Generator Compliance Manual – Page 122-124*



Is an “area” with a container(s) of hazardous waste that:

- Area where waste initially accumulates prior to removal to a central area (***“at or near the point of generation”***); and is,
- **“under control of the operator”** of the process that generated the waste



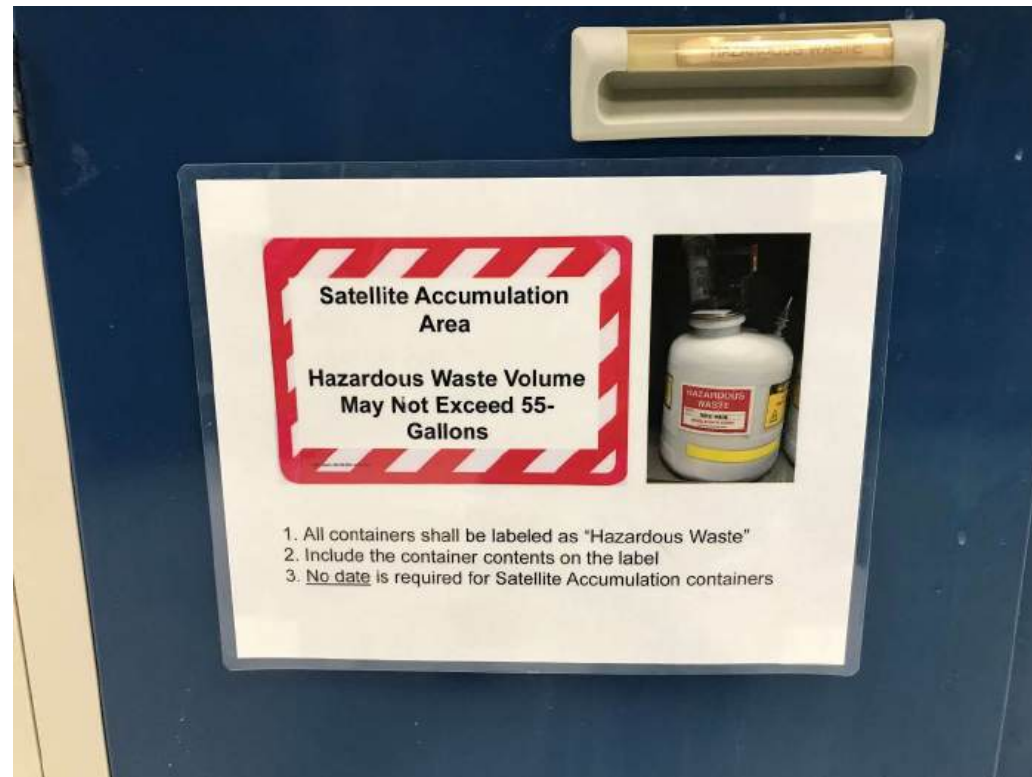


*Satellite Accumulation Area*  
*40 CFR 262.15*  
*Generator Compliance Manual – Page 122-124*



A SAA cannot have more than 55 gallons of hazardous waste

*More on the next slide...*



# Satellite Accumulation Areas

(40 CFR 262.15)



*SAA cannot exceed 55 gallons of waste*

FAQs:

- A SAA can have multiple containers
- A SAA can have multiple waste types,
- If 55 gallons of waste is exceeded, you must:
  - Date the excess waste, and
  - Move the excess waste to a CAA within 72 hours



# Satellite Accumulation Areas

(40 CFR 262.15)



## FAQs about SAAs:

- A facility is not limited to how many SAA they can have.
- SAA waste can only be consolidated in containers:
  - within the same SAA, or
  - a CAA container.

*Moving waste from one SAA container to a different SAA container is NOT allowed*



# Central Accumulation Areas

(40 CFR 262.16/262.17)

Generator Compliance Manual – Page 125-127



Any on-site hazardous waste accumulation area with units [containers/tanks] subject to 262.16/17

- A generator can have more than one CAA.
- “Central” does not denote a physical location
- CAA(s) can be in any location of the facility.
- CAA containers can be moved from one CAA to another CAA (but cannot redate)



NORTH CAROLINA  
Department of Environmental Quality



# Container Management Requirements

## SAA vs. CAA

40 CFR 262.15 (SAA)/40 CFR 262.16/262.17 (CAA)

Requirement	Satellite Accumulation Area (SAA) Units	180/270/90-day containers (CAA)
Must be in good condition	Yes	Yes
Must be compatible with HW in container	Yes	Yes
Must be closed at all times except when adding/removing waste	Yes (can also open to consolidate waste or venting)	Yes
Hazard marking	“Hazardous Waste” and indication of hazards	“Hazardous Waste” and indication of hazards
Date marking	On the date 55 gallons of non-acute HW is exceeded	On the date waste first goes in the container
Weekly Inspections	None	Weekly



# Container Management, continued

## Satellite Accumulation Area vs. Central Accumulation

Requirement	Satellite Accumulation Area (SAA) Units	180/270/90-day containers (CAA)
Maximum length of accumulation	Unlimited	180/270 days – SQGs 90 days – LQGs
Maximum waste volume in storage	55 gallons (or 1 quart of acute wastes)	13,200 pounds of HW in all CAAs for SQGs/ Unlimited LQG
Personnel training required	No (but maybe yes)	Yes
Can treat hazardous waste in unit	No	Yes
Must comply with Subpart CC air emission standards	No	Yes (LQGs only)
Comply with preparedness, prevention, and emergency procedures	Yes	Yes



# Container Management

## SAA and CAAs



- Must be clearly marked
  - “Hazardous Waste” (SAA/CAA);
  - with an indication of the hazards of the contents (SAA/CAA); and
  - the date upon which each 180-day/270-day/90-day accumulation period begins (CAA) “*accumulation start date*”



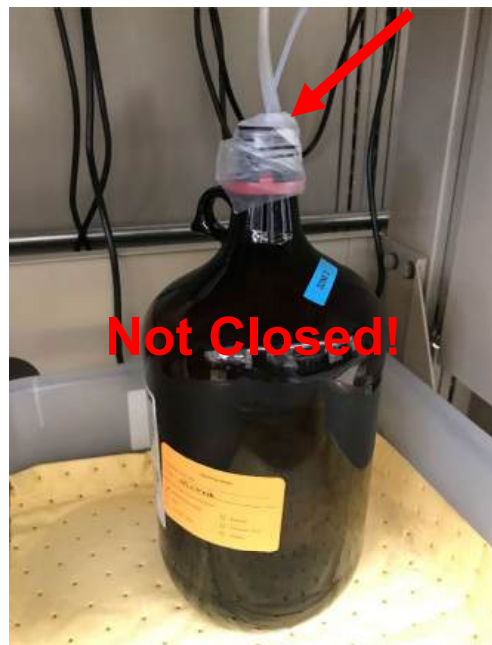
# Container Management

## SAA and CAA

SQG  
 LQG

Both SAA and CAA containers:

- Must be in good condition
- Must be compatible with contents
- Must be closed (unless actively adding or removing waste)





# Container Management

## SAA and CAA

SQG  
 LQG




Both SAA and CAA containers:

- Waste must be kept inside the container
- Clean up spills immediately



# Hazard Indication Guide for Marking HW Containers

Methods to indicate the hazards of the contents of a container include, but are not limited to the following:

The applicable hazardous waste characteristic(s) marked on the container or on a label on the container	Ignitable, Corrosive, Reactive, Toxic
Department of Transportation labels or placards at 49 CFR part 172 subpart E	
Hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200	
Chemical hazard label consistent with the National Fire Protection Association code 704.	

