Westchester County

Department of Parks, Recreation & Conservation

HAZARD COMMUNICATION and RIGHT TO KNOW PROGRAM

Facility _____

I. General

The purpose of this instruction is to ensure that ALL Parks Department facilities are in compliance with the OSHA Hazard Communication Standard (HCS) 29CFR 1910.1200. The following procedures pertain to the facility identified above.

The Facility Manager is the overall coordinator of the facility program acting as representative of the Director of Operations who has overall responsibility.

In general, each employee in the facility will be apprised of the substance of the HCS, the hazardous properties of chemicals they work with, and measures to take to protect themselves from these chemicals.

II. List of Hazardous Chemicals

The Facility Manager will maintain a list of all hazardous chemicals used in the facility, and update the list as necessary. The facility and overall Department hazardous chemical list will be updated upon receipt of hazardous chemicals at the facility. The Department-wide list of hazardous chemicals is maintained at the main office at 450 Saw Mill River Rd, Ardsley in the office of the Director of Operations

III. Material Safety Data Sheets (MSDS's)

The Facility Manager will maintain an MSDS library on every substance on the list of hazardous chemicals at your facility. The MSDS will consist of a fully completed OSHA Form 174 or equivalent. The Facility Manager will ensure that each work area maintains an MSDS for hazardous materials used in that area. MSDS's will be readily available to all employees.

The Facility Manager is responsible for acquiring and updating MSDS's. The Facility Manager will review each MSDS for accuracy and completeness and will consult with the Director of Operations if additional research is necessary. All new procurements for the facility must be cleared by the respective Division Director. Whenever possible, the least hazardous substance will be procured.

MSDS's that meet the requirements of HCS must be fully completed and received at the facility either prior to, or at the time of receipt of the first shipment of any potentially hazardous chemical purchased from a vendor. It may be necessary to discontinue procurements from vendors failing to provide approved MSDS's in a timely manner.

IV. Labels and other Forms of Warning

The Facility Manager is designated to ensure that all hazardous chemicals in the park are properly labeled. Labels should list at least the chemical identity, appropriate hazard warnings, and the name and address of the manufacturer, importer, or other responsible party. Facility Manager will refer to the corresponding MSDS to verify label information. Immediate use containers, small containers into which materials are drained for use on that shift by the employee drawing the material, do not require labeling. To meet the labeling requirements of HCS for other in-house containers, refer to the label supplied by the manufacturer. All labels for in-house containers will be approved by Facility Manager prior to their use.

Facility Managers will check on a monthly basis to ensure that all containers in the facility are labeled and that the labels are up to date.

V. Training

Each employee who works with or is potentially exposed to hazardous chemicals will receive initial training on the HCS and the safe use of those hazardous chemicals. Additional training will be provided for employees whenever a new hazard is introduced into their work areas. Hazardous chemical training is conducted by the Facility Manager, under the guidance of the Director of Operations.

The training will emphasize these elements:

- A summary of the standard and this written program;

- Hazardous chemical properties including visual appearance and odor and methods that can be used to detect the presence or release of hazardous chemicals;

- Physical and health hazards associated with potential exposure to workplace chemicals;

- Procedures to protect against hazards, e.g., personal protective equipment, work practices, and emergency procedures;

- Hazardous chemical spill and leak procedures; and

- Where MSDS's are located, how to understand their content, and how employees may obtain and use appropriate hazard information.

The Director of Operations will monitor and maintain records of employee training and advise the Facility Manager on training needs.

VI.Contractor Employers

Facility Managers will advise outside contractors of any chemical hazards which may be encountered in the normal course of their work on the premises.

VII. Non-Routine Tasks

Maintenance or other supervisors contemplating a non-routine task, e.g. boiler repair, will consult with the local OS&H Manager or designee and will ensure that employees are informed of chemical hazards associated with the performance of these tasks and appropriate protective measures.

VIII. Additional Information

Further information on this written program, the hazard communication standard, and applicable MSDS's, is available from the Director of Parks, 450 Saw Mill River Rd, Ardsley PH: (914) 231-4558

Updated December 20, 2004/DCM
Updated September 8, 2010
Updated January 2011, LS
Updated April 2012, LS
Reviewed January 2013
Reviewed March 2016 mt

CONGRESS & EXPO

Understanding Solid and Hazardous Waste Management

Salvatore Caccavale, CPEA
Nationals Safety Council Congress and Expo
San Diego, California
October 7, 2010

journey to safety excellence

RCRA - By the end of the day!

- Scope of the regulations
- Generator Requirements
  - Requirements to accumulate
  - Tanks/Containers/Training
  - Definition of a Solid Waste
- Identification of Hazardous Waste
  - Listed
  - Characteristic
  - Exclusions!

RCRA - The basics

- DOT Requirements
- Manifest Shipments
- Recycle
- Contingency Planning
- Emergency Response Requirements
- Universal Wastes
- Training
- Job Descriptions

Federal Laws

Federal laws controlling hazardous chemical exposure to human health and the environment fall into five categories:

- Occupational
- Transportation
- Chemical Use
- Environmental Protection
- Cleanup

What led to RCRA?

- Environmental movement in early 1960's (Rachel Carson)
- Energy crisis of 1973 and 1974 (concerns about resource conservation and recovery)
- Leaking landfills contaminating drinking water supplies
- Incidents
  - Times Beach, MO
  - Love Canal, NY

Resource Conservation and Recovery Act

Public Concern	→	Love Canal
Legislature	→	RCRA
Agency	→	USEPA
Regulations	→	40 CFR

Goal

- To protect human health and the environment
- To reduce solid waste and conserve energy and natural resources
- To reduce or eliminate the generation of hazardous waste as expeditiously as possible

What are the objectives of RCRA?

- Minimize the generation of hazardous waste by encouraging:
  - process substitution
  - materials recovery
  - properly conducted recycling and reuse
  - treatment
- Treat, store or dispose of hazardous waste to minimize the present and future threat to human health and environment

GOAL: Establish a national program to protect the natural and other resources of the United States from the improper handling and storage of hazardous waste.

History of RCRA (42 USC 6901 et seq.)

- 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

Hazardous and Solid Waste Amendments of 1984 (HSWA)

- Significantly changed the RCRA regulations
  - minimum technological requirements
  - land disposal restrictions
  - underground storage tanks
  - corrective action
- Continued reliance on land disposal of untreated hazardous wastes would no longer be acceptable

Where are the RCRA Rules Found?

RCRA is a federal program which defines and sets standards for hazardous waste activities including generators, transporters, and TSD facilities.

- 40 CFR Part 260 through 282 and 148

How are the RCRA Rules Divided?

260 - Definitions and delisting procedures
261 - How to identify hazardous wastes
262 - Generator standards
263 - Transporter standards
264 - Permitted treatment, storage and disposal facilities
265 - Interim status treatment, storage and disposal facilities

How are the RCRA Rules Divided?

266 - Recycled waste and BIF (boilers and industrial furnace) rules
268 - Land disposal restrictions
270 - Permitting standards
271 - State authorization
272 - Approved state programs
273 - Universal wastes, batteries, pesticides and mercury containing thermostats

How are the RCRA Rules Divided?

279 - Used oil management
280 -282 Underground storage tanks
148 - Underground injection of hazardous wastes

RCRA - Organization of the Law

The Resource Conservation and Recovery Act of 1976, as amended, is the short title for Title II of Chapter 42 of the United States Code (42 U.S.C. 6905 and following); the proper title is Title II – Solid Waste Disposal

RCRA Subtitles:

Subtitle A: General Provisions
Subtitle B: Office of Solid Waste; Authorities of the Administrator
Subtitle C: Hazardous Waste Management
Subtitle D: State or Regional Solid Waste Plans
Subtitle E: Duties of the Secretary of Commerce in RCRA
Subtitle F: Federal regulations
Subtitle G: Miscellaneous provisions
Subtitle H: Research, Development, Demonstration and Information
Subtitle I: Regulation of Underground Storage Tanks
Subtitle J: Medical Waste Tracking Program

RCRA Main Components

The main components of RCRA include:

- 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

"Cradle To Grave Responsibility"

The ACT provided for the tracking from time of generation to disposal.

"Cradle To Grave" tracks hazardous waste from generator to transporter to TSD facility is to assure hazardous waste is handled in a manner that protects human health and the environment.

The generator has primary responsibility!

