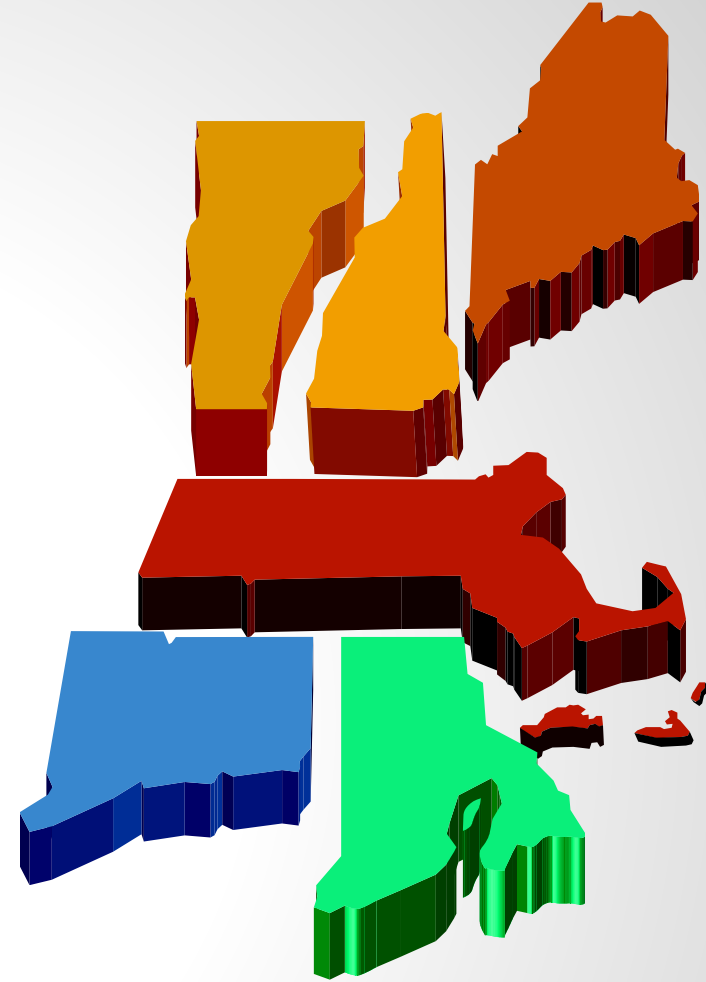


Understanding Your Environmental Responsibilities

Salvatore Caccavale, CPEA
November 10, 2020



**New England Area
ASSP Region VIII
Professional Development Conference**

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Outline

- ▶ **Clean Water Act (CWA)**
 - ▶ **Resource Conservation & Recovery Act (RCRA)**
 - ▶ **Clean Air Act (CAA)**
 - ▶ **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**
- 

Major Regulatory Areas

Air quality – regulated under **Clean Air Act** & other laws to control the amount of hazardous materials released into the air people breath.

Water quality – regulated under **Clean Water Act**, which governs discharges of pollution into surface waters such as lakes, rivers, and streams. A separate law, **Safe Drinking Water Act**, regulates the quality of water people drink.



Major Regulatory Areas

Waste materials are regulated under Resource Conservation and Recovery Act (RCRA) which deals with waste disposal and recycling. Focuses on proper disposal of hazardous wastes.

Chemical safety & use are regulated under 2 laws.

- Toxic Substance Control Act (TSCA) covers hazards of new and existing chemicals.
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) covers pesticides.



Major Regulatory Areas

Cleanup of waste sites is regulated under the Comprehensive Environmental Response and Liability Act (CERCLA) also known as “Superfund”.

The Emergency Planning and Community Right to Know (EPCRA) deals with emergency planning and chemical information.



You say you want an Evolution!

Rachel Carson

1945 – wrote paper on government over use of chemical pesticides – no one listened

“If man were to follow the teachings of Rachel Carson, we would return to the dark ages and the insects, diseases and vermin's would once again inherit the Earth.”



Smear tactics didn't work!!

1962 – the New Yorker published “Silent Springs”

“Rachel Carson meticulously described how the pesticide DDT entered the food chain in the fatty tissues of animals, including human beings, and caused cancer and genetic damage.”



You Say you want an Evolution!

