



# Workshop H: New to EHS? Meet the New RCRA Waste Management

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Regulations Most Likely to Affect Your Daily Job



# Your Presenters

## MEET OUR TEAM



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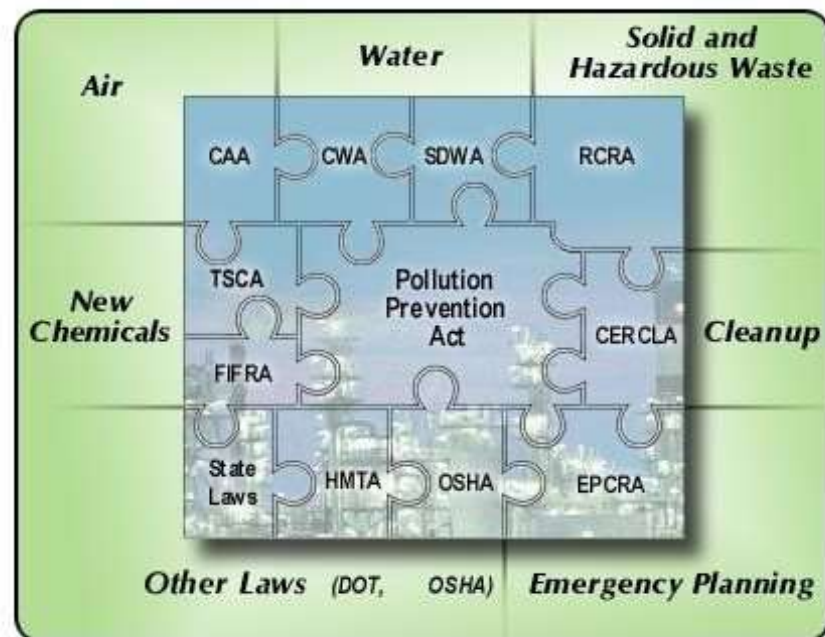


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# Course Objectives

- Overview of Major Hazardous Waste Regulations (RCRA)
- Generator Requirements
- State Variations
- What's new?



# Major Environmental Statutes

## Laws Behind the Regulations

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- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Resource Conservation and Recovery Act (RCRA)
- Safe Drinking Water Act (SDWA)
- Emergency Planning, and Community Right-to-Know Act (EPCRA )
- Superfund Amendments and Reauthorization Act (SARA)
- Toxic Substances Control Act (TSCA)
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)



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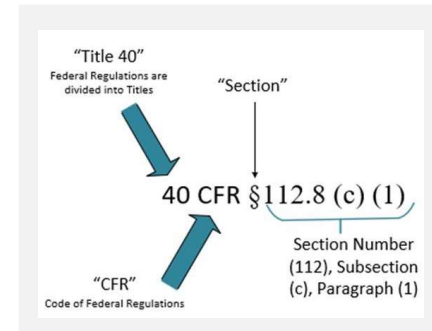
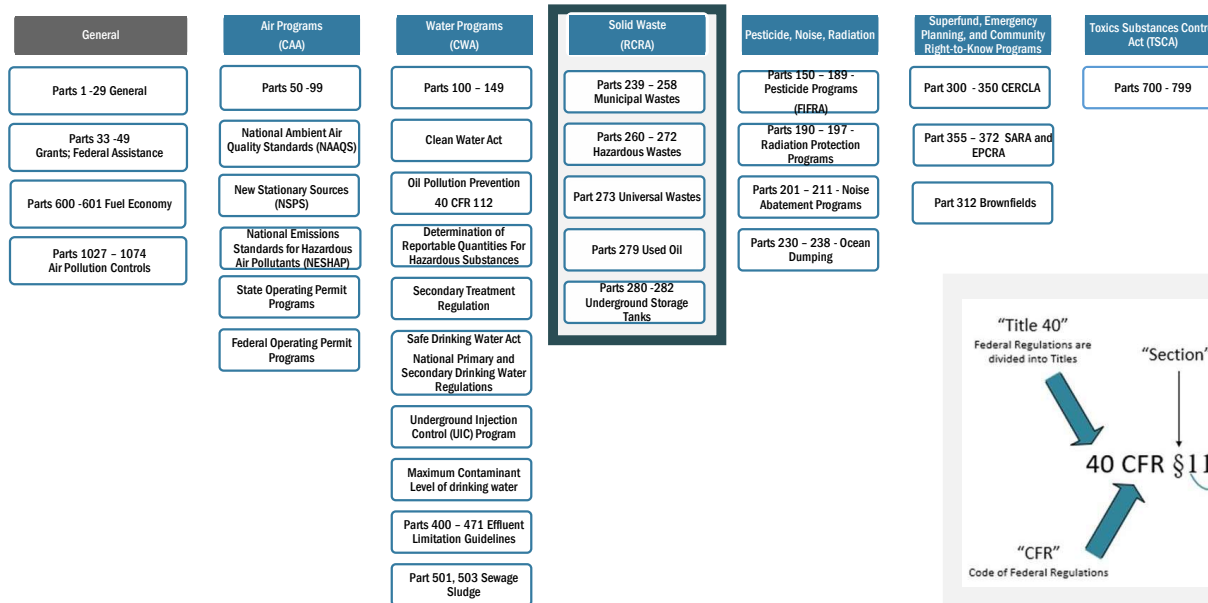
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# Code of Federal Regulations (CFR) – Title 40

## SUBCHAPTER I - SOLID WASTES (PARTS 239 - 282) BASED ON THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)



# Hazardous Waste Regulations

## Resource Conservation Recovery Act

- Generation
- Treatment
- Storage
- Disposal
- Transportation
- Recycling
- Reclamation
- Import/Export