Generator Standards

Generators of hazardous waste are the first link in the "Cradle-to-Grave" management of hazardous waste. RCRA sets standards for generators which includes:

- 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 40 CFR 264, 265 and 270

Any person who treats, stores or disposes of hazardous wastes is considered a TSDF

Approval to operate from EPA or authorized state agency

Two step approval process

HW Treatment, Storage, Disposal Facility

- **Treatment** - any method or process to change the physical, chemical, or biological character or composition of waste (includes neutralizing; recovering energy or material; rendering nonhazardous or less hazardous; making safer for transport, storage, or disposal; making amenable for recovery or storage; reducing volume)
- **Storage** - holding hazardous waste for a temporary period at the end of which it is treated, disposed of, or stored elsewhere

HW Treatment, Storage, Disposal Facility

- **Disposal** facility is defined as facility (or part) at which hazardous waste is intentionally placed, and will remain after closure
- **Facility** - all contiguous land and structures, other appurtenances, and improvements used for TSD
- **Activities** will be 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

RCRA Permits for TSDFs (40 CFR 270)

- **TSDFs in existence in 1980 were granted "interim status" to continue operating without a final RCRA permit if they:**
  - **notified EPA of their HW management activities;**
  - **filed a preliminary (Part A) application**
- **TSDFs newly regulated by EPA rulemaking qualify for interim status (must notify EPA, submit new/revised Part A permit application)**
- **Interim status ends w/ receipt of final (Part B) permit**
- **New TSDFs and those that failed to qualify for interim status may not operate until they obtain a final permit (Parts A & B)**

RCRA Part A Permit Application

Part A permit application consists mainly of EPA forms (EPA Form 8700-23) which provide:

- **EPA ID number**
- **Name, location, address, point of contact for facility**
- **Owner and Operator information**
- **Nature of business and SIC codes**
- **Existing environmental permits**
- **Process codes and design capacities**
- **Description of hazardous wastes**
- **Map, drawings (facility layout), photographs**
- **Certifications**

Treatment, Storage and Disposal Facility Part "B" Permit

Part "B" permit allows a TSDF to accept, store, treat or dispose of hazardous waste with the following requirements:

- **waste analysis plan for incoming shipments;**
- **security measures;**
- **documented inspection program for malfunctions, operator errors & discharges;**
- **personnel training;**
- **handling and storage of ignitable, reactive and incompatible wastes;**
- **preparedness for and prevention of emergencies and releases;**
- **written contingency plan and emergency procedures;**
- **written operating records, manifest records and biennial reports of facility activities;**
- **groundwater protection for land disposal;**
- **closure plan and post-closure plan; and**
- **financial information regarding closure, post-closure, accidents and bankruptcy.**

Treatment, Storage and Disposal Facility
Part "B" Permit

TSDFs must be built in locations away from natural disasters. (floods, hurricanes, earthquakes, etc.)

Must be able to accept wastes, manage containers, and tanks.

Control, monitor and document volatile organic air emissions.

Comply with land disposal restrictions.

Maintain adequate insurance during operating and funding for closure & beyond.

RCRA Permit: General Conditions

- Duty to comply
- Duty to reapply (permit duration up to 10 years)
- Duty to halt generation to ensure compliance
- Take reasonable steps minimize releases, prevent adverse effects on human health and environment
- Properly maintain and operate facility
- Duty to provide requested information
- Allow entry and inspection
- Perform monitoring and maintain records
- Provide required reports and notifications
- Give advance notice of changes in activities

Transporter
40 CFR 263

- Comply with Federal RCRA (delivery, clean-up, spill reporting)
- Licensed (States)
- DOT requirements (driver qualifications, 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

State Hazardous Waste Programs
(40 CFR 271, 272)

40 CFR 271 - Specifies the procedures EPA must follow in approving, revising, and withdrawing interim and final authorization of State hazardous waste management programs and requirements State programs must meet to be approved by EPA

40 CFR 272 - Provides a listing of States and specific sections of RCRA regulations that the States have been authorized to administer and enforce in lieu of EPA

Generator Classifications

Conditionally Exempt Small Quantity Generator

Small Quantity Generator

Full or Large Quantity Generator

Conditionally Exempt Small Quantity

- Generator (CESQG) < 100 kg/Month (220 lbs.), and <1 kg/Month Acute
- Maximum Accumulation: 1000 kg

  No Time Limit
  - Identify all hazardous wastes
  - Send waste to a hazardous waste facility

That's it!

Small Quantity Generator (SQG)

- 100 - 1000 kg/Month, and < 1 kg/Month Acute
- Maximum Accumulation: 6000 kg (13K)/180 Days
- Up to 270 days if disposal is > 200 miles
- 8700-12 Initial Notification
- EPA ID Number
- 8700-12 Changes in Activity
- Containers closed, good condition, compatible, inspected weekly
- Tank standards (40 CFR 265.20)

Small Quantity Generator (SQG)

- Follow Packaging and Labeling Requirements
- Comply with Manifest Requirements
- Accumulation Storage Area Inspections
- Personnel Training
- Preparedness & prevention (arrangements, communications, emergency equipment etc)
- Emergency information posted adjacent to phone
- Good faith effort to reduce waste
- Recordkeeping

Large Quantity Generator (LQG)

- No quantity limit stored
- Maximum Accumulation: 90 Days

LQG STANDARDS

- 8700-12 Initial Notification/Changes in Activity
- EPA ID Number
- Containers closed, good condition, compatible, inspected weekly
- Tank standards (40 CFR 265.20)
- *Subpart CC - Air emissions*
- Follow Packaging and Labeling Requirements
- Comply with Manifest Requirements
- Accumulation Storage Area Inspections

LQG STANDARDS

- Personnel Training
- *Contingency Plan and Emergency Procedures*
- Preparedness & prevention (arrangements, communications, emergency equipment, etc.)
- Emergency info posted adjacent to phone
- *Waste Minimization Program*
- *Biennial report*
- Recordkeeping

Counting Is Critical

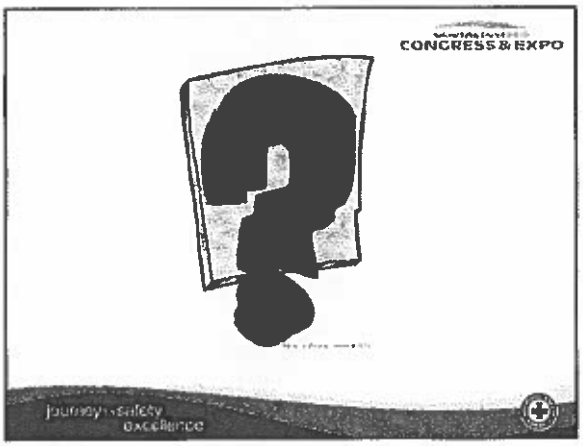
- Generator status is determined by "counting rules" of Part 261.5(c) and (d)
- Do not count the following wastes:
  - Wastes managed immediately in onsite elementary neutralization units or wastewater treatment units (permitted under CWA)
  - Waste managed immediately in onsite totally enclosed treatment facility
  - Residues in empty containers

Counting Is Critical

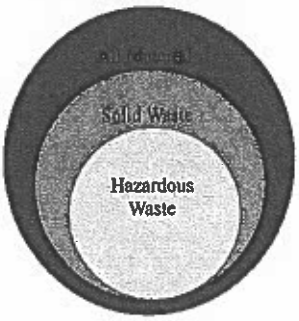
- Do not count the following Wastes:
  - Hazardous waste in active tanks, pipelines or Mfg.. process units
  - Analytical Samples
  - Treat ability Samples
  - Universal Wastes
  - As-generated used oil
  - TSCA PCB Wastes

Counting Is Critical

- Do not count the following Wastes:
  - Scrap metal
  - Spent lead acid batteries that are recycled
  - Treatment residues from wastes that were counted once
  - Spent materials recycled onsite that have been counted once



Solid and Hazardous Waste Universe



What is a Solid Waste?

- Can be a solid, liquid, semi-solid or contained gaseous material
- Garbage, refuse, sludge and other discarded material

Key Principle of RCRA

- A WASTE *MUST* BE A SOLID WASTE *BEFORE* IT CAN BE A HAZARDOUS WASTE!

What is a Solid Waste? 40 CFR 261.2

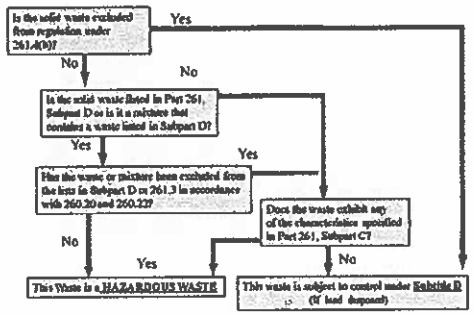
- *Any Discarded Material:*
- Abandoned by Being:
  - Disposed,
  - Burned, or
  - Incinerated, or
  - Accumulated Prior to These Activities

What is a Solid Waste? 40 CFR 261.2

- Recycled in Certain Ways:
  - Used in a Manner Constituting Disposal
  - Burned for Energy Recovery
  - Reclaimed
  - Accumulated Speculatively
- Considered Inherently Waste-Like When Recycled in Any Way (i.e., F020, F021 F022, F023, F026, F028)

Definition of a Hazardous Waste

Part 260 Appendix I



Exclusions

Materials which are not solid waste: 40 CFR 261.4

Any Waste Mixed with Domestic sewage
NPDES Wastewater discharges permitted under the CWAct
Irrigation return flows
Nuclear materials
In situ mining residues
Pulping liquor that is reclaimed
Secondary materials that are reclaimed and returned to original process (closed loop)
Spent sulfuric acid used to produce virgin acid
Shredded circuit boards in containers (mercury free)
Coke and coal tar residues when recycled
Dross residue for treating K061 in high temp metal recovery units

Exclusions - Domestic Sewage and NPDES

Domestic Sewage Exclusion (Indirect discharge)
- Applies to waste mixed with domestic sewage in sewer line leading to POTW
- Sewer must contain untreated sanitary waste
- Waste must arrive at POTW via domestic sewer lines

NPDES Exclusion (Direct discharge)
- Only applies to actual point source discharge

Not excluded:
- Wastewater collected, stored, or treated prior to discharge
- Sludge from wastewater treatment system

Must meet your permit limits! Local, State and Federal!