- **Environmental Protection Agency (EPA) – 1969**
- **Earth Day (April 22, 1970)**
- **ISO 14001 – Environmental Management System**



Clean Water Act

Safe Drinking Water Act - (1974)

set standards for level of contaminants in drinking water, and protected water wells and sole source aquifers

Clean Water Act - (1977) make nation's waterways "fishable and swim able," to ban toxic pollution and to eliminate the discharge of all pollution into the Nation's "navigable waters"



Clean Water Act - Primary Elements

- **minimal national effluent standards based on specific industries**
- **system of water quality standards**
- **discharge permit program (NPDES) provides enforceable limitations on discharges**
- **provisions for toxic chemical and oil discharges**

Examples of regulated effluents are:

water/oil separators

sewerage treatment plants

storm water collection systems

industrial treatment plants (chemical/biological)

Clean Water Act - Oil Pollution

Oil Pollution Act applies to onshore facilities not involved in transportation matters

- **must prepare a Facility Response Plan if they handle, transport or store oil OR**
- **could cause substantial harm to environment.**

Substantial harm - any discharge into the water, shore line or economic zone around the facility.

Notification to the National Response Center (NRC)



Clean Water Act - Oil Pollution

- ▶ **Oil of any kind in any form, including, but not limited to:**
 - fats, oils, or greases of animal, fish, and marine mammal origin;
 - vegetable oils, including oils from seeds, nuts, fruits, or kernels;**AND**
 - oils and greases, including petroleum oil as, crude oil, refined oil, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes.



Clean Water Act - SPCC Plan

Spill Prevention Control and Countermeasure (SPCC)

**threshold quantity - 1320 gallons aggregate,
containers >55 gallons OR >42,000 UST capacity**

**reportable spill quantity – >1,000 gallon spill OR two (2) spills 42
gallons within 12 months**

storage area must be included in facility diagram

Plan must be reviewed every 5 years

Professional Engineer certification “technical changes”



Clean Water Act - NPDES

National Priority Discharge Elimination System

**regulates industrial & municipal point source discharges
establishes performance level the discharge maintains
requires discharge to self report any failures
sampling activities required (grab and composite)
discharge monitoring reports (DMR's)
reportable quantities (RQ's) hazardous substances (~300)
permit renewed every 5 years**



Clean Water Act - Pollutants

Conventional:

- Biological Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)
- Total Suspended Solids (TSS)
- pH
- oil and grease
- fecal coliforms



Non-conventional: nutrients and phosphorus

Toxic pollutants: organics and metals (65)

Clean Water Act - Water Quality

Water Quality Standards

Based on the *use of the water*, such as:

aquatic life support, fish consumption,
shellfish harvesting,
drinking water supply,
swimming, recreational, wildlife habitat



Criteria set to protect and maintain designated use for water body

Numeric - physical, biological and chemical parameters

Narrative - defines rather than quantifies conditions and goals

Clean Water Act - Pretreatment

Industrial waste water not directly discharged into water ways go to a Publicly Owned Treatment Works (POTW) must partake in a pretreatment program (chemical & biological)

permits issued from municipality

slug plan is usually required



Clean Water Act - Storm Water

What is Stormwater?

- Stormwater is rain or snowmelt that doesn't soak into the ground and runs off into waterways.
- As it flows over paved and unpaved areas, it picks up potential contaminants (e.g. oils, sediment/dirt, chemicals).



Clean Water Act - Storm Water

Point Source Discharges - storm water associated with industrial facilities

**Individual or general permit conditions:
periodic sampling (annually) & analysis
development of Storm Water Pollution Prevention Plan**

Non Point Sources - runoff from farm fields, city streets and construction sites (salt, silt, pesticides)



Storm Water BMP's

1. **Good housekeeping**
 - Keep your work area neat and orderly
 - Keep unused containers closed tightly
 - Use a drip pan when pouring
2. **Materials management**
 - Store materials out of the weather
 - Cover them temporarily
 - Load/Unload out of the weather
3. **Spill Response**
 - NEVER hose down a spill
 - Prompt “dry” clean-up of spills
 - Protect storm drains - hay bales/socks
 - Dispose of clean-up wastes properly



What led to RCRA?