} PERMIT



# “Cradle to Grave”

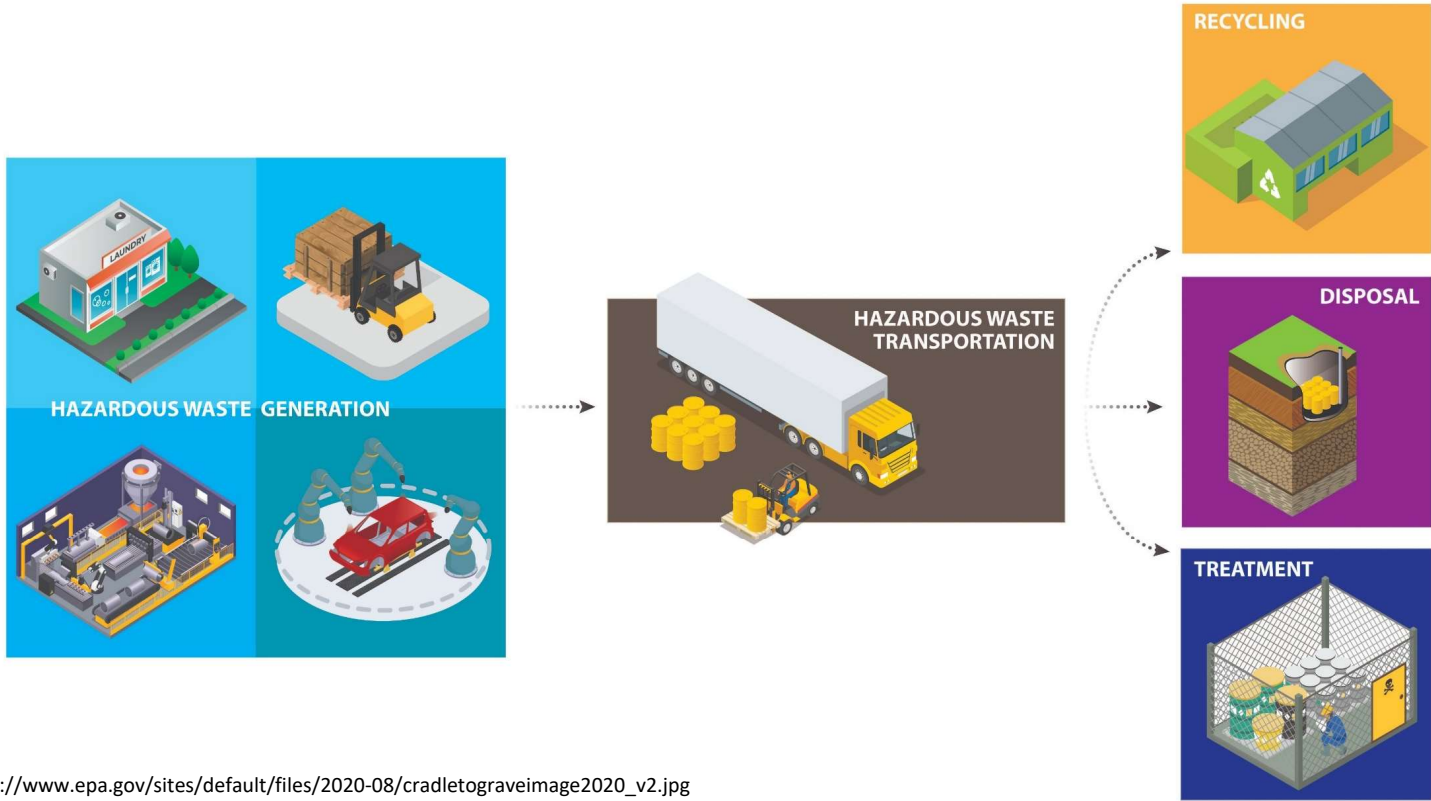


Image from EPA 2020 - [https://www.epa.gov/sites/default/files/2020-08/cradletograveimage2020\\_v2.jpg](https://www.epa.gov/sites/default/files/2020-08/cradletograveimage2020_v2.jpg)