Exclusions

Solid Wastes which are not hazardous wastes: 40 CFR 261.4

- Household wastes
- Natural fertilizers
- Mining overburden returned to sites
- Fly Ash from fossil fuels
- Oil, natural gas, and geothermal production wastes
- Trivalent chrome wastes
- Mineral extraction, beneficiation, and processing wastes
- Cement kiln dust
- Used chlorofluorocarbons when reclaimed
- Petroleum contaminated media from USTs
- Non-terne plated used oil filters
- Wood preserved with arsenicals

Exclusions

Hazardous Wastes Exempted From Certain Regulations
40 CFR 261.4

- Wastes in active tanks, vessels, pipelines
- Analytical samples
- Treat ability samples
- Wastes in Totally Enclosed Treatment Facilities
  - Connected directly to a production process
  - Constructed and operated to prevent releases
  - Treatment/storage in tanks only
- Mixture of de minimis hazardous waste quantity and wastewaters
  - Discharge must be regulated under CWA
  - Wastewater must not be characteristic
  - Laboratory wastewaters must also meet all conditions under 261.3(a)(2)(iv)(E)

RCRA/CWA Interface

Elementary Neutralization Units

- Device used for treatment - exempt from RCRA permitting
- ENUs used only to neutralize wastes that are hazardous because of corrosivity
  - D002 characteristic wastes
  - Listed wastes because corrosive only
- ENU must meet definition of a "TANK"
- Includes flumes, gutters, troughs, & pipes

RCRA/CWA Interface

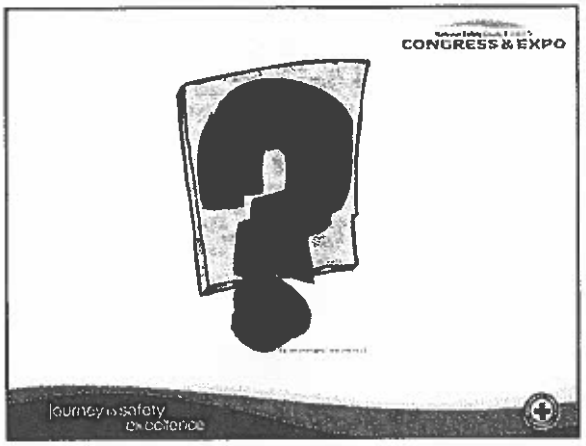
Wastewater Treatment Unit

- Part of CWA system - exempt from RCRA permitting
- WWTUs handle hazardous wastewater or wastewater treatment sludge
- WWTUs must meet the definition of a "TANK"
- Includes sludge processing devices digesters, thickeners, dryers, storage, presses, filters, sumps, etc.

RCRA / CWA Interface

Domestic Sewage Exclusion

- Widely used waste management alternative
- Hazardous waste discharge to sewer
- Two conditions required:
  - 1. Sewer contains untreated sanitary waste
  - 2. POTW receives thru domestic sewer lines
- POTW will enforce Clean Water Act pretreatment standards



Definition of Solid Waste

"Closed-Loop Recycling" 40 CFR 261.4

- Materials Reclaimed & Returned to original Process(es) in Which Generated
- Provided:
  - Only Tank Storage Is Involved
  - Reclamation does not Involve Controlled Flame Combustion
  - Never Accumulated Over 12 Months Prior to Reclamation
  - Not Used to Produce a Fuel or a Product Used in a Manner Constituting Disposal
  - Must be directly connected to a production process by pipeline or similar totally enclosed device
  - Must pose negligible potential for escape of constituents to environment.

Definition of Hazardous Waste –

Regulatory In General, 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

Hazardous Waste - 40 CFR Subpart D
Types of Listed Hazardous Waste:

F - Nonspecific Sources: Acetone F003 (I)

K - Specific Industrial Sources:
TDA Production K113 (T)

P - Acute Hazardous Waste: Phosgene P095

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

Listed Hazardous Waste
F - Spent Solvents Definition

- Does not include process wastes where solvents are used as reactants or ingredients in the formulation of commercial chemical products
- Must be used to solubilize or mobilize other materials examples: degreasing, cleaning, diluents, extractants
- Basis for Listing - toxicity, mobility, and persistence in the environment (and in some cases ignitability)

Listed Hazardous Waste
F - Spent Solvents Definition 40 CFR 261.31

- F001 - The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons (T)
- F002 - The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2,-trifluoro ethane, o-dichlorobenzene, trichlorofluoro-methane, and 1 1 2.trichloroethane (T)

Listed Hazardous Waste
F - Spent Solvents Definition 40 CFR 261.31

- F003 - The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol (I)
- F004 - The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene (T)
- F005 - The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane (I,T)

Listed Hazardous Waste
P&U Definition: 40 CFR 261.33

- Commercial chemical product or intermediate listed, including off-specification material
- Container residue or inner liner, unless emptied as per 261.7(b)
  - Applies to residues intended for discard
  - Doesn't apply to residues being beneficially used, reused, recycled, or reclaimed

Listed Hazardous Waste
P&U Definition: 40 CFR 261.33

- Spill residues (soil, water or debris)
- The phrase "commercial chemical product or manufacturing chemical intermediate" refers to:
  - Commercially pure grades and technical grades of the chemical
  - Formulations in which the chemical is the sole active ingredient
  - It doesn't refer to manufacturing process waste

Characteristic Hazardous Waste
40 CFR Subpart C

A waste is considered a characteristic hazardous waste if it exhibits one or more of the following characteristics:

- Ignitability - D001 (e.g. Paint, F.P. < 140F, Dimethyl formamide)
- Corrosivity - D002 (e.g. Sulfuric Acid) (pH < 2 > 12.5)
- Reactivity - D003 (e.g. Silane)
- Toxicity Characteristics - D004 through D043
  - (40 Chemical Constituents)

Characteristic Waste
40 CFR 261.21

Ignitability (D001):

Liquid
- Flash point less than 140 Deg. F (60 C)
- Pensky Martens Closed Cup Test
- Setaflash Closed Cup Test

Non-liquid
- Capable, under STP, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard
- EPA Method 1030, Ignitability of Solids
- Ignitable compressed gas (DOT)

- Oxidizer (DOT)

Characteristic Waste
40 CFR 261.22

Corrosivity (D002):

- Aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5
- Liquid and corrodes steel at a rate greater than 0.25 inches per year at 130F(55C)

Characteristic Waste
40 CFR 261.23

Reactivity (D003):

- Unstable & undergoes violent change
- Violently water reactive/explosive
- Generates toxics when mixed w/water
- Contains sufficient cyanide or sulfide which could be toxic in pH range of 2-12.5
- Capable of detonating at STP

Characteristic Waste
Definitions: 40 CFR 261.24

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.
- The 40 toxicity characteristic waste chemical constituents consist of:
  - 8 insecticides and herbicides
  - 8 metals
  - 24 organics

Characteristic Waste – Toxicity Characteristics

EPA Code	Contaminant	mg/L	EPA Code	Contaminant	mg/L
D004	Arsenic	5.0	D024	m-Cresol	200.0
D005	Barium	100.0	D025	p-Cresol	200.0
D006	Cadmium	1.0	D026	Cresol	200.0
D007	Chromium	5.0	D027	1,4-Dichlorobenzene	7.5
D008	Lead	5.0	D028	1,2-Dichloroethane	0.5
D009	Mercury	0.2	D029	1, 1 -Dichloroethylene	0.7
D010	Selenium	1.0	D030	,4-Dinitrotoluene	0.13
D011	Silver	5.0	D031	Heptachlor (and ex. hydroxide)	0.008
D012	Endrin	0.02	D032	Hexachlorobenzene	0.13
D013	Lindane	0.4	D033	Hexachloro-1,3-Butadiene	0.5
D014	Methoxychlor	10.0	D034	Hexachloroethane	3.0
D015	Toxaphene	0.5	D035	Methyl Ethyl Ketone	200.0
D016	2,4-D	10.0	D036	Nitrobenzene	2.0
D017	2,4,5-TP(Silvex)	1.0	D037	Pentachlorophenol	100.0
D018	Benzene	0.5	D038	Pyridine	5.0
D019	Carbon Tetrachloride	0.5	D039	Tetrachloroethylene	0.7
D020	Chlordane	0.03	D040	Trichloroethylene	0.5
D021	Chlorobenzene	100.0	D041	2,4,5-Trichlorophenol	400.0
D022	Chloroform	6.0	D042	2,4,6-Trichlorophenol	2.0
D023	o-Cresol	200.0	D043	Vinyl Chloride	0.2

Listed and Characteristic Waste Examples

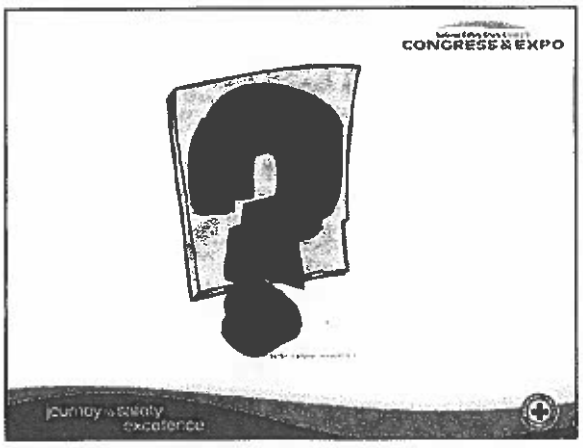
Process Generating Waste	EPA Code
Paint which contains MEK	D001, D035 (I) (T)
Contaminated MEK (raw material)	U159, D001 (I, T) (I)
Solvent mixture used in process cleanup	F005, D001 (I, T) (I)

Characteristic Waste Examples

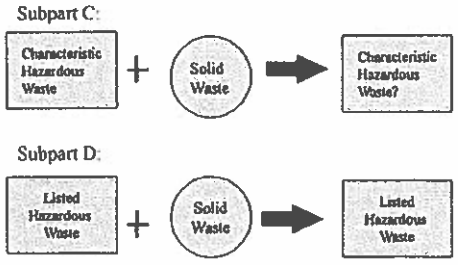
Material	EPA Waste Code
Waste Acetone/Water F.P. 100F	D001
Sulfuric Acid, pH<2	D002
Hydrochloric Acid, pH 2.4 (corrodes steel >.25 inches/yr)	D002
Caustic Soda Flakes	None
Waste Sodium Metal	D003
Sludge with Cadmium	D006