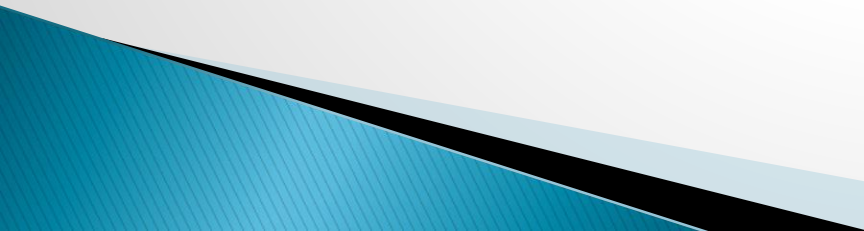
- ▶ **Industrial Revolution – acceptable dumping practices**
- ▶ **Energy crisis of 1973/1974 (concerns about resource conservation and recovery)**
- ▶ **Leaking landfills contaminate drinking water supplies**
- ▶ **Incidents**
 - **Times Beach, MO**
 - **Love Canal, NY**



History of RCRA

- ▶ Solid Waste Disposal Act (SWDA) of 1965
- ▶ Resource Conservation and Recovery Act (RCRA) of 1976
- ▶ Hazardous and Solid Waste Amendments (HSWA) of 1984
- ▶ Federal Facility Compliance Act (FFCA) 1992
- ▶ Land Disposal Program Flexibility Act of 1996
- ▶ **HW Generator Improvements Rule (5/30/2017)**
- ▶ **Authorized states MUST adopt more stringent rules by 7/1/2018**

- ▶ **Protect human health and the environment**
 - ▶ **Reduce solid waste and conserve energy/natural resources**
 - ▶ **Reduce or eliminate the generation of hazardous waste as expeditiously as possible**


 - ▶ **Minimize generation of hazardous waste by encouraging:**
 - **process substitution/materials recovery**
 - **properly conducted recycling and reuse**
 - **treatment**
- 

Where are the RCRA Rules Found?

RCRA - federal program defines/sets standards for hazardous waste activities of generators, transporters, and TSD facilities.

- ▶ **40 CFR Part 260 through 282 and 148**

Main Components

- **Identification of hazardous waste**
 - **Manifest tracking - “Cradle-to-Grave”**
 - **Operating standards for generators, transporters, and treatment, storage, and disposal facilities**
 - **Permit system for TSDFs**
 - **State authorization to assist in implementing program**
- 

Generator Standards

RCRA sets standards for generators to include:

- **Hazardous waste identification**
- **EPA ID number**
- **Proper storage of waste (container and tank requirements)**
- **Packaging and labeling requirements**
- **Manifest requirements**
- **Accumulation storage area inspections**
- **Personnel training**
- **Contingency plan and emergency procedures**
- **Preparedness and prevention**
- **Waste minimization**
- **Recordkeeping**

Treatment, Storage and Disposal Facility


Any person who treats, stores or disposes of hazardous waste is considered a TSDF – need approval feds/state

Disposal facility is defined as facility (or part) at which hazardous waste is intentionally placed, and will remain after closure

Activities are regulated as "disposal" if a facility is used for:

Discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid or hazardous waste into or on any land or water such that waste or constituents may enter environment, including air and waters

Transporter

- **Comply with Federal RCRA (delivery, clean-up, spill reporting)**
 - **Licensed (States)**
 - **DOT requirements (driver quals, hazmat training, insurance)**
 - **Accept waste in accordance with manifest system**
 - **Maintain copy of manifests for minimum of 3 years**
 - **Transfer facilities store waste in containers no greater than 10 days**
- 

Generator Classifications

Very Small Quantity Generator

- **Conditionally Exempt Small Quantity Generator**

Small Quantity Generator

Large Quantity Generator

- **Episodic Events (1X year)**
- 

Conditionally Exempt/Very Small Quantity (CE/VSQG)

< 100 kg (220 lbs.), and <1 kg (quart) /calendar month acute

Maximum accumulation: 1000 Kg (2200 lbs.)/no time limit

Identify all hazardous wastes

Send waste to a hazardous waste facility

- **Allow VSQG to ship waste to LQG under control of same person**

Small Quantity Generator (SQG)

100 - 1000 kg/calendar month and < 1 kg/month acute

Maximum accumulation: 6000 kg (13,228 lbs.)/180 days (270)

3010 notification and EPA Identification Number

Container and tank standards

Preparedness and prevention/emergency coordinator

Employee training

Manifesting

- **Must resubmit notification every two years (2/1 on even years)**

Large Quantity Generator (LQG)

>1000 kg/calendar month, or >1 kg/month acute

Maximum accumulation: No limit/90 days

Written Contingency Plan

Written training program/job descriptions

Control of air emissions

Comply with ALL hazardous waste rules

Acute hazardous wastes are those wastes that, in small doses, are capable of causing death or significantly contributing to irreversible and/or incapacitating illness (e.g., dioxins)

➤ Must resubmit notification every two years (3/1 on even years) with biennial report

What is a Solid Waste?