- Requirement from the Hazardous Waste Generator Improvements Rule (2018)
- All HW containers (SAA and CAA) must be marked with an indication of the hazards of the contents of the container.

SQG  
 LQG



## *Examples of Labels that Indicate the "Hazards"*

There are 9 DOT hazard classes. Hazard communication consistent with DOT (49 CFR part 172 Subpart E – Labeling or Subpart F – Placarding)



DOT Class 9 label added to EPA's Implementation Questions page for the Generator Rule:  
<https://www.epa.gov/hwgenerators/frequent-questions-about-implementing-hazardous-waste-generator-improvements-final#marking>



## *Conflicts using of RCRA Labels and DOT Labels*



### **F005 – Spent non-halogenated solvent**

- RCRA requires both an Ignitable and Toxic Indications
- RCRA requires indication for all hazards
- DOT may require Class 3 or Class 3 & 9



## *Examples of Labels that Indicate the "Hazards"*

Hazard statement or pictogram consistent with OSHA (29 CFR 1910.1200)

Ex. Globally Harmonized System (GHS)

Acute Toxicity – *harmful*

Toxic – *fatal*

Corrosive

Flammable

Self-Reactive



## *Examples of Labels that Indicate the "Hazards"*

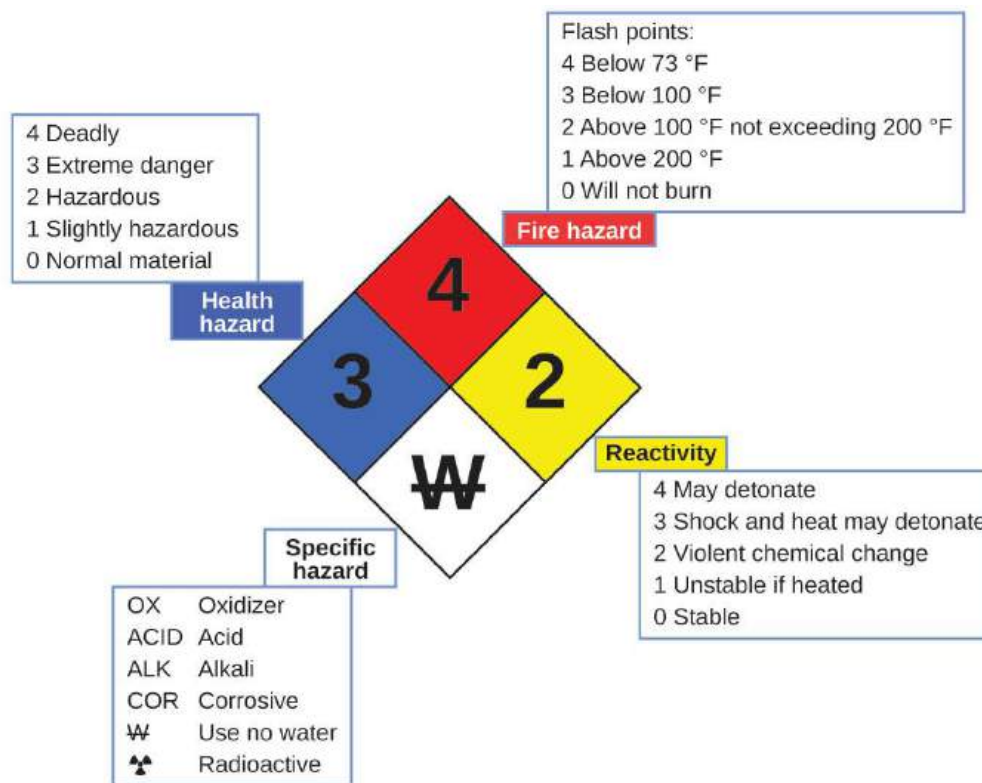
Hazard statement or pictogram consistent with OSHA (29 CFR 1910.1200)

Ex. Globally Harmonized System (GHS)



## *Examples of Labels that Indicate the "Hazards"*

Chemical hazard label consistent with the National Fire Protection Association code 704





It's ok to “mix and match” different ways to indicate the hazards, but they should be applicable to the waste inside.

U.S. D.O.T. SHIPPING DESCRIPTION

HAZARD CLASS

**HAZARDOUS WASTE**  
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL  
IF FOUND, CONTACT THE NEAREST POLICE, OR  
PUBLIC SAFETY AUTHORITY, OR THE  
U.S. ENVIRONMENTAL PROTECTION AGENCY

**CAUTION**

MANIFEST TRACKING #	ACCUMULATION START DATE	
ADDRESS		
CITY		
STATE	ZIP	
CONTAINER'S EPA IDENTIFICATION NUMBER	EPA HAZARDOUS WASTE CODE	
WASTE CODE		
PROPERLY	DESCRIPTION	QUANTITY CONTAINED

CONTAINS HAZARDOUS OR TOXIC WASTE

HAZARDOUS WASTE COMMITMENTS PART 2 (REQUIREMENT) (Rev. 1)

Using the hazardous waste label statement “contains hazardous or Toxic wastes is not adequate for the indication of the hazard “toxic”





# *Improper Container Management*



## Containers “Must be Closed”



Locking  
Mechanism

*Containers “Must be in Good Condition”*



# Containers “Must be Compatible with Contents”



# Container Management

## SAA and CAA



### A Note About Palletized Hazardous Waste

- Each container must be clearly marked HW, etc. (can't have one label on a shrink-wrapped pallet of HW)
- Would also have an issue with aisle space on inner containers



# Container Management

## SAA and CAA



*AFTER* – Photo showing the waste in a proper container.

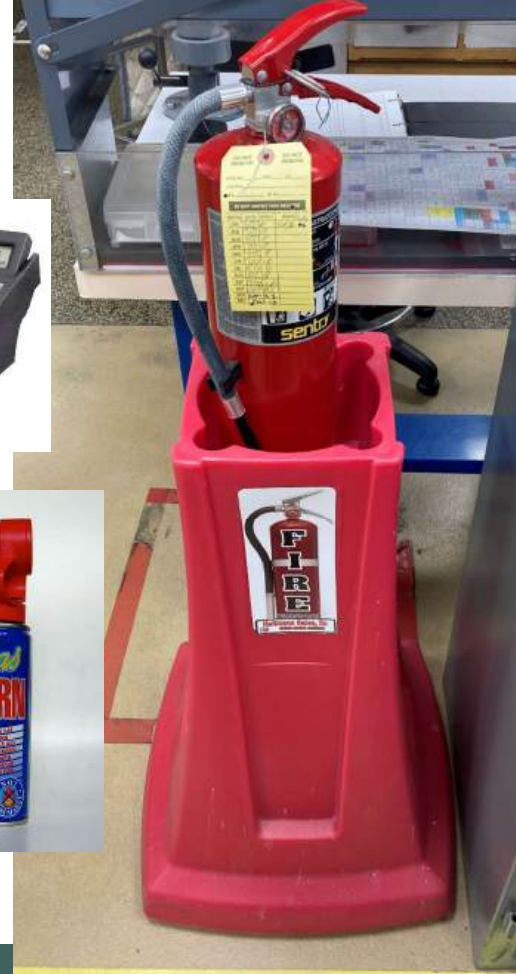


# Emergency, Preparedness, & Prevention Generator Compliance Manual – Page 127-128

SQG  
 LQG

## SAA and CAAs:

- Access to Communications or Alarm
- Required Aisle Space



# CAA Inspection Records – Containers



At least weekly, the generator must inspect Central Accumulation Areas (CAAs) looking for leaking containers and deterioration of containers caused by corrosion.

Inspections **cannot exceed 7 days** from the previous inspection.