Waste Determination 40 CFR 262.11

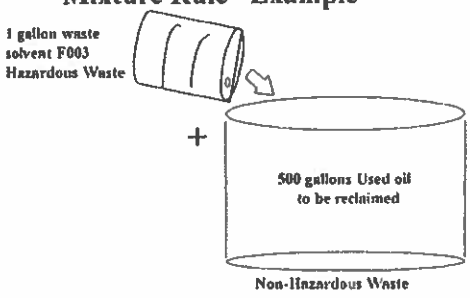
- A Generator Must Consider:
  - Waste Generation Process
    - Listed (i.e. K, F, P, U)
    - Non-Listed
  - Hazardous Constituents
    - Characteristics (Codes)
  - Analytical Data and Process Information
- A Generator Must Maintain:
  - Analytical Data
  - Waste Classification/Determination Documentation
  - Retain for 3 Years from the Date the Waste Was Last Sent Off-Site



"Mixture Rule" 40 CFR 261.3

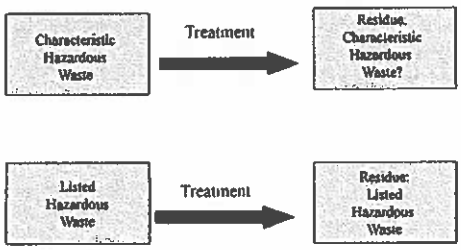


"Mixture Rule" Example



Result: 501 gallons of Hazardous Waste.
F003 waste solvent in used oil.

"Derived - From Rule" 40 CFR 261.3 (c), (d)

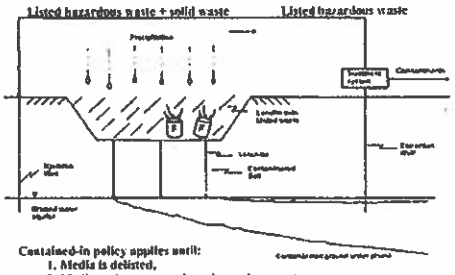


Contained-In Policy/Rule

- Originally developed as policy for regulating contaminated areas
- Applies to soil, groundwater & sediment contaminated by listed hazardous waste
- Mixture rule does not apply because media has not been "discarded"
- Contained-In Policy: media contaminated by a listed waste must be managed as listed waste

Basis for Contained-In Policy

Problems with the mixture rule



Contained-in policy applies until:
1. Media is delisted,
2. Media no longer contains a hazardous waste, or
3. Risk assessment shows no further hazard

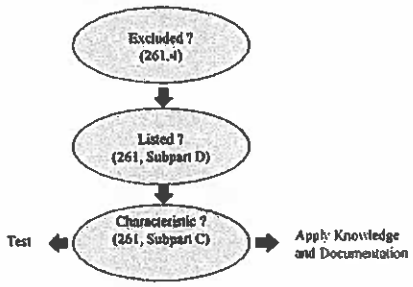
Contained-In Policy/Rule

- Under policy wastes cease to be hazardous (no-longer-contains determination) when:
  - hazardous constituents are removed by treatment
    or
  - risk assessment is used to show material poses no threat to human health & environment
- LDRs continue to apply after no-longer-contains determination

Contained-In Policy/Rule

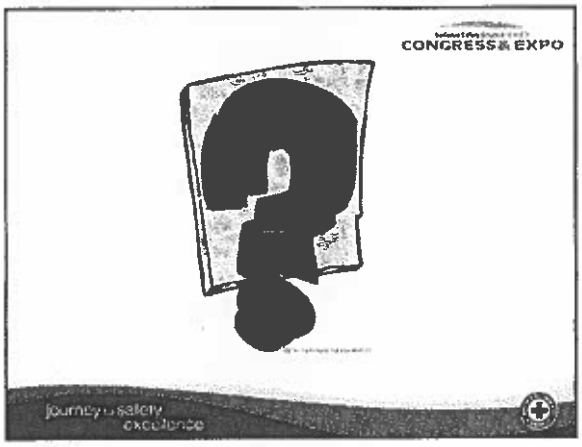
- Contained-In Policy also applies to:
  - Contaminated laboratory equipment
  - Contaminated pallets
  - Dismantled scrubber components
  - Fluidized bed media
  - Spent carbon from fume treatment
  - Incinerator refractory
  - PPE
- Codified as a rule for debris - only guidance for other materials.

Hazardous Waste Determination
40 CFR 262.11



*Note:

* Just because a waste contains a hazardous constituent, it does not mean that it is a hazardous waste. It must be listed, characteristic, toxic or reactive.



Accumulating Hazardous Waste

- A generator may accumulate Hazardous Waste in tanks and/or containers
- LQG
- CESQG
- SQG
- Satellite

But what is a tank?
What is a Container?

Containers & Tanks
Definitions: 40 CFR 260.10

"Container"
- Any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

"Tank"
- A stationary device, designed to contain hazardous waste, which is constructed primarily of non-earthen materials which provide structural support,
- Koppers Decision: "Parking Lot Test"

90-Day & Satellite Accumulation Area

Satellite Accumulation Area:
- Volume limitation of 1 qt P-listed or 55 gallons of hazardous waste
- At or near the point of generation under the control of the operator of the process
- 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:
- 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 Area
Area Requirements: 40 CFR 262.34

- Transfer containers off-site or to a 90-Day Accumulation Area within 3-days of reaching 55 gallons. Container must be dated when volume in area exceeds 55 gallons
- Maximum accumulation of 55 gallons for hazardous waste or 1 qt for P-listed waste
- At or near the point of generation under the control of the operator
- One satellite area per waste stream at each point of generation

Satellite Accumulation Area
Container Requirements: 40 CFR 262.34

- Containers must meet the following requirements
  - Be in good condition
  - Be compatible with waste
  - Must be kept closed at all times
  - Marked with the words "Hazardous Waste" or the contents
- When the accumulation has reached 55 gallons of hazardous waste (or 1 qt P-listed):
  - The accumulation start date (the date the container(s) reaches 55 gallons must be noted on the container
  - The container must be transferred to a 90 Day Accumulation Area or to a permitted TSDF within 3 days
- Not subject to Subpart CC air emission rules

Satellite Accumulation Areas
Suggestions

- Mark area(s) with signs and/or floor markings
- Label area as "Satellite Accumulation Area for _____"
- No container greater than 55 gallons (or 1 qt for P-listed)
- If more than one satellite is in the immediate area, clearly mark the areas as being separate
- Use the satellite provision to your advantage. No limit to the number of satellite areas a site may have
- Do not double satellite

On-Site Accumulation
Large Quantity Generators:40 CFR 262.34(a)

May Accumulate Hazardous Waste On-site Up to 90 Days, *Provided:*

- The Waste is Placed in Containers or Tanks per 40 CFR 265 Subparts I & J
- The Accumulation Start Date is Clearly Marked and Visible On Each Container
- Each container or Tank is Marked: "Hazardous Waste"
- Preparedness and Prevention (40 CFR 265)
- Contingency Plan and Emergency Procedures (40 CFR 265)
- Training (40 CFR 265.16)

On-site Treatment
Large Quantity Generators:40 CFR 262.34 (a)

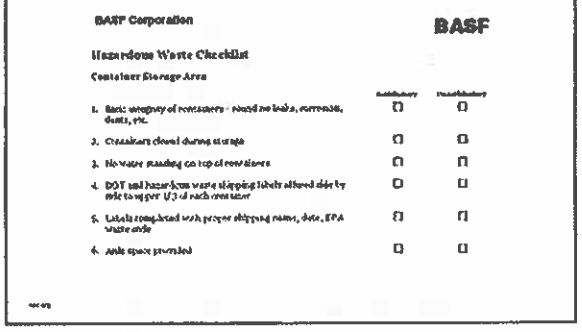
- Treating waste in tanks or containers
  - Tanks must comply with Part 265 Subpart J
  - Containers must comply with Part 265 Subpart I
  - Accumulation start date must be marked/tracked
  - Must be completely emptied every 90 days
  - Must comply with Subpart CC air emission control standards
- Not applicable if other exclusions or exemptions (i.e., wastewater treatment, etc.) apply

90-Day Accumulation Area
Area Requirements for Containers: 40 CFR 262.34

- 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!