- ▶ Garbage, refuse, sludge and other discarded material
- ▶ Can be a solid, liquid, semi-solid or contained gaseous material
- ▶ A waste **MUST** be a Solid Waste **BEFORE** determined as Hazardous Waste!



RCRA defines a Solid Waste as a Hazardous Waste if it:

- ▶ **Is Specifically Listed - F, K, P, and U Series or has Certain Characteristics D Series**
- ▶ **Is a "Mixture" of Listed Hazardous Waste and Non-Hazardous Waste**
- ▶ **Listed hazardous waste "Contained In" soil or other environmental media**
- ▶ **Is "Derived-From" treatment of hazardous waste**
- ▶ **Is Declared as Such by the Generator "accurately"**

Types of Listed Hazardous Waste

F - Nonspecific Sources: Acetone F003 (I)

K - Specific Industrial Sources: (K001 - K151)

Toluene DiAmine (TDA) Production - K113 (T)

P and **U** series - discarded commercial chemicals

P - Acute Hazardous Waste: Phosgene P095 (T)

U -Toxic Hazardous Waste: Toluene Diisocyanate (TDI) U223 (R,T)

Characteristic Hazardous Waste

A waste is considered a characteristic hazardous waste if it exhibits one (1) or more following characteristics:

Ignitability

D001 (Paint, Dimethylformamide)

Corrosivity

D002 (Sulfuric Acid)

Reactivity

D003 (Silane)

Toxicity Characteristics

D004 through D043 (40 Chemical Constituents)

Ignitability (D001)

- ▶ **Liquid**
 - **Flash point <140 Degrees F (60 C)**
- ▶ **Non-liquid**
 - **Capable, under STP, of causing fire through friction**
 - **Ignitable compressed gas (DOT 49 CFR 173.300)**
- ▶ **Oxidizer (DOT 49 CFR 173.151)**

Corrosivity (D002)

- ▶ **Aqueous and has a pH \leq 2 OR \geq 12.5**
- ▶ **Liquid & corrodes steel at rate >0.25 inches per year at 130F**

Reactivity (D003)

- ▶ **Unstable/undergoes violent change (organic peroxides, silane)**
- ▶ **Violently water reactive/explosive certain metals - sodium**

Toxicity (D004 - D043):

A waste may be a toxicity characteristic waste if any of the chemicals listed are present in the waste sample extract, resulting from the application of the TCLP to the waste, in excess of the regulatory limit. (Method 1311)

The 40 toxicity characteristic waste chemical constituents consist of:

- **8 insecticides and herbicides**
- **8 metals**
- **24 organics**



<u>EPA</u> <u>Code</u>	<u>Contaminant</u>	<u>mg/L</u>
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin	0.02
D013	Lindane	0.4
D014	Methoxychlor	10.0
D015	Toxaphene	0.5
D016	214-D	10.0
D017	2,4,5-TP(Sivex)	1.0
D018	Benzene	0.5
D019	Carbon Tetrachloride	0.5
D020	Chlordane	0.03
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D023	o-Cresol	200.0

<u>EPA</u> <u>Code</u>	<u>Contaminant</u>	<u>mg/L</u>
D024	m-Cresol	200.0
D025	p-Cresol	200.0
D026	Cresol	200.0
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1, 1 -Dichloroethylene	0.7
D030	,4-Dinitrotoluene	0.13
D031	Heptachlor (and its. hydroxide)	0.008
D032	Hexachlorobenzene	0.13
D033	Hexachloro-1,3-Butadiene	0.5
D034	Hexachloroethane	3.0
D035	Methyl Ethyl Ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D043	Vinyl Chloride	0.2

Waste Examples

Process Generating Waste

EPA Code

Paint which contains MEK

D001 (I); D035 (T)

Contaminated MEK
(raw material)

U159 (I, T); D001 (I)

Solvent mixture used
in process cleanup

F005 (I, T); D001 (I)

Subpart C:



Subpart D:



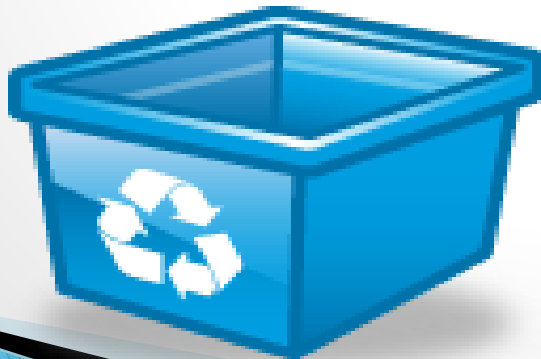
Contained In Rule

- ▶ Originally developed as policy regulating contaminated areas
- ▶ Applies to soil, groundwater & sediment contaminated by listed hazardous waste
- ▶ Media contaminated by a listed waste must be managed as listed waste
- ▶ Contained-In Policy applies to:
 - Contaminated laboratory equipment
 - Contaminated pallets
 - Dismantled scrubber components
 - Fluidized bed media
 - Spent carbon from fume treatment
 - Incinerator refractory
 - PPE



Universal Waste

- ▶ encourages recycling of the designated wastes both by industry and retail establishments
- ▶ covered universal wastes
 - nickel-cadmium and other batteries (lead-acid)
 - hazardous waste pesticides recalled or collected in a waste pesticide collection program
 - mercury-containing thermostats
 - fluorescent bulbs
 - electronics (state by state)



<p>UNIVERSAL WASTE</p> <p>FEDERAL LAW PROHIBITS IMPROPER DISPOSAL THE FOLLOWING MATERIALS ARE REGULATED AS UNIVERSAL WASTE IN ACCORDANCE WITH 40 CFR PART 273.</p> <p><input type="checkbox"/> UNIVERSAL WASTE - BATTERY(IES)</p> <p><input type="checkbox"/> UNIVERSAL WASTE - MERCURY THERMOSTAT(S)</p> <p><input type="checkbox"/> UNIVERSAL WASTE - MERCURY CONTAINING EQUIPMENT</p> <p><input type="checkbox"/> UNIVERSAL WASTE - PESTICIDE(S)</p> <p><input type="checkbox"/> UNIVERSAL WASTE - LAMP(S)</p> <p>ACCUMULATION START DATE: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX (REQUIRED DURING TRANSPORT, WHEN MATERIAL IS ALSO REGULATED BY 49CFR PARTS 173-180)</p> <p>HANDLE WITH CARE!</p> <p>Style UW05T © 2005 LABELMASTER® (800) 621-5806 www.labelmaster.com</p>

Used Oil

Used Oil if it is recycled or reclaimed does not have to be managed as a hazardous waste if it meets specific conditions:

- Includes any oil refined from crude oil or any other synthetic oil contaminated by chemical or physical impurities.
- Is not mixed with any listed hazardous waste.
- Contains less than 1,000 ppm total halogens.
- Does not exhibit a hazardous waste characteristic.

NOTE: Proper Federal terminology for labels and/or markings on containers and tanks is "Used Oil."



On-Site Accumulation

Large Quantity Generators

Accumulate Hazardous Waste On-site Up to 90 Days provided:

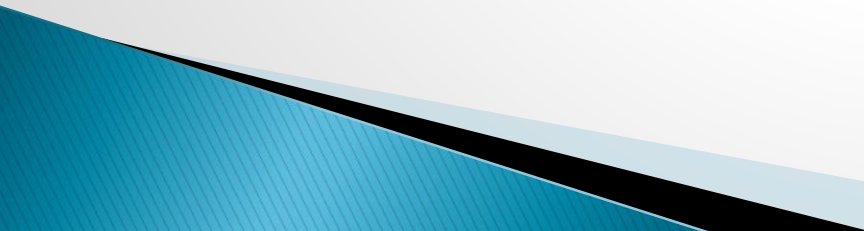
- **The Waste is Placed in Containers or Tanks**
- **The Accumulation Start Date is Clearly Marked and Visible On Each Container**
- **Each container or Tank is Marked: "Hazardous Waste"**
- **Preparedness and Prevention**
- **Contingency Plan and Emergency Procedures**
- **Training**



Satellite Accumulation Area:

- Volume limitation of 1 qt P-listed or 55 gallons of hazardous waste
- At or near point of generation under control of process operator
- One satellite area per waste stream at each point of generation
- No limit as to how long the waste can accumulate **

90-Day Accumulation Area: (Central Accumulation Area)

- No volume limitation
 - No requirement to be at or near the point of generation
 - Storage time is limited to 90-days
 - No limit as to the number of 90-day accumulation areas
- 