# Complying with HAZARDOUS WASTE REGULATIONS



# Complying with HAZARDOUS WASTE REGULATIONS

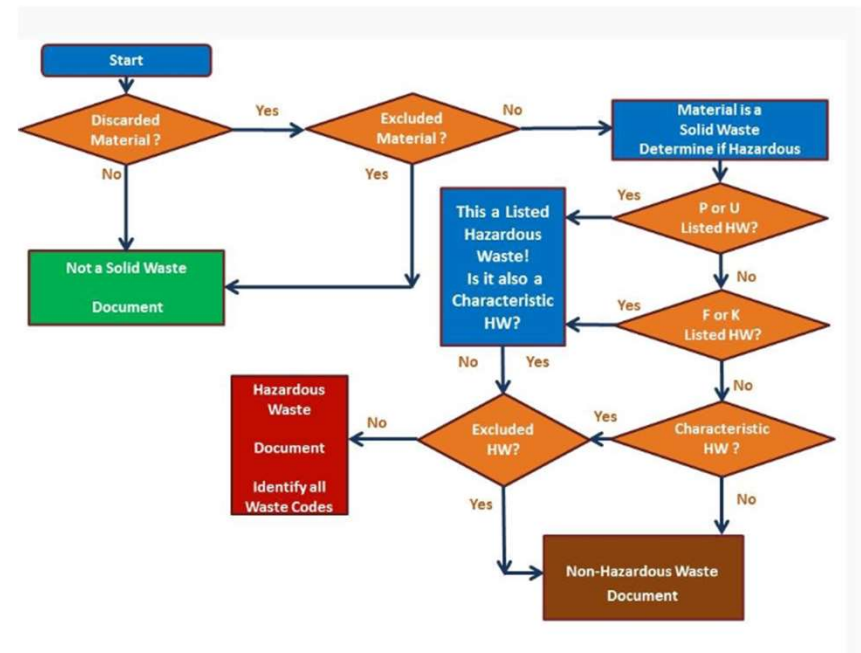
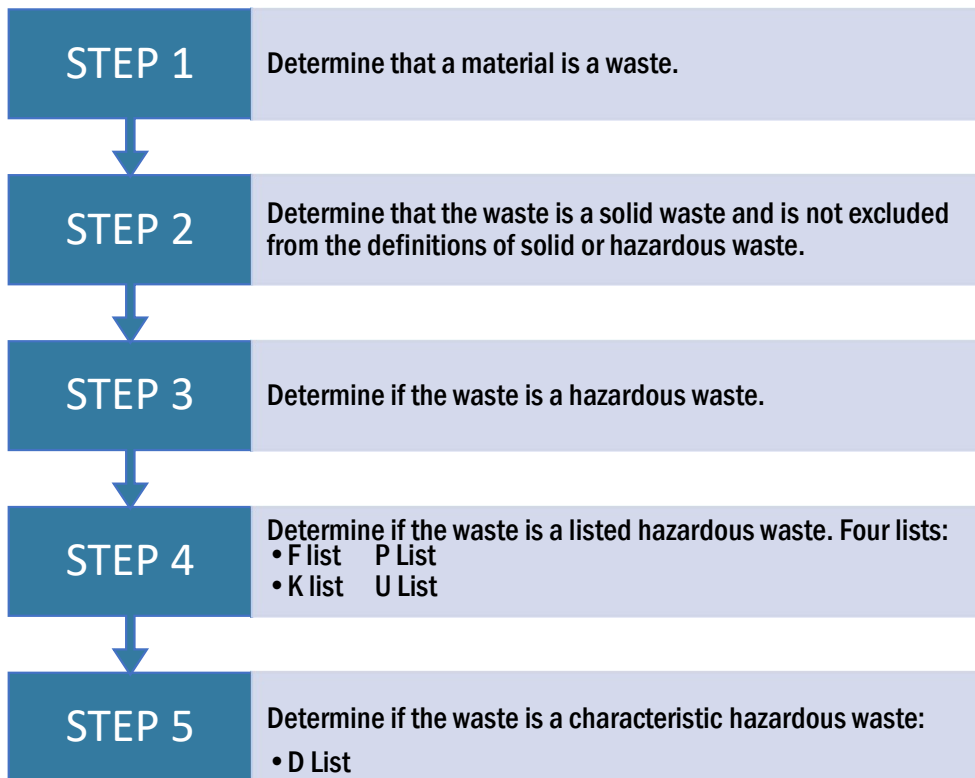


Image retrieved from TNDEC:  
<https://www.tn.gov/environment/program-areas/solid-waste/hazardous-waste-management/hw-determination-matrix/access-flow-chart.html>



# Complying with HAZARDOUS WASTE REGULATIONS



# What is Solid Waste?

“Solid Waste” means any **garbage or refuse, sludge** from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other **discarded material**, resulting from industrial, commercial, mining, and agricultural operations, and from community activities.

- Garbage (e.g., milk cartons and coffee grounds)
- Refuse (e.g., metal scrap, wall board, and empty containers)
- Sludges from waste treatment plants, water supply treatment plants, or pollution control facilities (e.g., scrubber slags)
- Industrial wastes (e.g., manufacturing process wastewaters and non-wastewater sludges and solids)
- Other discarded materials, including solid, semisolid, liquid, or contained gaseous materials resulting from industrial, commercial, mining, agricultural, and community activities (e.g., boiler slags).

# Waste That Are Not Solid Wastes

- 25 Categories excluded  
[40 CFR 261.4(a)(1) – (27)]

- Examples:
  - Domestic Sewage
  - Nuclear Waste
  - Pulping Liquors
  - Spent Sulfuric Acid
  - Excluded Scrap Metal
  - Used Cathode Ray Tubes
  - Solvent-contaminated Rags
  - Material that is remanufactured

Domestic Sewage and Mixtures of Domestic Sewage
Point Source Discharge
Irrigation Return Flow
Radioactive Waste
In-Situ Mining
Pulping Liquors
Spent Sulfuric Acid
Reclamation in Enclosed Tanks
Spent Wood Preservatives
Coke By-Product Wastes
Splash Condenser Dross Residue
Hazardous Secondary Materials From the Petroleum Refining Industry
Excluded Scrap Metal
Shredded Circuit Boards
Pulping Condensates Derived from Kraft Mill Steam Strippers
Spent materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water, or other values are recovered by mineral processing or by beneficiation
Petrochemical recovered oil from an associated organic chemical manufacturing facility
Spent caustic solutions from petroleum refining liquid treating processes used as a feedstock to produce cresylic or naphthenic acid
Hazardous secondary materials used to make zinc fertilizers
Zinc fertilizers made from hazardous wastes, or excluded hazardous secondary materials
Used cathode ray tubes (CRTs)
Hazardous secondary material generated and legitimately reclaimed within the United States or its territories and under the control of the generator
Hazardous secondary material that is generated and then transferred for the purpose of reclamation is not a solid waste
Solvent-contaminated wipes that are sent for cleaning and reuse are not solid wastes from the point of generation
Hazardous secondary material that is generated and then transferred to another person for the purpose of remanufacturing is not a solid waste