# Weekly Inspection Form Example

## Generator Compliance Manual – Pages 100-101



SAMPLE Weekly Inspection Records

HAZARDOUS WASTE CENTRAL ACCUMULATION AREA - WEEKLY INSPECTIONS					
Month:	Date:	Date:	Date:	Date:	Date:
Central Accumulation Area:	Inspector:	Inspector:	Inspector:	Inspector:	Inspector:
Containers are not leaking and in good condition (No corrosion, dents, deterioration, etc.):					
Containers Closed:					
Containers Labeled: (including hazardous characteristics)					
Containers Dated:					
Oldest Accumulation Start Date:					
Number of Hazardous Waste Containers:					
Spills on Outside of Containers:					
Proper Aisle Space (minimum of 2 ft is required):					
Emergency Equipment (Fire Extinguisher, Spill Kit, Communication Device, Water Sprinklers etc.):					
<b>Notes/Corrective Actions:</b>					
Y= Yes; N=No; NA= Not Applicable					

- Weekly inspections conducted and documented in Central Accumulation Areas



# Aisle Space



Good aisle space!



- Must be maintained to allow unobstructed movement of personnel, fire protection equipment, spill equipment, etc.
- CAAs in North Carolina must have 2 feet of aisle space
- Also required in SAAs (*but not specific distance*)



# Aisle Space

Good aisle space!



# Potential Aisle Space Issues in Shelving Systems

Drums behind the front facing ones on shelves 2 & 3 are an aisle space violation.



- 2-foot of aisle space is required for CAA units.
- Shelving/racking systems can be challenging when more than 2 shelves high.
- Discuss with your inspector if you have site-specific questions.



## *Empty Containers Holding Non-Acute HW (40 CFR 261.7) – Generator Compliance Manual Page 28*

A **non-acute hazardous waste** container is empty if:

- 1) All wastes have been removed using practices commonly employed practices (e.g. pouring, pumping, or aspirating); **and**
- 2) No more than 1 inch of residue remains in the container; or
  - Containers < 119 gallons - No more than 3% by weight
  - Container over >119 gallons - No more than 0.3% by weight

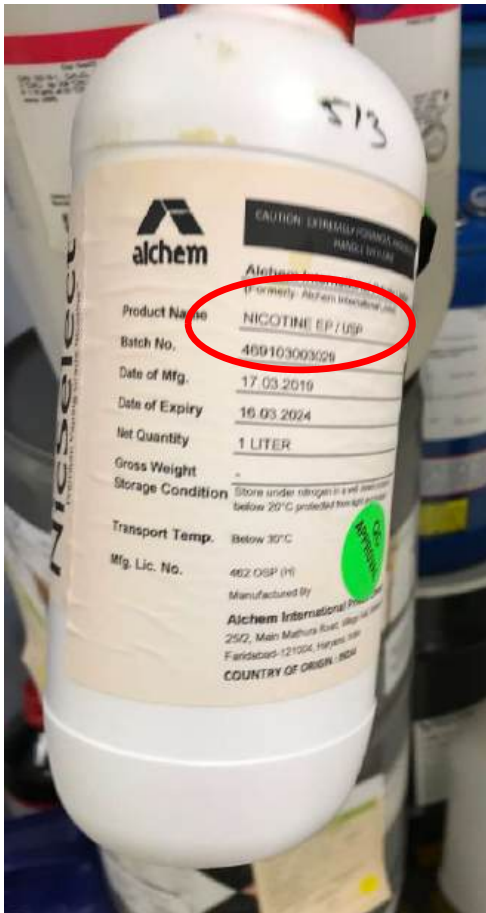


# Empty Containers Holding Acute HW (40 CFR 262.11(a)(2)) - Generator Compliance Manual Page 28



A container or inner liner removed from a container that has held an **acute hazardous waste** is empty if:

- The container or inner liner has been **triple-rinsed** using a solvent capable of removing the chemical product.



*Questions?*



**Andrea Stermer**  
Environmental Specialist II

**Hazardous Waste Section**  
**Division of Waste Management**

**[Andrea.Stermer@deq.nc.gov](mailto:Andrea.Stermer@deq.nc.gov)**  
**919-270-3871**





# Facility Inspection Walkthrough





# Jack Kitchen

Environmental Specialist II / Inspector

**Hazardous Waste Section  
Division of Waste Management**

[Jack.Kitchen@ncdenr.gov](mailto:Jack.Kitchen@ncdenr.gov)

**919-219-0402**



# Rose Pruitt

Environmental Specialist II / Inspector

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**919-270-3476**



<https://kahoot.it>

Game PIN

XXXXXXXX



# *Physical Walk Through Inspection*

Areas of inspection:

- Points of Hazardous Waste Generation & Operators
- Satellite Accumulation Areas (SAA)
- Aerosol Can Puncture System (SAA)
- Central Accumulation Areas (CAA)
- Used Oil
- Universal Waste



# *Physical Walk Through Inspection*

Your Inspector may also look at:

- Non-Hazardous / Non-RCRA Regulated Waste
- Hazardous Secondary Materials
- Excluded Solvent Contaminated Wipes
- Recycled Material\*
- E-Waste
- Hazardous Waste Tanks
- Wastewater Treatment
- General Facility Condition
- Maintenance Areas
- Exterior Areas and Outbuildings



# Marking and Labeling



# *Marking and Labeling*



## Central Accumulation Area Containers

- SQG marking/labeling requirement - 262.16(b)(6)
- LQG marking/labeling requirement - 262.17(a)(5)

## Satellite Accumulation Containers

- SQG & LQG marking/labeling requirement –262.15(a)(5)



# Marking and Labeling



- Requires SQGs and LQGs to label HW containers (satellite and central accumulation) and tanks with the following:
  - “Hazardous Waste”; and
  - Indication of the hazards of the contents
    - See next slides for examples
  - Applicable hazardous waste code(s) (required prior to shipping only)



# *Marking and Labeling*



Indication of the hazards of the contents

Examples include, but are not limited to:

- Applicable HW Characteristics
  - i.e. "Ignitable", "Corrosive", "Reactive", "Toxic"
- Hazard Communication consistent with DOT requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding)
- Hazard statement or pictogram consistent with OSHA Hazard Communication Standard 29 CFR 1910.1200
- Chemical hazard label consistent with the National Fire Protection Association code 704



# Examples of Labels that indicate the “Hazards”

The applicable hazardous waste characteristic (i.e., **ignitable, corrosive, reactive, toxic**):



**HAZARDOUS WASTE**

STATE AND FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL  
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY  
AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR  
THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

GENERATOR INFORMATION:  
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_ PHONE \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
EPA / MANIFEST  
ID NO. / DOCUMENT NO. \_\_\_\_\_  
EPA CA ACCUMULATION  
WASTE NO. \_\_\_\_\_ WASTE NO. \_\_\_\_\_ START DATE \_\_\_\_\_  
CONTENTS COMPOSITION: \_\_\_\_\_

PHYSICAL STATE:	HAZARDOUS PROPERTIES:	<input type="checkbox"/> FLAMMABLE	<input type="checkbox"/> TOXIC
<input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID	<input type="checkbox"/> CORROSIVE <input type="checkbox"/> REACTIVITY	<input type="checkbox"/> OTHER _____	

\_\_\_\_\_

\_\_\_\_\_

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

**HANDLE WITH CARE!**



## *Examples of Labels that indicate the “Hazards”*

There are 9 DOT hazard classes. Hazard communication consistent with DOT (49 CFR part 172 Subpart E – Labeling or Subpart F – Placarding)