Sample Checklist


BASF Corporation

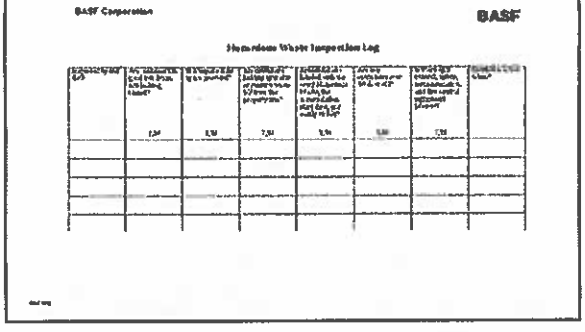
BASF

Hazardous Waste Checklist

Container Storage Area

1. Basic integrity of containers - sound no leaks, corrosion, dents, etc.	☐	☐
2. Containers closed during storage	☐	☐
3. No water standing on top of containers	☐	☐
4. DOT and hazardous waste shipping labels affixed side by side to upper 1/3 of each container	☐	☐
5. Labels completed with proper shipping name, date, EPA waste code	☐	☐
6. Aisle space provided	☐	☐

Sample Inspection


BASF Corporation

BASF

Hazardous Waste Inspection Log

90-Day Accumulation Area

Container Requirements: 40 CFR 265, Subpart I

- Containers Must Be In Sound Condition
- Constructed Of An Appropriate Material To Be Compatible With The Waste And Prevent Leakage
- Kept Closed Except When Adding Or Emptying Waste
- Kept Clean Of Spilled Material
- Handled And Stored So As Not To Cause Rupture Or Leakage
- Meet Subpart CC Air Emission Requirements:
  - Meeting DOT requirements or covering Level 1 (26-121 gal)
  - Meeting DOT or no detectable emissions for Level 2 (>122 gal)
  - 95% emission controls for Level 3 (stabilization)

90-Day Accumulation Area

Labeling Requirements for Containers: 40 CFR 262.34

- Upon initial collection of hazardous waste the container must be-marked with:
  - The words "Hazardous waste"
  - The accumulation start date (the date the collection of hazardous waste begins, not when the container becomes full)
- Containers can be transferred between 90 day areas as needed
- *No container of hazardous waste may remain in a 90-day accumulation area beyond 90-days from the accumulation start date*

Empty Container Management

A Container Is Empty If:

- All wastes have been removed using common practices, and
- Total capacity remaining is less than 3 % (wt.) if container is 110 gallons or less, or 0.3% if container is >110 gallons
- No more than 1 inch (2.5 cm) of residue remains, and
- With regards to the one inch residue limit, the EPA emphatically states:
  "... it should be clear that the one inch of waste material is an overriding constraint and may remain in an empty container only if it can not be removed by normal means." [47 FR 36093]

Empty Container Management

- A Container (or inner liner) That Held An Acute Hazardous Waste , (P-listed) Must Be Triple Rinsed
- *Triple Rinsing Is Not Treatment!*
- The rinsate is a hazardous waste!
- Residues from empty containers, after rinsing, are not hazardous waste

Empty Container Management

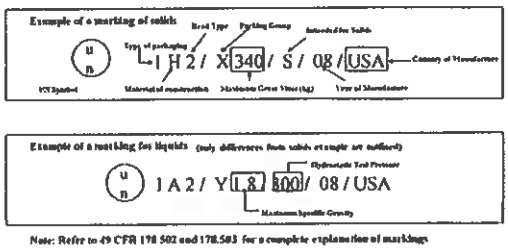
An empty container is closed if:

- All closures on the container are in place, this includes:
  - Bungs and
  - Lids, rings, and bolts for open top containers
- No holes or punctures are present

Empty Container Management

- Labels and markings should be in place as if the drum contained it's original contents, these labels include:
  - Product labeling
  - HAZCOM labeling, and
  - DOT labeling
- Requirements may vary per drum recycler

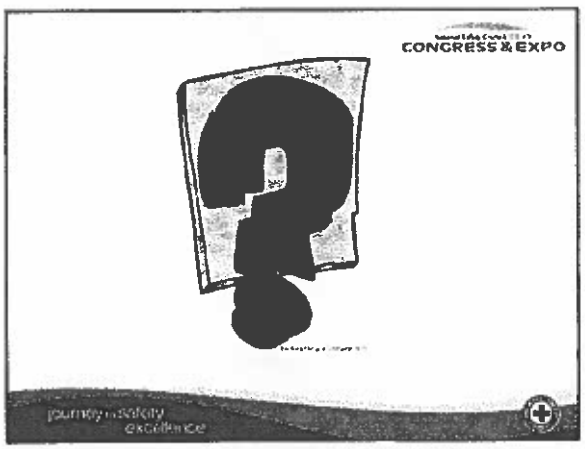
How to Decipher U.N. Markings on Hazmat Packaging

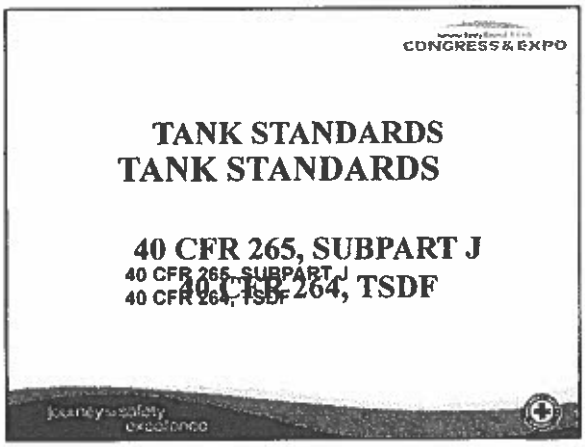


Note: Refer to 49 CFR 178.502 and 178.503 for a complete explanation of markings

Aerosol Cans

- Hazardous Waste Determination
  - Did the cans contain material that would meet the definition of hazardous waste?
  - Are the cans RCRA empty?
  - Has propellant been removed during normal use?
- Puncturing cans may be considered treatment
- Use Scrap metal exemption if possible





TANK STANDARDS
40 CFR 265, SUBPART J

- Integrity Assessments
  - Written integrity assessment Certified by independent PE
  - Certification that system has sufficient structural integrity for storing HW
- Detection and Containment of Releases
  - Secondary containment for tanks and ancillary equipment
  - Leak detection within 24 hours of failure
  - Designed to remove liquids

TANK STANDARDS

- Operation and Inspection
  - Must use appropriate controls/practices to prevent spills and overflows
  - Above ground portions inspected daily
  - Corrosion protection inspected bimonthly
- Closure/post Closure
  - Decontaminated or Removed as hazardous waste

Tank Standards
Containment And Detection of Releases:
40 CFR 265.193(d)

- Exemptions
  - Tank inside building and no free liquid
  - Granted formal variance by agency
- Secondary containment systems must include one or more of the following devices:
  - Liner (external to tank)
  - Vault
  - Double Walled Tank
  - Equivalent device approved by EPA
- Meet general and system-specific design standards

Tank Standards
Containment and Detection of Releases:
40 CFR 265.193(b) & (c)

- Secondary Containment Design - General
  - designed, installed, and operated to prevent migration of any wastes and liquids
  - capable of detecting and collecting releases of liquids until the material is recovered
- Construction Material Compatible With Wastes
- Sufficient Strength and Thickness to Prevent Failure
- Foundation / Base Capable of Providing Support
- Leak Detection System Must Detect Failure Within 24 Hours

Tank Standards
Containment and Detection of Releases:
40 CFR 265.193(e)

External Liners must include the following:

100% containment of the largest tank

- Prevent precipitation run-on or infiltration (Unless designed to contain the 25-year, 24-hour rainfall event)
- Free of cracks or gaps
- Designed/installed to completely surround tank and cover surrounding earth (i.e., capable of preventing lateral as well as vertical migration)

Tank Standards
Containment and Detection of Releases:
40 CFR 265.193(f)

Ancillary Equipment
must have Full Secondary Containment (e.g., Trench, Jacketing, Double-walled Piping)

- Includes equipment from tank to point of generation (POG) in process
- Meets Full Secondary Containment Standards
- Not required for the following if visual daily inspections are performed and *documented*:
  - Aboveground Piping (Except Flanges, Joints, Valves, and Connections)
  - Welded Flanges, Welded Joints, & Welded Connections
  - Seal less or Magnetic Coupling Pumps & seal less Valves
  - Pressurized Aboveground Piping With Auto. Shutoff Devices

Tank Standards

General Operating Requirements & Inspections
40 CFR 265.194 & 195

- Must Use Appropriate Controls & Practices to Prevent Spills & overflows, at minimum:
  - Spill Prevention Controls (e.g., Check Valves, Dry Disconnect Couplings)
  - Overfill Prevention Controls (e.g., Level Sensing Devices, High Level Alarms, Auto. Feed Cutoff, or Bypass)
- Inspect at Least Once Per Day
  - Overfill/Spill Control
  - Aboveground Portions of the tank
  - Leak Detection/Monitoring Data
  - Construction Materials (Secondary Containment)
  - Surrounding Area

Tank Standards

General Operating Requirements & Inspections

- Document Daily Operating Records
- Remove Spills, Leaks, Or Precipitation From Secondary Containment Within 24 Hours
- Meet Subpart BB Requirements
- Meet Subpart CC Requirements
  - Level 1
  - Level 2

RCRA Air Emission Standard

Subpart BB & CC

Key Exclusions

Units exempt from RCRA permitting, interim status and <90-day standards also exempt from Subpart BB & CC

- Wastewater treatment units
- Elementary neutralization units
- Totally enclosed treatment units
- Hazardous waste recycling units at TSDF
- Emergency & spill management units
- Units undergoing closure under an approved closure plan
- Units with CAA NESHAP or NSPS controls
- Tanks with process vents meeting Subpart AA

RCRA Air Emission Standard

Subpart BB - LDAR

- Affects permitted, interim status, < 90-day generator tank systems
- Applies to stationary equipment containing/contacting >10% HW organics
  - Valves, Pumps, Compressors, Sampling connections
  - Pressure relief valves (PRV), Open ended lines (OEL)
- Requires monitoring by Method 21 (e.g. OVA) at specified frequency
- Leaks repaired ASAP but no later than 15 days
- First attempt at repair within 5 days
- Monitoring not required for leakage discharged to control device

RCRA Air Emission Standard

Subpart BB - LDAR

Pumps - Light Liquid Service (>.04 PSIA)

- Monitoring frequency method 21
  - Double mechanical seals: NA
  - Can Pumps: yearly
  - All others: monthly
- Leak definition: 10,000 PPM
- Must be visually inspected weekly

RCRA Air Emission Standard

Subpart BB - LDAR

Valves - Light Liquid Service

- Monitoring frequency method 21
  - Leak less designed valves: Annually
  - All Others: Monthly
- Leak definition: 10,000 PPM