# Solid Wastes Excluded from Hazardous Waste Regulations

- 17 Categories excluded  
[40 CFR 261.4(b)(1) – (17)]
- Examples:
  - Household hazardous wastes
  - Agricultural wastes
  - Cement Kiln Dust
  - Used Oil Filters
  - Landfill Leachate

Solid Wastes Which Are Not Hazardous Wastes
Household Hazardous Waste
Agricultural Waste
Mining Overburden
Fossil Fuel Combustion Waste (Bevill)
Oil, Gas, and Geothermal Wastes (Bentsen Amendment)
Trivalent Chromium Wastes
Mining and Mineral Processing Wastes (Bevill)
Cement Kiln Dust (Bevill)
Arsenical-Treated Wood
Petroleum Contaminated Media & Debris from Underground Storage Tanks
Injected Groundwater
Spent Chlorofluorocarbon Refrigerants
Used Oil Filters
Used Oil Distillation Bottoms
Landfill Leachate or Gas Condensate Derived from Certain Listed Wastes
Project XL Pilot Project Exclusions
Project XL Pilot Project Exclusions



# Hazardous Waste Generation

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- First link in the hazardous waste management system.
- Generators must determine if their waste is hazardous.
- Must oversee the ultimate fate of the waste.
- Ensure and fully document that the hazardous waste that they produce is properly identified, managed, and treated prior to recycling or disposal.
- Degree of regulation depends on the amount of waste that a generator produces.



# Classifying Hazardous Waste

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- Step 1 – Determine that a material is a **waste**.
- Step 2 – Determine that the waste is a **solid waste** and is not excluded from the definitions of solid or hazardous waste.
- Step 3 - Determine if the waste is a **hazardous waste**.
- Step 4 - Determine if the waste is a listed hazardous waste.

Four lists:

The F list

The P list

The K list

The U list



# The F and K Lists

## Non-specific and Specific Sources

- **The F list** - wastes from certain common industrial and manufacturing processes. [40 CFR §261.31].

*E.g., - Spent solvent wastes (waste codes F001 through F005)*

- **The K list** - wastes from 13 different industrial or manufacturing categories on the list. [40 CFR §261.32].

*E.g., wood preservation, organics chemicals manufacturing, inorganic pigment manufacturing, etc.*







# The P and U Lists

Discarded Commercial Chemical Products

- P – acute (205 chemicals)
- U – Toxic (411 chemicals)

[40 CFR 261.33]

- Commercial Products - Pure/Technical Grade
- Formulations - Sole Active Ingredient
- “Unused” - Not Manufactured Article

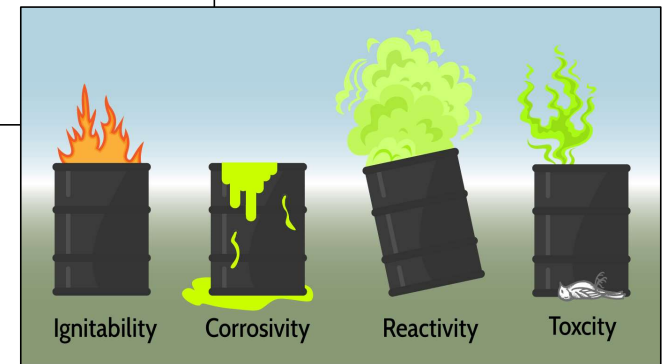
# Characteristic Hazardous Wastes (4 Properties)

## Ignitable (D001)

- Liquid with Flash Point **< 140°F**
- Oxidizer
- Ignitable Compressed Gas
- Non-liquid that Causes Fires Through:
  - Friction
  - Moisture Absorption
  - Spontaneous Chemical Changes

## Corrosive (D002)

- Aqueous and has a pH of **≤ 2.0 or ≥ 12.5**
- Liquid and Corrodes Steel
  - **≥ 1/4 Inch/Year**



# Characteristic Hazardous Wastes (4 Properties) – Cont'd

## Reactive (D003)

- **Normally Unstable**
  - Explosives/Shock Sensitive
- **Reacts Violently with Water**
- **Forms Potentially Explosive Mixtures with Water**
- **Generates Toxic Gases When Mixed with Water**
- **Reactive Cyanides + Sulfides**
- **Capable of Detonation if:**
  - Subject to Strong Initiating Source
  - Heated Under Confinement
- **Defined as Explosive**



# Characteristic Hazardous Wastes (Toxic D004 – D043)

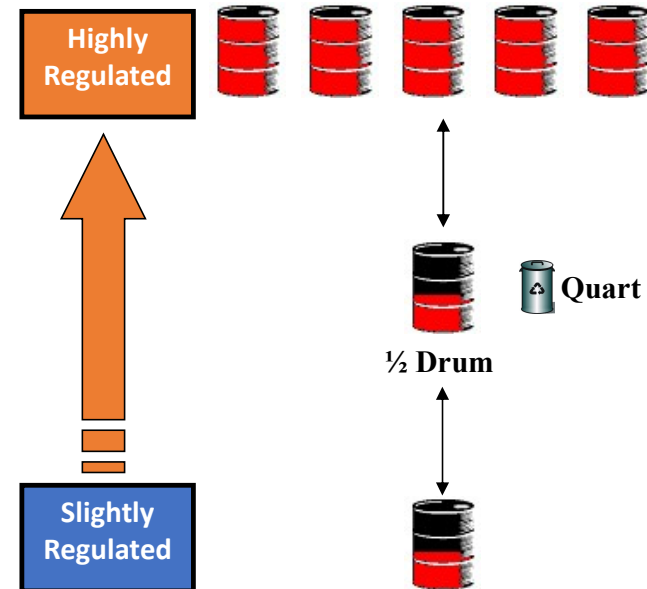
- 39 Specific Chemicals
  - Solvent/Organic Chemicals
  - Heavy Metals
  - Pesticides
- Failed TCLP Concentrations Test
  - Simulates Migration of Chemicals in a Landfill that Could Impact Groundwater