**Explosives**



**Gases**



**Flammable  
Liquids**



**Flammable  
Solids**



**Oxidizers and  
Organic Peroxides**



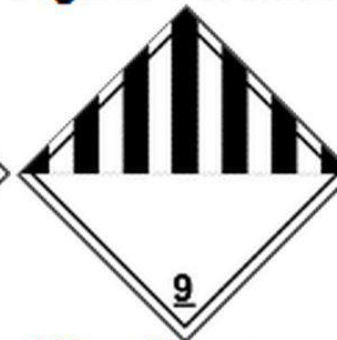
**Poison and  
Infectious Substances**



**Radioactive**



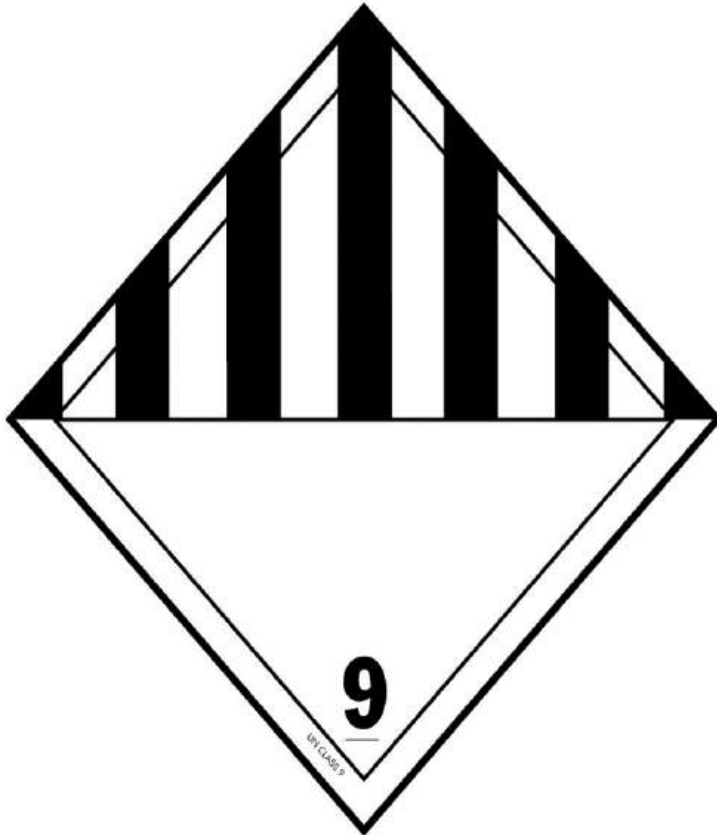
**Corrosive**



**Miscellaneous**

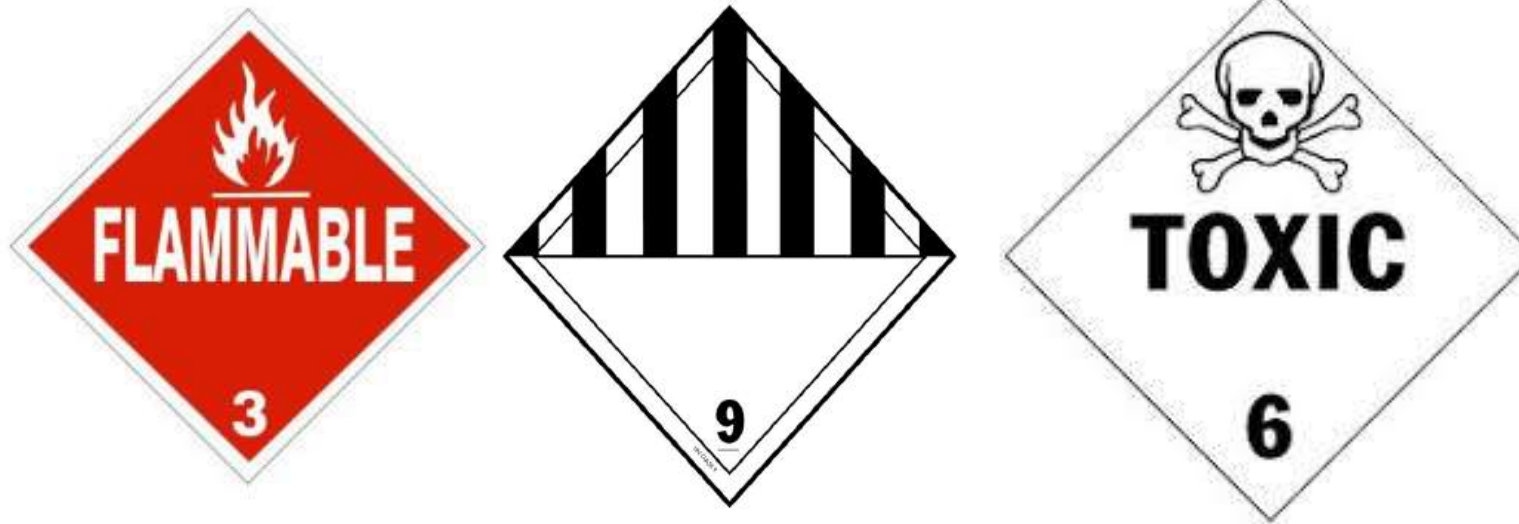
*Example of a Label that does not indicate the “Hazards”*

DOT Class 9 miscellaneous dangerous goods.



- Not enough info to describe the hazards. Only that it doesn't meet the other 8 DOT classes.
- Use only with another descriptive term on the container.

# *Conflicts using of RCRA Labels and DOT Labels”*



## **F005 – Spent non-halogenated solvent**

- RCRA requires both an Ignitable and Toxic Indications
- RCRA requires indication for all hazards
- DOT may require Class 3 or Class 3 & 9

*Examples of Labels that indicate the “Hazards”:*

Hazard statement or pictogram consistent with OSHA (29 CFR 1910.1200). Ex. Globally harmonized system (GHS)