RCRA Air Emission Standard
Subpart BB - LDAR

Compressors

- Requires annual monitoring by Method 21
- Leak definition: 500 PPM
- Emissions >500 above background requires double mechanical seal system with barrier fluid and alarms

RCRA Air Emission Standard
Subpart BB - LDAR

PRVs - Gas/Vapor Service

- Leak definition: 500 PPM above background
- Monitoring frequency: Initially and no later than 5 days after release

Sampling Connections

- Must be equipped with closed-purge system

OELS: Must be capped or plugged

RCRA Air Emission Standard
Subpart BB - LDAR

Pumps and Valves in Heavy Liquid Service, PRVs in Liquid Service and Connectors

- Must be monitored via Method 21 if a visual leak is detected
- Leak definition: 10,000 PPM

RCRA Air Emission Standard
Subpart BB - LDAR

Key Recordkeeping Requirements

- List of equipment ID numbers
- Monitoring results
- Detailed leak repair records
- Inspection records

RCRA Air Emission Standard
Subpart CC - Tanks

- Affects permitted, interim status, and < 90-day generator tanks systems
- Applies to units that receive hazardous waste and each waste stream at its point of origination has an average VO concentration of ≥ 500 ppmw
- Level 1 or Level 2 tank controls
- Specific inspections, monitoring, & recordkeeping
- Repairs within 5 days - if can't be repaired within 45 days, empty and remove from service

RCRA Air Emissions Standard
Subpart CC - Tanks

- Level 1 Controls - Fixed roof with no capture or destruction of vapors
  - Maximum organic vapor pressure cannot exceed specified limits based on tank size (see table)
  - Tank is not heated above the temperature at which the vapor pressure was measured
  - No waste stabilization
- Level 2 Controls - Required for any tank that doesn't meet the above conditions
  - Fixed roof vented through a closed vent system
  - Internal floating roof
  - External floating roof
  - Pressure tank
  - Enclosure vented to combustion control device

Level 1 Controls - Subpart CC

Fixed Roof with No Capture or Destruction Of Vapors

Tank Size	Vapor Pressure
≥ 151 m^3 (Approx. ≥ 40,000 gal)	≤ 5.2 kPa (approx < 0.75 psi)
≥ 75 m^3 and < 151 m^3 (approx ≥ 20,000 and < 40,000 gal, respectively)	≤ 27.6 kPa (approx < 4.0 psi)
< 75 m^3 (approx <20,000 gal)	< ≤ 76.6 kPa (approx < 11.1 psi)

Accumulation in Tanks
40 CFR 265, Subpart J

- Tanks Must Be Emptied at Least Once Every 90 Days
- Accumulation Begins When Waste First Enters an Empty Tank

"Empty":

When the Contents Have Been Drained to the Fullest Extent Possible

General Guidance:

Generators Should Allow Drainage System to Be Open Until a Steady Continuous Flow Has Ceased

Tank Standards : Releases
40 CFR 265.196(d)

Should a release occur, remove from Service immediately and satisfy the following requirements:

Stop flow of waste into the tank/containment system and inspect to determine cause

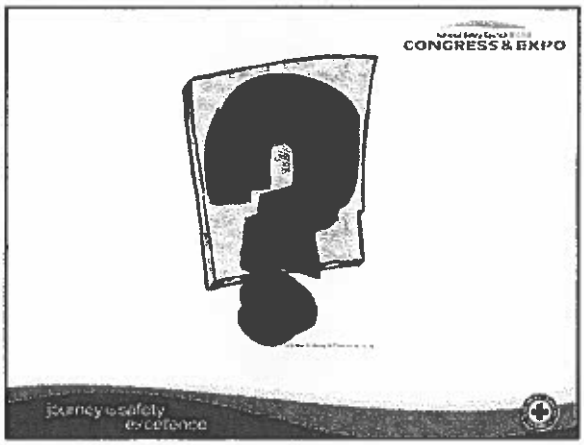
- Remove waste from the tank/containment system w/i 24 hours
- Contain/prevent releases to the environment
- Notify EPA w/i 24-hours and submit written report w/i 30 days, except for spills/releases:
  - less than or or equal to 1 pound, and;
  - immediately contained and cleaned-up
- Comply with provisions for secondary containment repair or closure
- Certify all major repairs

Closure Requirements 90-day
Container Area & Tank
40 CFR 262.34(a)(1)

- Must Meet Closure Performance Standard (40 CFR 265.111)
  - Minimize need for further maintenance
  - Controls, minimizes, or eliminates to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.
- Requires all residues, contaminated equipment, structures, and soil to be disposed of or decontaminated
- Closure Plan, Financial Assurance not Required

90-day Container & Tank Closure Requirements/Recommendations

- Document your plan and results achieved
- Use a BDAT and common sense in the development of your plan
- Use a photo log or video log
- If there is any evidence of leaks or spills, document your clean-up measures
- Identify any pathway to groundwater resources
- Include in your documentation why you feel clean closure was achieved
- Document closure not only to satisfy the performance standard but also for potential Corrective Action



Universal Wastes

Regulatory

- Regulated Under 40 CFR Part 273
- Authorized States Must Have Incorporated UW Or You Must Manage as HW

Applicable Waste Streams

- Hazardous Waste Batteries
- Hazardous Waste Pesticides
- Hazardous Waste Mercury Thermostats
- Hazardous Waste Lamps

Universal Wastes

Standards for Small Quantity Handlers

1. Waste Management
   - Must Manage In A Way To Prevent Releases To Environment
   - Certain Activities Under Each Waste Category Allowed
     - Mixing/Sorting Batteries
     - Regenerating Used Batteries
     - Removing Mercury Ampules from Thermostats Under Specified Conditions

Universal Wastes

2. Labeling / Marking
   - Each Container Must Be Labeled:
     - Universal Waste - Batteries
     - Universal Waste - Pesticides
     - Universal Waste - Mercury Thermostats
     - Universal Waste - Lamps
     - Date When Storage Began

3. Accumulation Time Limits
   - No Longer Than One Year
4. Employee Training On Handling Emergency Procedures
5. Ship to RCRA TSDF On Approved List - Maintain Records

Used Oil Management Standards (40 CFR 279)

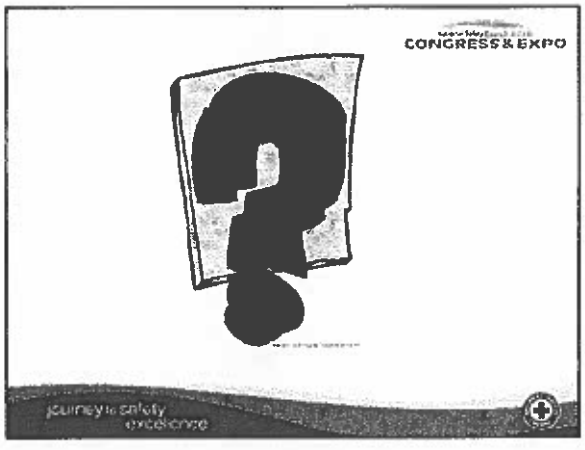
- Standards for used oil generators, collection centers, and aggregation points
- Standards for used oil transporters and transfer facilities
- Standards for used oil processors and re-refiners
- Standards for used oil burners who burn off-specification used oil for energy recovery

Used Oil Management Standards (40 CFR 279)

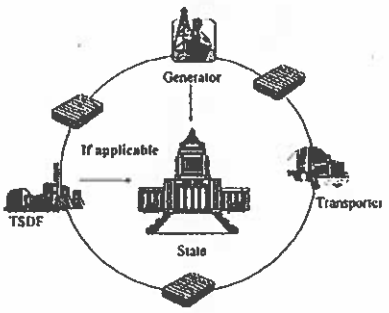
Used Oil if it is recycled or reclaimed does not have to be managed as a hazardous waste if it meets specific conditions:

- Includes any oil that has been refined from crude oil or any other synthetic oil that has been 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 terminology for labels and/or markings on containers and tanks is "Used Oil."



Manifest Distribution



Hazardous Waste Manifest System

Tracks waste:

FROM where it was generated TO where it ends up USING the uniform hazardous waste manifest

What's on the form?

The manifest provides information about:

- generator of the waste,
- facility that will receive the waste,
- description & quantity of the waste, and
- how the waste will get to receiving facility

Shipping & Manifesting Requirements

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

Completion of Manifests

A Manifest must Include the following :

- 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
  - Certification: Waste Minimization/TSDF Selection
- TSDF Approval Number
- Statement: "Return to Generator if undeliverable"

Generator's Certification
Waste Minimization

If I am a large quantity generator, I certify that 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 that 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, OR

If I am a SQG, I have made a good faith effort to minimize waste generation and select the best management method that available that I can afford

Generator's Certification - DOT

I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and nation government regulations.