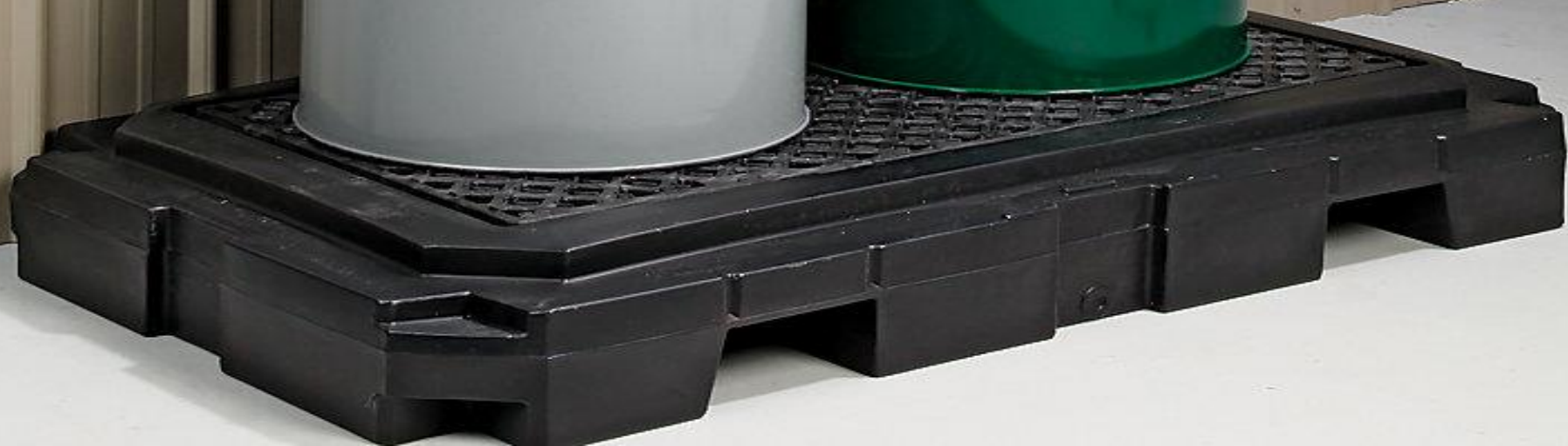
Satellite Accumulation

- ▶ Containers must meet the following requirements
 - Be in good condition/compatible with waste
 - Must be kept closed at all times
 - Marked with the words "Hazardous Waste" and the contents
- ▶ When accumulation has reached 55 gallons of hazardous waste (or 1 qt. P-listed):
 - Accumulation start date (the date the container(s) reaches 55 gallons must be noted on the container
 - Container must be transferred to a 90/180 Day Accumulation Area or to a permitted TSDF within 3 days **(72 hours)**



CAUTION
HAZARDOUS
WASTE AREA
LABELED DRUMS ONLY

**DRUMS
MUST BE KEPT
TIGHTLY
CLOSED
AT ALL TIMES**



90-Day Accumulation Area Requirements

- ▶ Conduct Weekly Inspections To Detect Leaks Or Deterioration
- ▶ Test and Maintain Emergency Equipment, Alarm System
- ▶ Physically Separate Incompatible Waste
- ▶ Ensure Aisle Space Between Containers (recommended as 30")
- ▶ Provide Access To Internal Communications/Alarm Systems and External Communications
- ▶ Keep Ignitable and Reactive Waste At Least 50 Feet From Property Line
- ▶ Access To Fire Fighting, Spill Control, Decontamination Equipment

State Requirements may differ!

Shipping & Manifesting Requirements

- ▶ Uniform Hazardous Waste Manifest (**e-manifest**)
 - Must accompany all hazardous shipments and in some states certain non-hazardous wastes
 - Must include Land Disposal Restriction paperwork for hazardous waste
 - ERG guide page if driver does not have book
- ▶ Labeling and Marking
 - Hazardous waste marking (yellow label)
 - DOT label (i.e., corrosive, flammable)