Acute Toxicity – *harmful*

Toxic – *fatal*

Corrosive

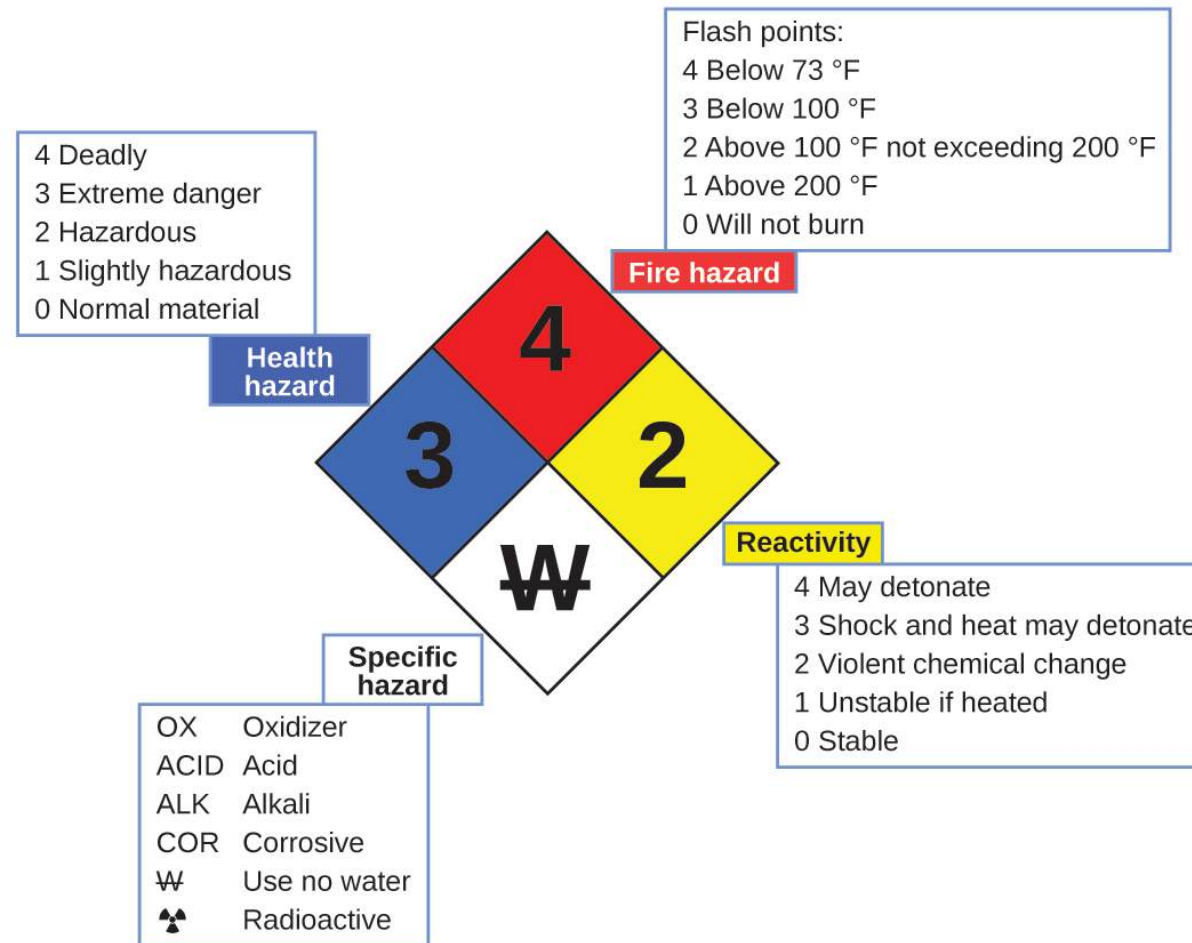
Flammable

Self-Reactive



# Examples of Labels that indicate the “Hazards”

Chemical hazard label consistent with the National Fire Protection Association code 704



# Prior to Transporting, must meet the 262.32 Marking Requirements

Must have specific statement

Generator's Name, Address, and EPA ID Number

Manifest Tracking Number

EPA HW Numbers

**HAZARDOUS WASTE**

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL.  
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY  
AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

GENERATOR INFORMATION:

NAME Generic College  
ADDRESS 123 College Street PHONE (800)123-4567  
CITY College Town STATE CT ZIP 06032  
MANIFEST TRACKING NO. 123456789ABC ACCUMULATION START DATE 12/10/2007  
EPA ID NO. CTD000123456 EPA WASTE NO. D002

Waste Corrosive Liquids, N.O.S., 8, UN 1760, III (Sulfuric Acid, Hydrochloric Acid)

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

**HANDLE WITH CARE!**

STYLE WMS

LABELMASTER® (800) 821-5808 www.labelmaster.com





# *Marking and Labeling Clarifications*



- Labeling/marketing must occur at the initial point of generation
- For containers that have small containers inside (e.g., tubes, vials, etc.), generators can mark the outer/secondary container or attach a tag with the required information
- For containers that already have appropriate marking and labeling (e.g., a Commercial Chemical Product in its original container with an intact label), the existing marking and labeling is sufficient, provided it indicates the hazards of the chemical and the words “Hazardous Waste” are added



# *Small Hazardous Waste Container Management*



Before

# *Small Hazardous Waste Container Management*



*After*

# *“Unknown Waste”*

*Use Proper Labels or Marking  
“Hazardous Waste Pending Analysis”*



# *Solvent contaminated wipes exclusion*

40 CFR 261.4(a)(26) & 40 CFR 261.4(b)(18)





# *Episodic Hazardous Provision Condition*



**EPISODIC**

**HAZARDOUS WASTE**

FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL.

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

GENERATOR INFORMATION:

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

EPA ID NO. \_\_\_\_\_ EPA WASTE NO. \_\_\_\_\_

ACCUMULATION START DATE \_\_\_\_\_ MANIFEST TRACKING NO. \_\_\_\_\_

[ \_\_\_\_\_ ]

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

**HANDLE WITH CARE!**

# Satellite Accumulation Areas (SAA)





# *Purpose of the Satellite Rules:* *(40 CFR 262.15)*

- Give generators a break on the 90-day (180-day) rules to avoid shipping partially filled containers.
- Meant for slowly generated waste streams or small quantities of hazardous waste being generated.
- You can have as many as you want, BUT each must be managed properly by the following rules:



# *Satellite Accumulation Areas must be:*



- At or near the point of generation
- Under the control of the operator
- No more than 55 gallons of (total) waste or 2.2 lbs. / 1 quart of acute hazardous waste
- Closed unless adding or removing waste
- Waste must be accumulated inside containers
- Labeled with the words “Hazardous Waste”
- Labeled to identify the hazards of the contents
- Once filled, you must date the container and move to the central accumulation area within 3-days



## *Additional Items Inspected in SAAs*

- Funnels
- Evidence of releases on containers &/or adjacent area (floor, walls)
- Containers that are in poor condition / corrosion
- Emergency preparedness
- Aisle Space



## *At or near the point of generation*

- Satellite Accumulation Areas at or near the point of generation and under the control of the operators generating the waste.



*No more than 55-gallons of waste (total)  
per Satellite Accumulation Area*



# *Closed Containers*

Ask yourself, “If the container was to fall over, would it leak?”  
If your answer is “yes,” then the container remains open.



*Containers are closed when they are leak proof and vapor tight.*

**Gaskets can ensure a closed container**



- Drum must be sealed and dated.
- Do not discharge uncontrolled flammable materials to the environment.
- Electrically grounded.

# ***FUNNELS***

*Ensure that the funnel is:*

- *Securely fitted to the container.*
- *Equipped with a gasket*  
*OR*
- *Has a one way valve*