# Hazardous Waste – Generator Types

- Large Quantity Generator (LQG)
  - >2,200 lbs./Month
  - >2.2 lbs./Month Acute Hazardous
- Small Quantity Generator (SQG)
  - 220 lbs. > per Month < 2,200 lbs.
  - 13,200 lbs. Maximum on Site
- Conditionally Exempt SQG (CESQG)
  - < 220 lbs. per Month
  - < 2.2 lbs. Acute Hazardous (P) Waste
  - 2,200 lbs. Maximum on Site

Episodic Generator ([Multiple Status](#) Different Months)



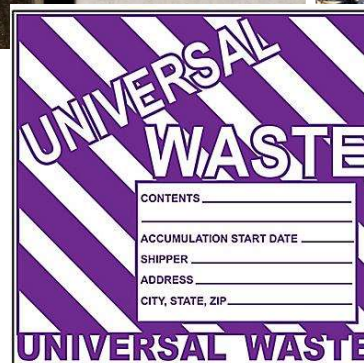


# Hazardous Waste Generator Requirements

	LQG	SQG	VSQG
Waste Determination	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DOT Shipping Requirements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
On Site Storage	90 Days	180/270 Days < 13,200 Lbs Max	< 2,200 Lbs
Container/Tank Marking & Labeling	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not Required
Weekly Accumulation Area Inspections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not Required
EPA ID Number	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Optional
Formal Written Training Program	<input checked="" type="checkbox"/>	Not Required (Awareness)	Not Required
Contingency Plan	<input checked="" type="checkbox"/>	Not Required	Not Required
Bi-Annual Waste Report	<input checked="" type="checkbox"/>	Not Required	Not Required

# Universal Wastes - Regulations

- Typically Hazardous Wastes
- Relaxed Regulations if Recycled
  - Fluorescent Lamps  
(Crushing = Treatment H.W.)
  - Lead-Acid/Ni-Cad Batteries
  - Mercury-Containing Equipment
  - Recalled Pesticides
- Dated + Marked
  - “Universal Waste” or “Used” or “Waste” + Type
- Managed Prevent Leaks = Closed Box
- 1 Year Storage
- Training = Handling + Spill Response



# Universal Oil - Regulations

- Used Oil (Lubrication)
  - Refined from Crude/Synthetic
  - Used or Contaminated from Use
- < 1,000 ppm Halogens
- No Hazardous Waste Mixtures
- Mark Containers/Tanks “Used Oil”
- Managed In Drums/Tanks
  - No Severe Rust/Structural Defects
  - No Visible Leaks (Lids Closed)
  - No Exposure to Rainwater

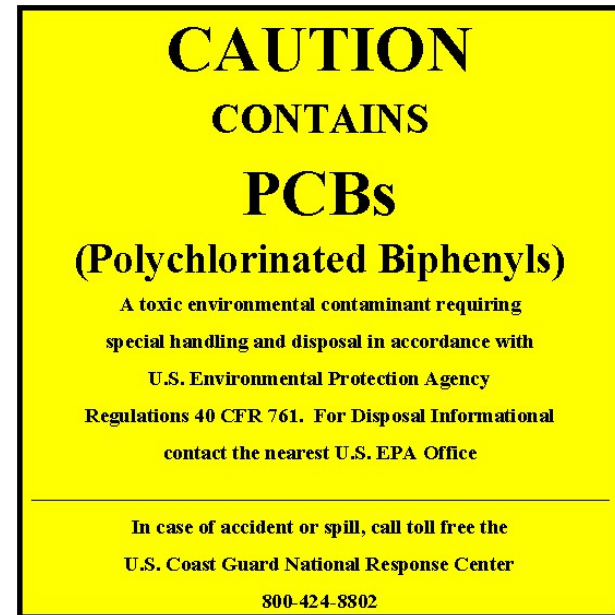


Must be Recycled

# Toxic Substances

## Polychlorinated Biphenyl's (PCBs)

- Manufacture, Processing, Distribution Prohibited
- Marking & Labeling PCB Classes
  - > 500 PPM (PCB)
  - 50 PPM - 500 PPM (PCB Contaminated)
  - < 50 PPM (Non-PCB)
- Release Reporting (> 1 Pound)
- Annual Equipment Inventory (> 500 PPM)
- On Site Storage Limit
  - 30 Day Maximum + Label Date of Removal
  - 1 Year - 2nd Containment
- Manifest + COD+ EPA ID for Disposal



# RCRA State Differences

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- Ohio
  - LQG Any Month → Must file biennial report
  - File report every other year (due in even years)
- Kentucky
  - LQG + SQG → File Annual Generator Report
  - Annual Generator Registration
  - Fee for Waste Streams
- Indiana
  - SQG → File Annual Manifest Report
  - LGQ → Biennial HW Report and Annual Manifest Report

# What's New

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- Hazardous Waste Generator Improvements Rule
- Universal Wastes Changes
- E-Manifests
- Waste Pharmaceuticals
- PFAS / TENORM