Where do I get the manifest?

www.epa.gov/epaoswer/hazwaste/gener/manifest/

registry/printers.htm

JJ Keller
Labelmaster

How to Legally Offer a RCRA Hazardous Waste Shipment for Transportation

Environmental  HAZMAT Coordinator

Determine EPA/State Codes
Determine DOT Hazard Class (49 CFR 172)
Select the most accurate proper shipping name
DOT Hazardous Material Table
Check list for Hazardous Substance
Mark/Label container(s)
Shipping papers (manifest)
Placarding

Pre-Transport Labeling Requirements 40 CFR 262, Subpart C

Before shipping hazardous waste off-site, a generator must comply with the following:

- Package the waste as per DOT regulations
  - (49 CFR 173,178, & 179)
- Label and Mark each container as per DOT regulations
  - (49 CFR 172)
- Mark each container of 110 gallons or less as follows:
  HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public authority or the U.S.. Environmental Protection Agency,
  Generator's Name and Address: _____
  Manifest Document Number: _____
- Placard or offer the transporter the appropriate placard
  - (49 CFR 172, Subpart F)

Waste Shipment
Record keeping & Reporting

- Manifests, Biennial Reports, Waste Analysis And Exception Reports For Minimum of Three Years
- Submit Biennial Report by March 1st of Even Numbered Year For Previous Year
- Submit Exception of Manifest Return Copy Not Received Within 45 Days

Land Disposal Restrictions
(40 CFR 268)

- HSWA prohibited land disposal of hazardous waste unless the waste meets treatment standards established by EPA
- The treatment standards must substantially diminish the toxicity or mobility of hazardous waste such that short- and long-term threats to human health and the environment are minimized.

Land Disposal Restrictions

- 40 CFR 268
  - Hazardous Waste Which Does Not Meet Treatment Standard is Prohibited from Land Disposal
  - Treatment Standards Found in 268.40 and 268.48 (underlying hazardous constituents)
  - Dilution is Prohibited
- Land Disposal Includes:
  - Landfill
  - Surface Impoundment
  - Waste Pile
  - Injection Well
  - Land Treatment/Land Farm
- Treatment Standards
  - Concentration
  - Technology

Land Disposal Restrictions

- Congress mandated that standards for hazardous wastes identified as of HSWA (1984) were to be promulgated by "hammer" dates after which land disposal was prohibited
- Standards for hazardous wastes identified after HSWA are to be promulgated within 6 months after the wastes become regulated (but no "hammer" dates were set for these newly identified wastes)

Land Disposal Restrictions

- Land disposal of prohibited waste without meeting the treatment standards is only permissible where there is a reasonable degree of certainty that there will be no migration for as long as the wastes remain hazardous (No Migration Variance)
- Storage of LDR restricted wastes is only permissible to accumulate sufficient quantities to facilitate proper recovery, treatment, or disposal waste not meeting LDRs can't be stored >1yr without good reason
- Dilution is prohibited as a substitute for proper treatment
- LDRs apply at the point of generation of the waste

Land Disposal Restrictions

- Hazardous wastes not prohibited from land disposal:
  - Wastes granted a No Migration Variance
  - Waste for which standard is not developed or in effect
  - Decharacterized wastes disposed in SDWA Class I Injection wells
  - Characteristic wastes (except D003 reactive cyanide) not subject to specified technology standard if first decharacterized in in CWA or CWA-equivalent system
  - *De minimis* losses of characteristic waste
  - CESQG hazardous waste
  - Waste pesticide disposed by farmers
  - Universal waste managed under 40 CFR 273

Land Disposal Restrictions

- EPA establishes LDR treatment standards based on the performance of best demonstrated available technology (BDAT) for a hazardous waste (e.g., 99.99% DRE incineration of certain organics; precipitation of dissolved metal ions in wastewaters; biological treatment of dilute organics in WWTFs)
- Generators can request alternate standards for their waste via treatability variances demonstrating that their hazardous waste is fundamentally different from that evaluated by EPA in establishing the LDR standard

Alternate LDR Treatment Stds for Lab Packs (40 CFR 268.42)

- Lab packs may be treated in an incinerator in accordance with Part 264/265 Subpart O under the following conditions:
  - Lab packs must be managed in accordance with 264/265.316
  - No wastes listed in Part 268 Appendix IV allowed e.g., (D009 Hg, Cr pigment K-wastes, As-containing P-wastes)
  - Incinerator residues from lab packs containing characteristic metal wastes must be treated to meet 268.40 standards

Land Disposal Restrictions
Key Questions

1) Is the Material a HW?
2) What is the Applicable EPA HW Number(s)?
3) Is the Material Wastewater?
   - <1.0% TOC and <1.0% TSS
4) What is the Intended Disposition of the Waste?
   - CWA or Non-CWA System
5) What is the Applicable Treatment Standard(s)?
   - 268.40 Table
   - 268.48 Table (UTS)
6) What is the LDR Notification Requirement?

Note: Proper waste determination is critical to ensure proper selection of applicable LDR standard

Land Disposal Restrictions
Underlying Hazardous Constituents(UHC)

- UHC Regulated in:
  - D001 (except high-TOC)*
  - D002 - D043*
- Effective for characteristic metals in 1998

* When not managed in CWA/CWA-equivalent system or Class I injection wells.

Land Disposal Restrictions
Monitoring

EPA Required Monitoring of UHC "Reasonably Expected to be Present," Based on:

- Knowledge
  - Raw Materials
  - Process
  - Reaction Products
- Analysis

EPA has stated that "normally, at least some waste analysis is needed to make a good faith showing for the treatment standard..., given the number of hazardous constituents covered"

Land Disposal Restriction
Completion of LDR Form

LDR Form is Required to Accompany the Manifest

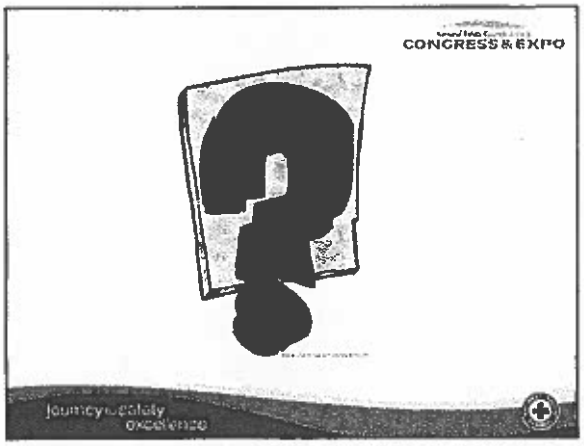
LDR Form Specifies the Level or Method of Treatment for Each Waste that Must be Met Prior to Land Disposal

LDR Form Shall Include the Following Information:

- Generator Information
- Manifest Number
- EPA Waste Code(s)
- Waste Description Sub-category
- Wastewater / Non-wastewater Sub-division

Land Disposal Restriction
Distribution Of Paperwork

- Send Original LDR to TSDF
- Retain Copy of LDR with "Generator First Copy" of the Manifest
- RCRA Requires five year Record Retention



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, etc.)
  - List ER coordinators in order - names, addresses, phone numbers
  - List of ER equipment - physical description, location, capabilities
  - Evacuation plan

RCRA Contingency Plan

- Copies of Plan must be distributed to:
  - –Facility
  - –All ER agencies that may respond to emergency (police, fire, hospitals, state and/or local emergency response teams)
- Document your distribution

RCRA Contingency Plan

- Amendment of Plan - Immediately if:
  - Permit revision
  - Plan fails
  - Emergency coordinator changes
  - List of ER equipment changes

RCRA Contingency Plan

265.55
- Emergency Coordinator must be available or on call,
  - * be familiar with the facility, the Plan, waste and records
  - * have authority to commit resources to mitigate the emergency

265.56
- Plan must include:
  - * activate alarm to notify site personnel
  - * notify response (EPA, NRC) as needed
  - * determine extent of release
  - * notify local agencies if evacuation is required

Preparedness and Prevention
40 CFR 265, Subpart C (265.30 - .37)

Applicable to generators and TSDFs

Goal: minimize the likelihood of an accident due to hazardous waste management activities

Preparedness and Prevention Requirements

265.32 requires:
- •Internal communication system or alarm
- •Communication system offsite agencies
- •Portable fire extinguishers
- •Fire control equipment
- •Spill control equipment
- •Decontamination equipment
- •Water at adequate volume and pressure

Preparedness and Prevention Requirements

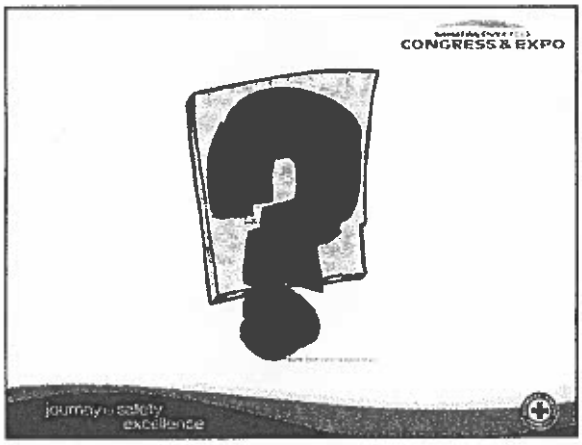
265.33
- All required equipment must be tested and maintained

265.34
- All HW employees have immediate access to alarm systems

265.35
- Must maintain aisle space between containers to allow movement of personnel and equipment (30" recommended)

Preparedness and Prevention Requirements

265.37
- Review with local authorities and designated responders
  - facility layout
  - properties and hazards
  - location of personnel work areas
- Determine who is primary responding agency
- Agreements with emergency response contractors/ state responders/equipment suppliers
- Inform hospitals about properties of HW
- Document any agency refusal



Employee Training
40 CFR 265.16

Who Must Be Trained?

All personnel involved in hazardous waste management (except satellite accumulation)
- Small quantity generators
- 90-day generators
- TSDF facilities

- If in doubt, train

Employee Training

When must training be completed?