*Open Container (Funnel not attached to the container)*

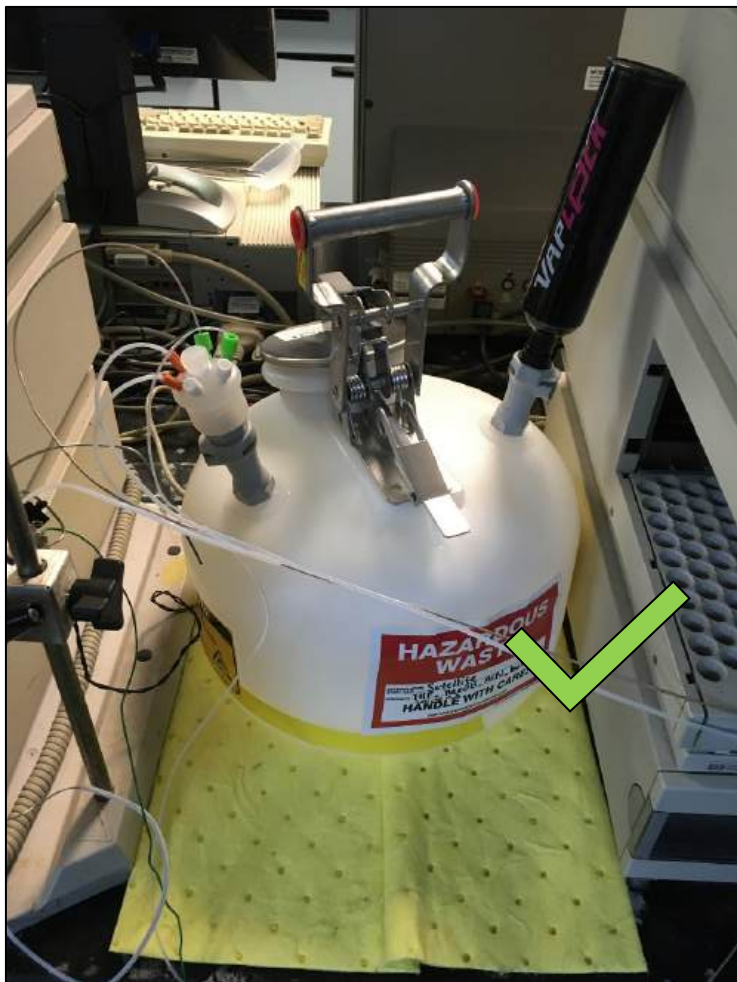


*Containers NOT closed*

## *Lids designed to ensure a closed drum*



# *Closed except when adding wastes*





## *Evidence of Releases*

# *Discharges of Hazardous Waste*

## *Disposal (as defined in RCRA):*

- The **discharge**, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that any constituent thereof may enter the environment or be emitted into the air or discharge into any waters, including groundwater.
- Therefore, a **release to the environment** is a **discharge** of hazardous waste and is the same as **disposal** of hazardous waste.



# *Simply put:*

A RELEASE or SPILL is inside your facility or containment area.

A DISCHARGE is outside to the environment.



# *Releases & Discharges of Hazardous Waste*

If you have a release of a container on the floor, wall, etc., clean it up immediately!

If you have a discharge to the land or water:

- Use your Contingency Plan.
- Contact the Department immediately.
- Follow other emergency notification procedures.





# *Aerosol Puncturing Device Satellite Accumulation Areas*



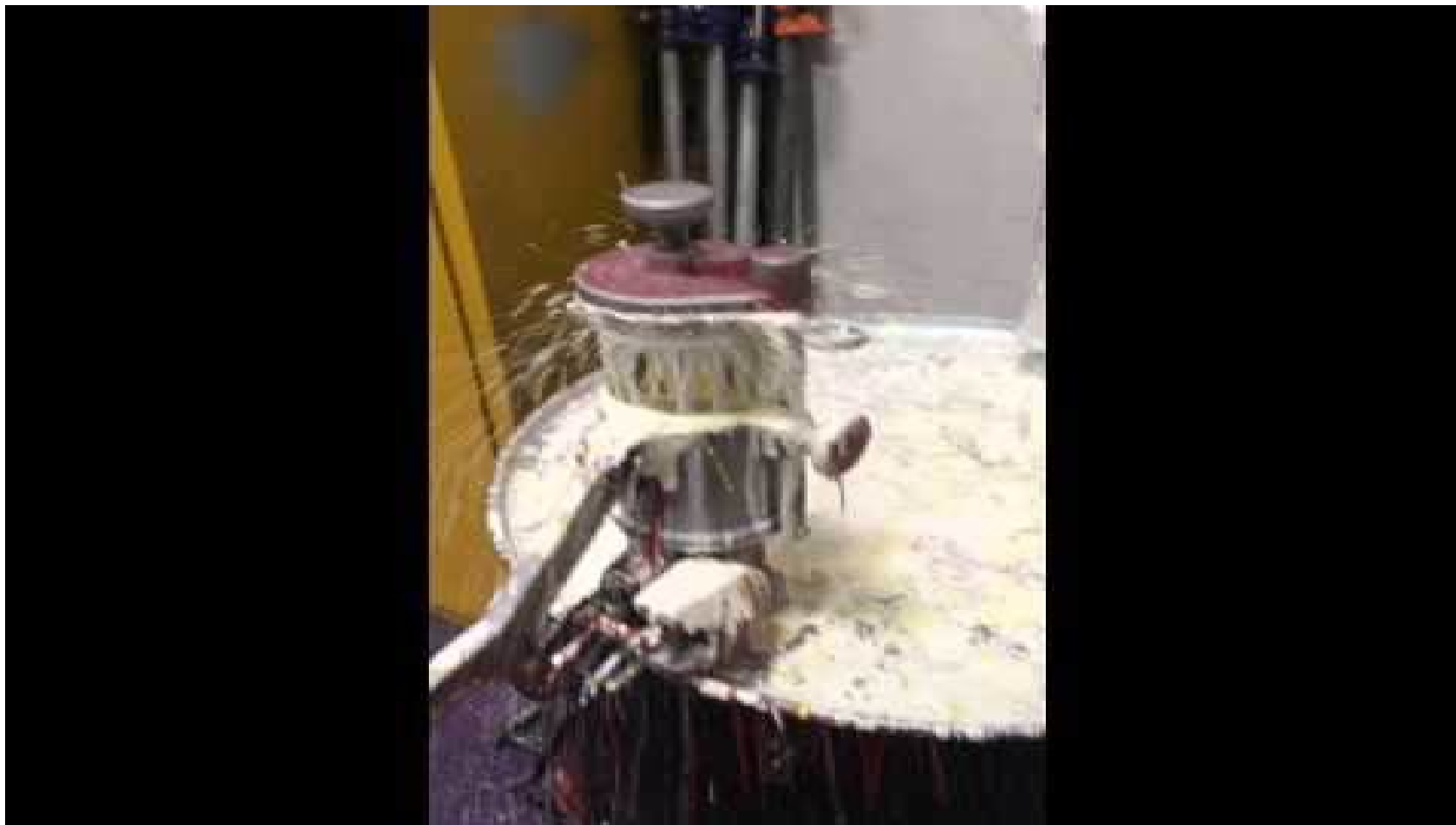
# *Alternative Puncturing Devices*



# *Aerosol Puncturing Device*



# *Some Training Required*



# *Home Made Can Puncture Station*



# *Hazardous Waste (CAA) Requirements*

Hazardous waste may accumulate hazardous waste, on-site, in a central accumulation area(s) for not more than 90 days for LQG and 180 days for SQG provided the following requirements are met:

- Hazardous waste must be placed inside the hazardous waste container. All spills/releases must be responded to immediately and appropriately.
- Containers must be closed unless it is necessary to add or remove waste.
- Container holding hazardous waste must not be opened, handled, or accumulated in a manner that may rupture the container or cause it to leak.
- Containers in a CAA must be marked/labeled with the words “Hazardous Waste”, an indication of the hazards of the contents of the containers and marked with an accumulation start date.
- Incompatible wastes must be separated from other incompatible waste
- Emergency preparedness



# *Additional CAA Requirements*

Accumulation of hazardous waste in tanks (40 CFR 262.17(a)(2)): must comply with 40 CFR 265 Subpart J except § 265.197(c) of Closure and post-closure care and § 265.200 – Waste analysis and trial tests, as well as the applicable requirements of 40 CFR 265 subparts AA, BB, and CC; and/or

Comply with the applicable regulations for hazardous waste air emissions, when applicable:

- ✓ 40 CFR 265 Subpart AA for air emission standards for process vents, (**Tanks**)
- ✓ 40 CFR 265 Subpart BB for air emission standards for equipment leaks, and/or (**Tanks**)
- ✓ 40 CFR 265 Subpart CC for air emission standards for **containers**, tanks, surface impoundments and containers

Containers of ignitable or reactive waste must be located at least 50 feet from the facility's property line unless a waiver has been received from the local authority having jurisdiction over the fire code to accumulate these wastes less than 50 feet from the facility's property line.