# RCRA HAZARDOUS WASTE GENERATOR IMPROVEMENTS RULE

- November 28, 2016, EPA published the long-awaited final rule overhauling the hazardous waste generator rules.
- Affected regulations: 40 CFR 257-258, 260-268, 270-271, 273, 279
  - > 60 changes to the regulations
  - Plus ~ 30 technical corrections
- Affected entities:
  - All hazardous waste generators, TSDFs, transporters
- Effective Date – **May 30, 2017**
  - Not effective in authorized states until adopted
  - States must adopt more stringent requirements by **July 2018 or 2019**





# MAJOR PROVISIONS OF THE FINAL RULE

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- Reorganization
- Consolidation of CESQG (VSQG) Waste at LQGs
- Episodic Generation
- Ignitable and Reactive Waste Waiver
- Emergency Preparedness and Prevention
- Waste Determination Expectations
- Labeling
- Notifications and Reporting
- Satellite Accumulation Provisions
- Closure Requirements
- Additional Clarifications



# REORGANIZATION

Provision	Existing Citation	New Citation
Generator category determination	§ 261.5(c)-(e)	§ 262.13
VSQG provisions	§ 261.5(a), (b), (f)-(g)	§ 262.14
Satellite accumulation area provisions	§ 262.34(c)	§ 262.15
SQG provisions	§ 262.34(d)-(f)	§ 262.16
LQG provisions	§ 262.34(a), (b), (g)-(i), (m)	§ 262.17

# VSQG Consolidation Option

- Benefits companies with multiple locations
  - At least one location is LQG
  - At least one location is VSQG
- Allows company to consolidate VSQG wastes at their own LQG facility
  - LQG does not need to be a permitted TSDf
  - Must be under control of the same “person,” as defined under RCRA
  - “Control” is the power to direct policies at the facility
- NOT applicable to SQGs
- LQG must notify EPA, keep records of each shipment, manage waste as LQG waste, and include in Biennial Report
- Potential issues when shipping wastes through multiple states

# Episodic Generation

- Benefits facilities with occasional temporary surge in hazardous waste generation
- Allows generator to retain existing (VSQG, SQG) category during episodic generation, provided they comply with a streamlined set of requirements
  - Allows one planned episodic event per year
    - But can petition for second (unplanned) event
  - Must notify EPA at least 30 days in advance (or within 72 hours for unplanned episode)
  - Must complete the episodic event within 60 days (all waste shipped offsite)

# Episodic Generation – contd.

- VSQG streamlined requirements: comply with SQG waste management provisions and maintain records
  - Obtain EPA ID Number
  - Use hazardous waste manifest and transporter to ship to RCRA TSD or recycler
  - Manage in a way that minimizes potential for accident or release
  - Label episodic waste containers
    - “Episodic Hazardous Waste”
    - Identify hazards of contents
  - Identify an emergency coordinator at the generator facility
  - Maintain records of episodic event

# Episodic Generation – contd.

- SQG requirements:
  - Comply with existing SQG regulations
  - Use hazardous waste manifest and transporter to ship to RCRA TSDf or recycler
  - Label episodic waste containers
    - “Episodic Hazardous Waste”
    - Identify hazards of contents
  - Maintain records of episodic event
- All conditions must be met to retain the episodic generation conditional management benefit

# Ignitable and Reactive Wastes

- 50-Foot Waiver
  - Currently ignitable and reactive wastes are prohibited from storage within 50 feet of the property line
  - New allowance: can request site-specific waiver from the local fire authority if unable to meet the 50 foot restriction
    - Written waiver required
    - EPA delegates responsibility for waiver to local fire “authority having jurisdiction” (AHJ)
    - Work with AHJ to determine appropriate site-specific conditions



# Emergency Preparedness

- LQG Contingency Plans must have a “quick reference guide” with most critical information
- Contents of “quick reference guide”
  - Types and amounts of hazardous waste
  - Maps of site and surrounding area
  - Location of water supply
  - Identification of notification system (phones, PA, etc.)
  - Emergency contact(s)
- Who must submit
  - Any new LQG with their first Contingency Plan
  - Any existing LQG, at the first revision of the Contingency Plan following effective date of the regulation



# Emergency Preparedness - contd

- LQG Contingency Plan Emergency Coordinator information
  - No longer required to include certain personal contact information
  - Where 24/7 Emergency Coordinator is available on-site, may list the position(s) rather than employee names
- Clarifies where and what emergency equipment is required
  - Must address all areas where hazardous waste is generated and/or managed
- May use CBT/electronic training for personnel training
- Document that emergency arrangements have been attempted with local authorities
  - Not required to have something back from local authorities, just document that you attempted to make arrangements
  - Waiver option for facilities with on-site response capabilities

# Waste Determinations

- Must accurately document hazardous waste determinations
  - Applies to SQGs and LQGs
  - Rule now clarifies applies at the point of generation
  - Does not specifically apply to non-hazardous wastes (although recommended as a BMP)
- Using knowledge to determine waste characteristics
  - Lists types of knowledge previously accepted by EPA
  - Specifically allows alternative test as knowledge

# LABELING REQUIREMENTS

Applies to all SQGs, LQGs, Transporters

Label must indicate

- The words “Hazardous Waste”
- **Identification of hazards NEW**
  - Can use any of several established methods to indicate hazards (DOT, OSHA, NFPA, pictogram, RCRA characteristic...)
- **All waste codes (prior to shipment) NEW**
  - May use recognized electronic option (e.g., bar codes)
  - Exception for lab packs
- Accumulation start date

For vessels that can't be labeled (some tanks, drip pads, containment buildings, ...)