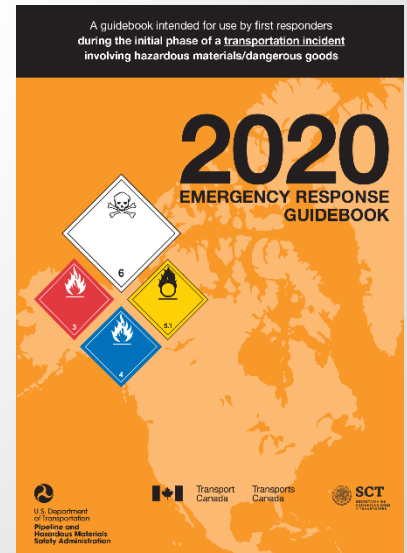


HAZARDOUS WASTE	
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL	
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.	
PROPER D.O.T. SHIPPING NAME _____ UN OR NA _____	
GENERATOR INFORMATION	
NAME _____	
ADDRESS _____ PHONE _____	
CITY _____	STATE _____ ZIP _____
EPA I.D. NO. _____	MANIFEST TRACKING NO. _____
DATE REMOVED FROM SERVICE _____	DATE PLACED IN STORAGE _____
TOTAL WT. IN KILOGRAMS _____	
CONTAINS HAZARDOUS OR TOXIC WASTES	
HANDLE WITH CARE!	

Completion of Manifests

Manifest must include the following information:

- ▶ **Generator, Transporter, and TSDF Information**
- ▶ **DOT Description of Waste**
- ▶ **Quantity of Waste**
- ▶ **EPA/State Waste Code**
- ▶ **Emergency Response Information**
 - **ERG Guide Number**
 - **24 Hour Phone Number (i.e., CHEMTREC 1-800-424-9300)**
- ▶ **Certification: Waste Minimization**



Land Disposal Restriction

Completion of LDR Form

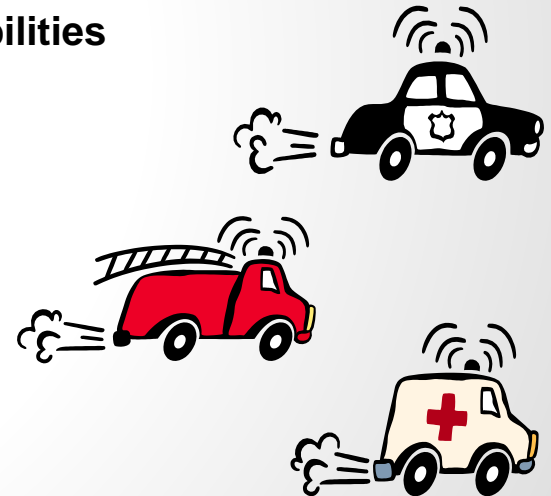
- ▶ **LDR Form** is required to accompany the Manifest
- ▶ **LDR Form** specifies the level or method of treatment for each waste that must be met prior to Land Disposal (required regardless of the method of disposal selected by the Generator)
- ▶ **LDR Form** shall include the following information:
 - **Generator Information**
 - **Manifest Number**
 - **EPA Waste Code(s)**
 - **Waste Description Sub-category**
 - **Wastewater / Non-wastewater Sub-division**

RCRA Contingency Plan

- ▶ **Applicability** - 90-day generators/TSDFs
- ▶ **Required Contents**
 - Describe facility response to spills, fire, explosions, or any unplanned sudden or non-sudden release
 - Describe arrangements with ER agencies (i.e., police, fire, hospitals)
 - List ER coordinators in order - names, addresses, phone numbers
 - List of ER equipment - physical description, location, capabilities
 - Evacuation plan
- **Plan MUST include “Executive Summary”**

Preparedness and Prevention

Minimize the likelihood of an accident due to hazardous waste management activities



Employee Training

Who must be Trained?

- ▶ All personnel involved in hazardous waste management (except satellite accumulation)
 - Small quantity generators
 - <90-day generators
 - TSDF facilities
- ▶ When in doubt, TRAIN !!!



Regulatory Enforcement

The EPA or authorized State has three (3) enforcement options under RCRA:

- Administrative sanctions or penalties
- Civil penalties
- Criminal penalties





criminal acts under RCRA carry severe Penalties.