- *Hazardous waste must be compatible with container being used.*
- *Containers must not be accumulated in a manner that may cause a leak.*
- *Spills and releases must be addressed immediately.*





# *Separate Incompatible Hazardous Waste*

Use secondary containment berms or pallets



# *Labels must be visible for inspection*



# *Preparedness & Prevention Requirements*

- Operate in a manner to prevent releases
- Adequate alarms to alert personnel if evacuation needed
- Adequate communications to summon outside emergency assistance
- Spill Kits and emergency response equipment
- Adequate Fire Suppression
- Adequate aisle space between containers. At least two feet of aisle space is required at central accumulation areas
- Access to alarms by employees
- Maintenance of emergency equipment



# *Emergency Preparedness and Prevention*



- *Emergency communication (e.g. telephone, cell phone, radio, alarm or buddy system)*
- *Fire Control Equipment*
- *Spill Control Equipment*
- *No Smoking Sign\**



# *Aisle Space Requirements*

*Remember any size container must be 24" apart*



*and ALL labels must be visible*



*Help your people  
keep it inside the  
lines!*



## *Funnels in Central Accumulation 40 CFR 265 Subpart CC Air Emissions Standards*

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Funnels used with waste >500ppm  
VOC's must prohibit emissions by being:

- Securely fitted to the container
- A lid fitted with a gasket OR
- Equipped with a one-way valve

*If these requirements are not met, then the  
container is considered OPEN.*



*Containers holding ignitable or reactive waste must be located at least 50 feet from property line\**







# *Hazardous Waste Tanks*



# *Used Oil Management*

*40 CFR 279.22*

*If you generate used oil, you must:*

- Store in containers and/or tanks in good condition
- Label “Used Oil”
- Use a transporter with an EPA ID number
- Respond to releases



# *Universal Waste Accumulation*

## *40 CFR 273*

- Used Batteries (Lithium Ion/NiCad)
- Used Lamps Containing Mercury
- Mercury Containing Devices
- Pesticides - not under FIFRA





*Your inspector will want to see  
Maintenance Areas  
&  
“Bone Yards”  
looking for.....*



# *Abandoned and /or Surplus Materials*





*Quiz Time!*  
*Are you ready for*  
*your inspection?*

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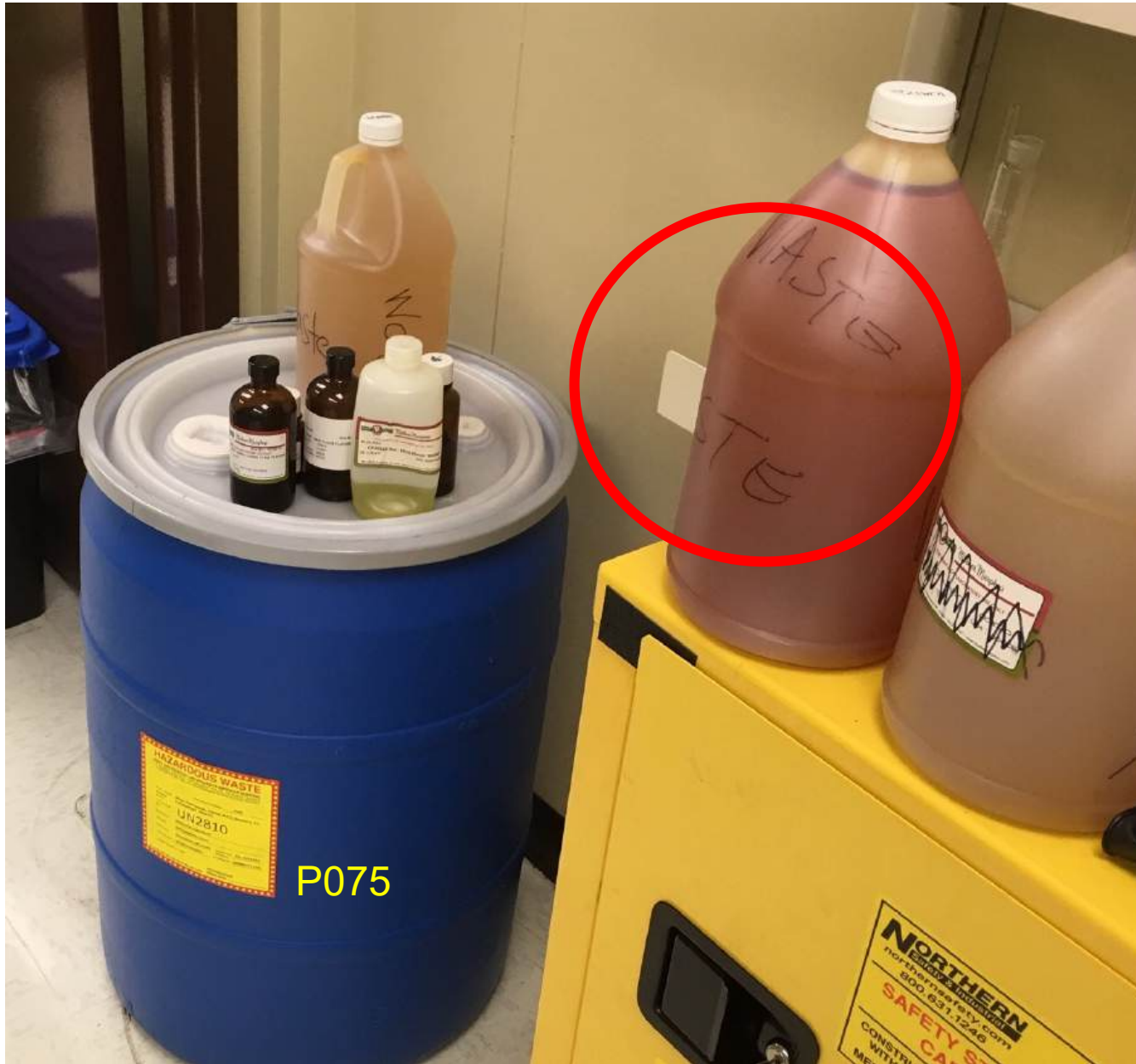
# Quiz #1



Labels not visible. Inadequate aisle spacing

Containers not marked with an indication of the Hazards of the contents.

Possibly exceeding 55-gallons in a SAA.