- Info can be in records or logs kept near to location of the vessel

## SQG required to re-notify every 4 years

- Electronic option available
- First report not due until September 1, 2021

## LQG Biennial Report rules updated to be consistent with current guidance

- LQGs must report all hazardous waste generated in a calendar year, even when it is managed the next year
- LQGs must report for all months in the year, even if SQG for some of those months
- LQGs must report hazardous waste recycled on-site
- Recycling facilities must report wastes that are not stored prior to recycling

# Notification/ Recordkeeping

# Satellite Accumulation Provisions

- New section: 40 CFR Specific clarification that hazardous wastes in satellite accumulation cannot be mixed or placed in a container with other incompatible hazardous wastes
- Containers in Satellite Accumulation Areas (SAA) are allowed to remain open under limited circumstances
  - When necessary for safe operations (limited exception)
- Clarifies that the three-day requirement to move containers from satellite accumulation to container accumulation means three calendar days
- For acute hazardous waste, can consider max weight or volume
- Marking and labeling consistent with central accumulation areas

# CLOSURE

Closure of generator accumulation units must meet closure performance standards (i.e. “clean close”)

- Existing requirement extended to container accumulation units
- Can defer (with appropriate notice) until full facility closure

Closure requirements for LQG Container Accumulation Areas that cannot clean close

- Must close as landfill
- Place notice in operating record within 30 days after closing a unit within a facility that cannot meet closure performance standards (OR meet closure performance standards and then notify EPA)
- Notify EPA or authorized state no later than 30 days prior to closing a facility
- Notify EPA within 90 days after closure of a facility that cannot clean close



## Clarification of generator categories

- Only one generator category can apply in any given month
- Clarification on generator categories for mixtures of acute and non-acute hazardous wastes
- Clarification of generator categories for mixtures of hazardous/non-hazardous wastes

Clarification of tank emptying/turnover within 90 or 180 days

Generator rules now include the long-standing prohibition on landfilling of liquids

Generator status is a monthly determination – not an average

# OTHER CHANGES / CLARIFICATIONS

# STATE IMPLEMENTATION

Authorized states are required to adopt provisions more stringent than current federal (and state) regulations

States are not required to adopt the less stringent provisions

- VSQG (CESQG) consolidation
- Episodic generation
- Waiver from 50-foot rule

States are also not required to adopt any provisions which are neither more nor less stringent:

- Reorganizing the hazardous waste generator regulations
- Defining central accumulation area and generator categories
- Technical corrections and conforming changes to various parts of the RCRA regulations
- Etc.

## Final Rule published in the Federal Register on November 28, 2016

- Effective date 6 months after final rule: May 30, 2017 only for states (IA & AK) and territories without RCRA authorization
- Authorized states and territories must adopt all provisions more stringent than current state regulations
  - 1-year implementation schedule (July 1, 2018), or
  - 2-year implementation if statutory change required (July 1, 2019)

## State Implementation

- Ohio – Not yet adopted
- Indiana – Incorporated by reference (effective 12/26/19)
- Kentucky - Incorporated by reference (effective 12/7/17)

# STATUS AND IMPLEMENTATION

# IMPLICATIONS OF THE FINAL RULE

So many changes = numerous points of compliance risk

Easy enforcement targets

- SQG quadrennial re-notifications
- Waste determination documentation
- LQG Contingency Plans – Quick Response Guide

Expect increasing disparity between state programs

- Generators be aware of state-specific requirements
- For interstate transport, be aware of state-to-state differences

# Summary of Impacts by Generator Category

New Provision	VSQG	SQG	LQG
LQG/VSQG consolidation of wastes	X		X
Episodic generation	X	X	
50-foot waiver			X
Marking and labeling		X	X
Marking RCRA waste codes		X	X
SQG re-notification		X	
Contingency Plan Quick Reference Guide			X
Closure Notification			X
Closure as landfill if can't clean close			X

# WHAT DO YOU NEED TO DO?

## Update training materials or plans if needed:

- VSQG vs. CESQG
- Regulatory citations

## Labeling

- Ensure waste labels include the hazards of the material
- Ensure waste labels include all RCRA waste codes prior to sending offsite

## Hazardous Waste Contingency Plan

- Include Quick Reference Guide when plan is updated
- Ensure you have documentation proving you attempted to make arrangements with local authorities

## SGQ notification

- Review hazardous waste generator notification, update if needed and re-notify every 4 years

# E- Manifests

EPA launched e-Manifest system on June 30, 2018

National electronic manifest tracking system

Receiving charged fees to cover cost to develop/operate

- \$25 - Mailed in paper manifest
- \$20 - Scanned image upload
- \$14 - Manifest data plus image upload
- \$8 - Electronic manifest (fully electronic & hybrid)

Generators need to register for e-Manifest if they wish to sign manifests electronically, view records or submit corrections



# Pharmaceutical Wastes

- New rule on February 22, 2019 standardizes how healthcare facilities and reverse distributors handle hazardous waste pharmaceuticals. EPA will now implement RCRA Part 266, Subpart P in replacement of Part 262.
- “Creditable” (unsold/unused) pharmaceuticals that can be returned to the manufacturer will not have accumulation limits, container standards, or labeling requirements.
- Non-creditable hazardous waste pharmaceuticals will have a one-year accumulation limit, minimum container standard, and labeling requirements.
- Bans sewer disposal nationwide from August 21, 2019.