- 1) Transporting waste to a non-permitted facility**
- 2) Treating, storing or disposing of waste w/o a permit**
- 3) Omitting information/false statement on any compliance document**
- 4) Not complying with recordkeeping and reporting requirements**
- 5) Transporting without a manifest**
- 6) Exporting waste without consent of receiving country**
- 7) Action resulting in imminent danger**

\$50K/day of violation and two years in prison

\$100K/day and four years in prison (repeat offenses)

\$250K/day and 15 years in prison for an individual or

\$1M for organization (applicable to act (7) only)



COMMON MISTAKES

Not covering/closing containers

Incorrect container labeling

Improper use or missing accumulation start date

Exceeding the three day time limit for full satellite containers

Improper training documentation

(i.e., job descriptions, titles/qualifications, frequency)

Failure to conduct inspections

Failure to update contingency plan

Clean Air Act (CAA)

- ▶ **CAA of 1970**

- National Ambient Air Quality Standards (NAAQS)

- ▶ **CAA of 1990**

- established Titles III, V, VII



Title III CAA

- ▶ **Hazardous Air Pollutants (HAPS) – 189 established**
- ▶ **Maximum Achievable Control Technology (MACT)**
- ▶ **Minor Source > 10 Tons/Year for 1 HAP**
- ▶ **Major Source > 25 Tons/Year for combination**
- ▶ **Control technologies identified - all HAP's**



Title V CAA

- ▶ **Created New Federal /State Permitting System**
- ▶ **Nationwide system of fees @ \$25/Ton**
- ▶ **Minimum tonnage levels for regulated pollutants established for inclusion in permits**
- ▶ **Long lead time for approval**
- ▶ **States manage program with Federal oversight**

Title VII CAA

Enforcement authority established

Criminal and Civil Penalties

Maximum \$25K/day per violation

Maximum Administrative penalty \$200K

NAAQS CAA

- ▶ Established for six criteria pollutants
 - Nitrogen Oxide (NOX)
 - Sulfur Dioxide (SOX)
 - Carbon Monoxide
 - Ozone
 - Lead
 - Particulate Matter
- ▶ Attainment vs. non-attainment areas
- ▶ New Source Performance Standards (NSPS)
- ▶ NSPS reviews impact to areas not just a state

Comprehensive Environmental Response, Compensation and Liability ACT (CERCLA)

- ▶ **History - passed by Congress in 1980**
- ▶ **CERCLA**
 - **Provide mechanism for response to cleanup activities**
 - **Accidental Spills & Abandoned Sites**
- ▶ **3 Basic Responses - Removal; Remedial Actions; Enforcement**
- ▶ **Goal of CERCLA - Primary Responsible Party (PRP)**

PRP to pay for Cleanup

Fed's pay and pursue PRP's

Superfund Amendment & Reauthorization Act (SARA)

- ▶ Five Titles
- ▶ Title III Emergency Planning & Community right to know (EPCRA)



EPCRA

- ▶ **Result of Bhopal India Incident**
- ▶ **Nationwide Program for emergency planning and reporting**

Five (5) areas of EPCRA:

- **Emergency Planning**
- **Emergency notification/release reporting**
- **Community Right to Know**
- **Toxic Release Reporting (Form R)**
- **Miscellaneous provisions**



Community Right to Know

- ▶ **Linked to OSHA's HazCom (GHS) Standard**
- ▶ **Manufactures/Importers of Hazardous Chemicals**
- ▶ **SDS's to SERC/LEPC and Fire Department**
- ▶ **Annual inventory of Chemicals**
- ▶ **Tier I & Tier II**
- ▶ **Due by March 1st of each year**



Tier I

- ▶ **Aggregate of all chemicals**
- ▶ **Estimate Average daily amount at Facility**
- ▶ **General Location of Chemicals**

Tier II

- **Chemical Specifics**
- **CAS Number/State of chemical**
- **Number of days chemicals on site**
- **Specific Storage Locations**

Toxic Release Inventory (TRI)

FORM R

Annual Report

Applies to operation with 10 or more employees

25,000 pound threshold

313 Chemicals

Environmental Program Development

Review all permits, regulatory requirements

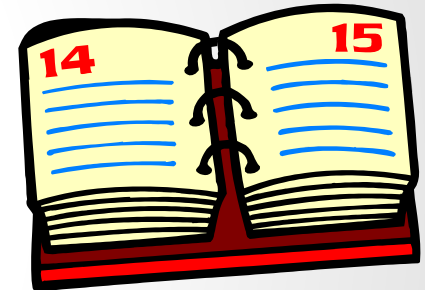
- Thoroughly read & understand each permit/regulation
 - contact Company resources/regulatory agencies

What are permits/regulatory requirements?

- Recordkeeping
- Reporting
- Sampling
- Inspections
- Training

Benefits

Standard Practice
Responsibilities delegated
Info available at all times
Change Management
Continuous Improvement





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