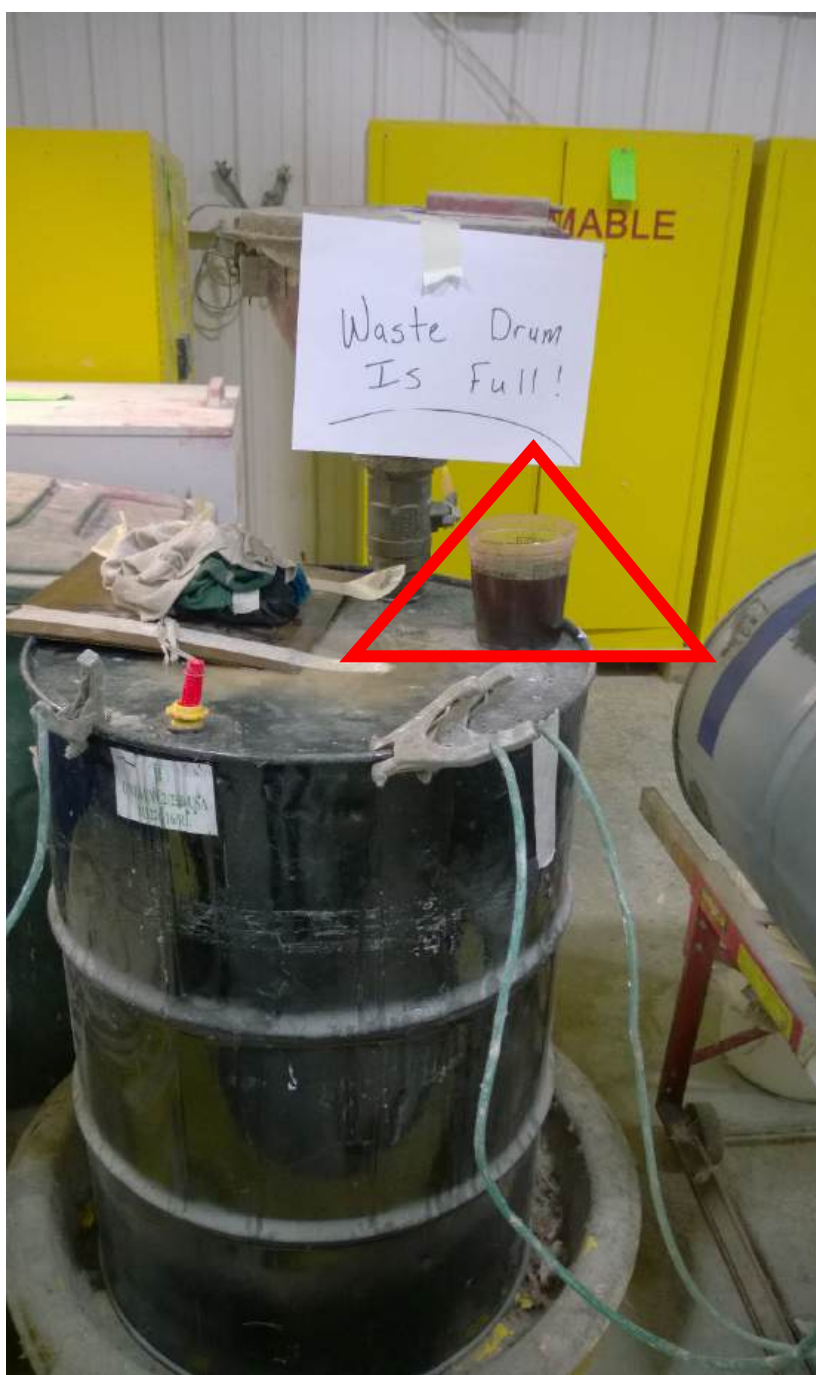


Improperly labeled containers.

Not at or near the point of generation.

Exceeding 1 quart of acute HW at SAA;  
*Therefore, in violation of all CAA requirements.*





Open containers

Not labeled properly

Exceeding 55 gallons at SAA; therefore in violation of all CAA requirements



#4

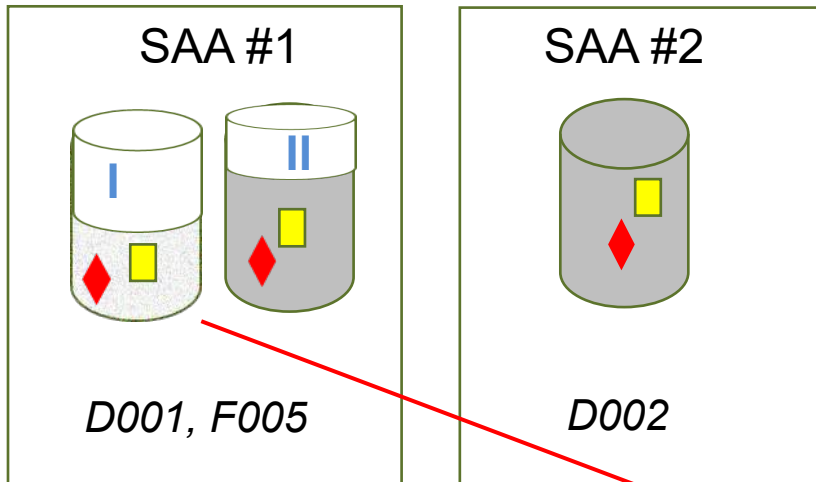
- Open container
- Not marked with the words “hazardous waste”
- Not marked with an indication of the hazards



Waste not in a container / release

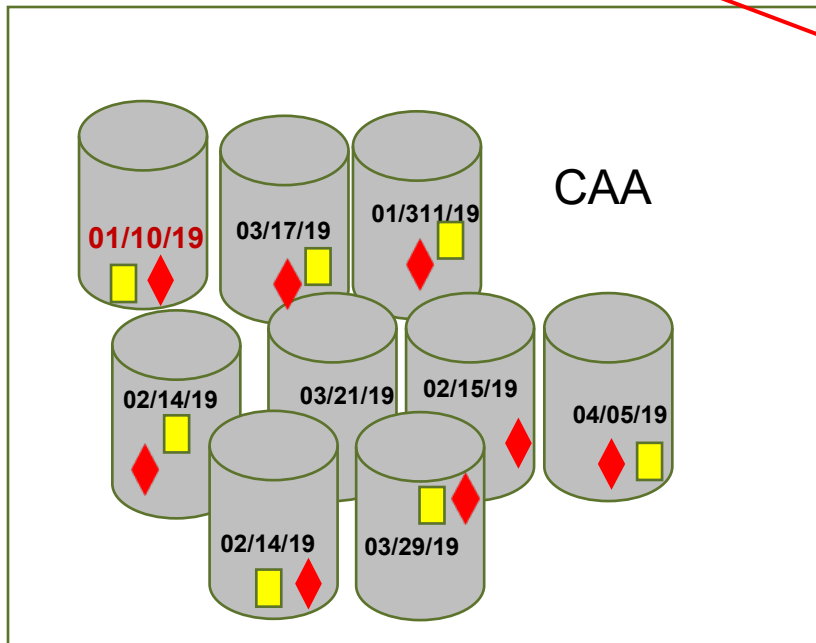
Open container

Container not labeled properly



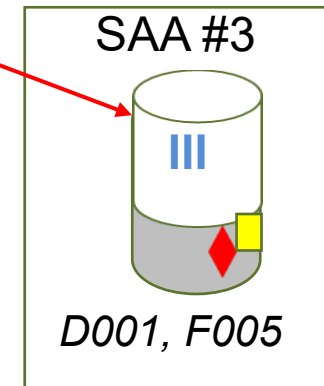
On April 12, 2019, an employee noticed 65 gallons of HW accumulated in SAA #1, since April 8<sup>th</sup>. An employee that received RCRA training on April 1, 2017, remembered that there is typical only one 55-gallon drum in each of the SAAs. The employee consolidated the contents of container I (25 gallons) from SAA #1 to container III in SAA #3.

Another employee typically responsible for weekly inspections of the CAA was on leave since March 27<sup>th</sup>. No weekly inspections were conducted in April.



All containers in the CAA, SAAs #1, #2 & #3 were marked with the words “hazardous waste” and were labeled with a single DOT flammable placard. All containers were closed and marked with an accumulation start date.

Which violations have occurred?



## #6

1. Exceeding 55-gallons in a CAA for more than 3 days. *Violations for CAA requirements would be cited.*
2. Moving waste from Satellite to Satellite. *Not accumulating waste at or near the point of generation would be cited and/or violations for SAA #3 being used as a CAA.*
3. Missed at least one weekly inspection of the CAA.
4. Annual hazardous waste training refresher exceeded 365 days for at least one employee.
5. Possibly the containers in the CAA are not maintaining 24 inches of aisle space.
6. The containers in SAA #1 and #3 were determined to be D001 and F005; therefore requiring the indication of a toxic hazard be indicated. *Marking and labeling violations would be cited.*
7. One container was marked with an accumulation start date exceeding 90 days. The facility would be in violation of not obtaining a permit to store hazardous waste, and not requesting an extension to accumulate hazardous waste for more than 90 days.





*Questions?*