# PFAS and TNORM

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- “Creditable” (unsold/unused) pharmaceuticals that can be returned to the manufacturer will not have accumulation limits, container standards, or labeling requirements.
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**What Can You DO?**

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# Top Waste Violations

1. Waste Identification
2. Inspections
3. Emergency Preparedness and Contingency Planning
4. Permitting
5. Container Management – incompatibles and open container
6. Container Marking, Labeling, and Dating
7. Personnel Training
8. Universal Waste Management
9. Transporter Requirements



# What Can You DO?

- Start Reading the Regulations
  - Everything is Not in All One Place
- Call the Agency & Ask For Help
- Contact a Regulatory Expert
  - Internet Chat Groups
  - Agency Web Sites (**Guidance Documents**)
  - Trade Groups
  - Environmental Consultant
  - Knows Your Industry Specifically
    - Broad Based Regulatory Experience
    - Assessment vs. Full Blown Audit



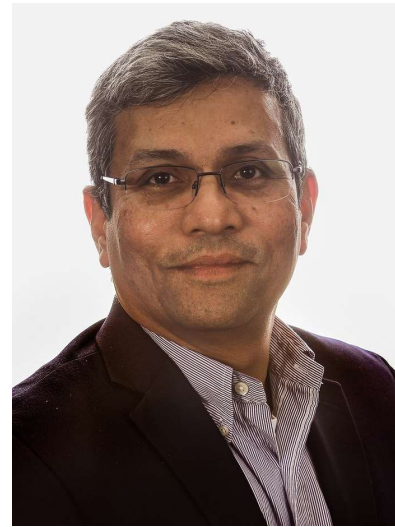
# Questions???

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**Rajib Sinha, PE**

Senior Engineer/Regional Initiatives  
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A person wearing a white hard hat and an orange safety vest is seen from the back, looking out over a vast, green landscape under a cloudy sky. The hard hat has a Trihydro logo and a safety tag that reads "100 HOURS SAFETY LEADERSHIP EMPLOYEE". The safety vest has a large Trihydro logo on the back.

# Code of the West

Trihydro adopted the “Code of the West” in 2005 as our corporate code of conduct, and we use it to guide our business each day.

1. Live Each Day With Courage
2. Take Pride in Your Work
3. Always Finish What You Start
4. Do What Has To Be Done
5. Be Tough, But Fair
6. When You Make A Promise, Keep It
7. Ride For The Brand
8. Talk Less And Say More
9. Remember That Some Things Aren't For Sale
10. Know Where To Draw The Line
11. Leave It Better Than You Found It\*



## Biographical Information

**Rajib Sinha, P.E., Senior Engineer/Project Manager**  
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Mr. Sinha is a Chemical Engineer and Project Manager with over 30 years of experience in Environmental Consulting and Engineering. Mr. Sinha has provided a wide array of services to industry for compliance with various laws. For eight years, Mr. Sinha led a team of engineers, geologists, scientists, and administrative staff that provided environmental compliance, safety, and Industrial Hygiene services to commercial facilities and governmental clients. This includes projects conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Resource Conservation and Recovery Act (RCRA); Superfund Amendments and Reauthorization Act (SARA); Bureau of Underground Storage Tank Regulations (BUSTR). Mr. Sinha has designed and implemented several systems for treating contaminated groundwater and industrial wastewater and assisted several clients in complying with provisions of the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act (CWA). He has coordinated his work activity with various disciplines and clients.

Mr. Sinha has also served as the Project Leader for research projects at the U.S. Environmental Protection Agency (USEPA) Test & Evaluation (T&E) Facility in Cincinnati, OH. He directs research related to providing safe drinking water with a particular emphasis on systems serving small communities without access to public drinking water systems. Other current projects include development of innovative retrofit devices for stormwater management and watershed management research. Mr. Sinha also develops and manages third-party commercial projects at the T&E Facility. Mr. Sinha has made numerous presentations in conferences as well as published papers in peer-reviewed journals.

Mr. Sinha holds a Bachelor of Technology in Chemical Engineering (Jadavpur University), Master of Science in Chemical Engineering (University of Southern California), and a Master of Business Administration (University of Cincinnati).



## Biographical Information

**Anita Decina, Vice President, Operational, Safety & Environmental Excellence**  
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Ms. Anita Decina is Heritage-Crystal Clean's Vice President of Operational, Safety, & Environmental Excellence. She is responsible for ensuring regulatory compliance, worker safety, and transportation compliance across our nation-wide network of branches, wastewater treatment plants, recycle centers, and solid waste processing facilities. She leads a talented team of environmental compliance, health and safety, and DOT safety compliance professionals. Her team has led the implementation of multiple safety and compliance programs resulting in increased compliance and improved environmental sustainability practices.

HCC provides full-service solvent and aqueous parts cleaning, containerized waste management, used oil collection and re-refining, vacuum truck services, wastewater treatment, and closed loop antifreeze recycling for its customers. HCC interacts not only within our own service operations but with multiple generators, transporters, receiving facilities, landfills, incinerators and a variety of other treatment and disposal facilities.

Ms. Decina is responsible for ensuring regulatory compliance, worker safety, and transportation compliance. Her team has led the implementation of multiple safety and compliance programs resulting in increased compliance and improved environmental sustainability practices.

Ms. Decina joined Crystal Clean in 2000 and has held several roles related to EHS and DOT compliance. She was part of a team that established Heritage-Crystal Clean's Environmental Solutions Partners Program and has worked with federal and state regulators to establish a positive, transparent working relationship.

Ms. Decina holds a Bachelor of Science in Business Administration from Central Michigan University.