- New Hires
  - Within 6 months of employment
  - May not work unsupervised until trained
- Transfers/Job changes
  - Within 6 months of assignment
- SQG personnel need immediate training - annual refresher not required but recommended
- Annual review is required for LQGs

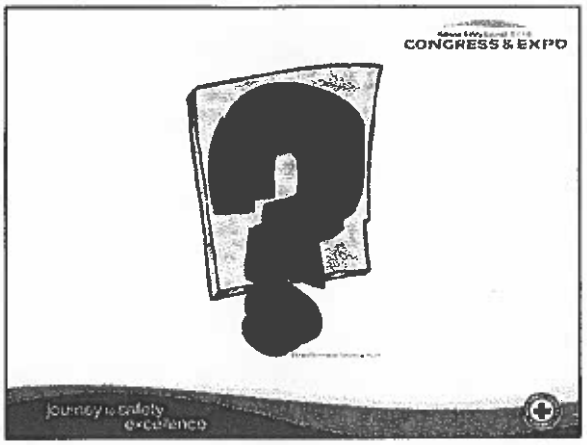
Training Content - 40 CFR 265.16

All employees involved with hazardous waste must be trained on the following:
- Waste management procedures relevant to their job (i.e., container handling, inspection, repair/replacement of emergency/monitoring equipment)
- Emergency procedures (i.e., contingency planning, response to fires, explosions or ground water contamination incidents
- Emergency equipment & systems (i.e., automatic cutoffs on waste feed systems, shutdown of operations)
- Site communications & alarm systems

Employee Training
Recordkeeping Requirements

For each job related to hazardous waste management, the following documents must be maintained:

- Job title & name of employee filling each job
- Job description for each job title must include:
  - Required skills
  - Education or other qualification
  - Duties assigned
- Type and amount of introductory & continuing training required for each job description
- Document for proof of training
- Record Retention:
  - Current Employees - until closure of the facility
  - Former Employees - three years from the date last worked



Waste Minimization
Definition

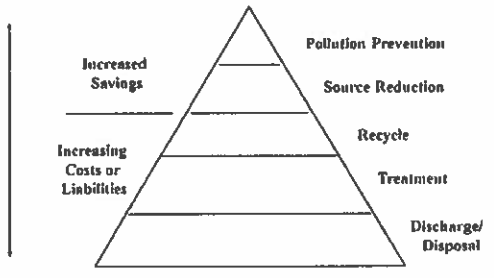
Waste Minimization: the reduction, to the extent feasible, of hazardous waste that is generated prior to treatment, storage or disposal of the waste. It is defined as any source reduction or recycling activity that results in either:

- Reduction of total volume of hazardous waste
- Reduction of toxicity of hazardous waste, OR
- Both

Waste Minimization
Minimum Program Requirements

- Top Management Support
- Characterization of Waste generated and waste management costs
- Periodic waste minimization assessments
- Cost allocation
- Technology transfer
- Program implementation and evaluation

Waste Management Hierarchy



Regulatory Enforcement

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

- Administrative sanctions or penalties
- Civil penalties
- Criminal penalties

Regulatory Enforcement
Administrative Sanctions or Penalties

- A non-judicial enforcement action by the EPA or State
- Two (2) types:
  - Informal actions
  - Administrative orders (i.e., compliance orders, corrective actions)

Maximum penalty is $25,000/day of non-compliance for each violation

Regulatory Enforcement
Civil Penalties

- Formal law suit against a person who has failed to comply with some statutory/regulatory requirement or Administrative Order
- Four (4) types:
  - Compliance Action
  - Corrective Action
  - Monitoring and Analysis
  - Imminent Hazard

Maximum penalty is $25,000/day of non-compliance for each violation

Regulatory Enforcement
Criminal Penalties

There are seven (7) criminal acts under RCRA that carry severe Criminal Penalties. These acts are knowingly:

1) Transporting waste to a non-permitted facility
2) Treating, storing or disposing of waste w/o a permit
3) Omitting information/false statement in any application, label, manifest, record, report, permit or 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

Regulatory Enforcement
Criminal Penalties

Maximum penalties are:

$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)

Waste Management
Common Mistakes

- Not covering/closing containers
- Missing accumulation start dates
- Exceeding the three day time limit for full satellite containers
- Improper training documentation (i.e., job descriptions, titles/qualifications, frequency)
- Failure to train all personnel within 12 months
- Failure to conduct inspections on consistent basis
- Failure to update contingency plan

Record Retention

Training Records – For current personnel records must be kept until closure of the site - 3 years for former employees

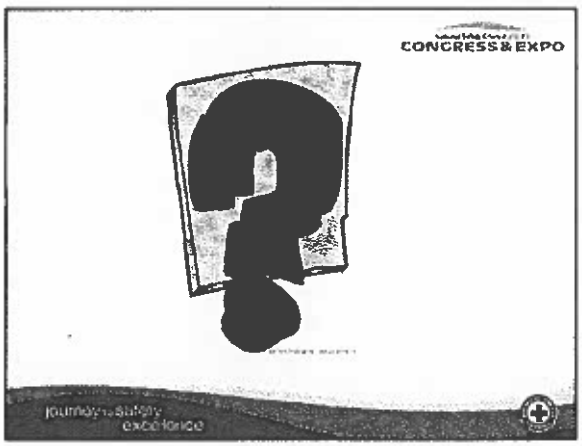
Accumulation Area Inspections – 3 years from date of inspections

Waste analysis & Determination Records^ - 3 years from date waste was last sent off site

Manifests^ - 3 years from date of shipment

Land Disposal Restriction (LDR) Documents – 5 years from the site the waste was last sent off-site for treatment, storage, disposal. Includes notices, certifications, demonstrations, waste analysis data & other documentation related to LDR regulations.

Exception Report – 3 years from the due date of the report.
Biennial Report – 3 years from the due date of the report.



Sal Caccavale
A.M. Castle & Co.
3400 North Wolf Road
Franklin Park, Illinois 60131
scaccavale@amcastle.com
sal22nyi@yahoo.com
847-349-2601 (o)
815-302-9185 (c)

Thank you for your time and patience!

Please return home safely!

Westchester County
Department of Parks, Recreation & Conservation

RIGHT TO KNOW/HAZARD COMMUNICATION PROGRAM
Chemical Spill Program

Employee Sign-Off

The following employees at Tibbetts Brook facility are aware of the Hazard Communication and Chemical Spill Program/policy, the location of the "red" book containing said policy and relevant Material Safety Data Sheets (MSDS), and have received program manual.

TRAINING DATE	NAME (print)	SIGNATURE
3/10/23	George Grave	
3/10/23	Paul Stewart	PAUL STEWART
3/10/23	NEIL RICHARDSON	
3/10/23	Daryl Williams	Daryl Williams
3/10/23	Enrique Perez	
3/10/23	Sheldon Lindsay	
3/10/23	Curtis Wilkerson	Curtis Wilkerson
3/10/23	KEITH Harrison	
3/10/23	Michael Salvato	Michael Salvato
3-10-2023	Rigoberto Alvarado	

Make and keep a copy of this form along with a copy of the Personal Protective Equipment Hazard Assessment form in the red binder. Your copies should be kept at your respective facilities and available for inspection upon request. The original signed forms are to be sent via interoffice mail to Joseph Simoncini, Director of Parks and will be kept on file in the administration office.

Westchester County
Department of Parks, Recreation & Conservation

RIGHT TO KNOW/HAZARD COMMUNICATION PROGRAM
Chemical Spill Program

Employee Sign-Off

The following employees at **Croton Point Park** facility are aware of the Hazard Communication and Chemical Spill Program/policy, the location of the **"Yellow"** book containing said policy and relevant **Safety Data Sheets (SDS)**, and have received program manual.

TRAINING DATE	NAME (print)	SIGNATURE
3/15/23		
3/15/23	Justin Mercer	
3/15/23	Kenneth Mathews	
3/15/23	Frank W. Cuomo	
3/15/23	Kamei Giles	
3/15/23	Frank Gardineer	
3/15/23	Ken Meyer	
3-16-23	John Buck	John Buck
3/16/23	Jason Once	
3/17/23	Philip Gibson	
3/17/23	Doug Falcon	
3/17/23	JOHN PHILLIPS	

Make and keep a copy of this form along with a copy of the Personal Protective Equipment Hazard Assessment form in the *yellow binder*. Your copies should be kept at your respective facilities and available for inspection upon request. The original signed forms are to be sent via interoffice mail to Joe Simoncini, Director of Parks and will be kept on file in the administration office.

Westchester County
Department of Parks, Recreation & Conservation

RIGHT TO KNOW/HAZARD COMMUNICATION PROGRAM
Chemical Spill Program

Employee Sign-Off

The following employees at Glen Island facility are aware of the Hazard Communication and Chemical Spill Program/policy, the location of the "red" book containing said policy and relevant Material Safety Data Sheets (MSDS), and have received program manual.

TRAINING DATE	NAME (print)	SIGNATURE
03/27/23	Joseph Rossi	Joseph Rossi
03/27/23	Anthony Zolnoski	Anthony Zolnoski
03/27/23	Steven Antalosky	Steven Ant
03/27/23	Cristian Eneu	Cristian Eneu
03/27/23	Tucker Lajoie	Tucker Lajoie
03/27/23	Robert Whittle	Robert Whittle
03/27/23	Stephen Campbell	Stephen Campbell

Make and keep a copy of this form along with a copy of the Personal Protective Equipment Hazard Assessment form in the red binder. Your copies should be kept at your respective facilities and available for inspection upon request. The original signed forms are to be sent via interoffice mail to Joseph Simoncini, Director of Parks and will be kept on file in the administration office.

Westchester County
Department of Parks, Recreation & Conservation

RIGHT TO KNOW/HAZARD COMMUNICATION PROGRAM
Chemical Spill Program

Employee Sign-Off

The following employees at **DUNWOODIE GC** facility are aware of the Hazard Communication and Chemical Spill Program/policy, the location of the "red" book containing said policy and relevant Material Safety Data Sheets (MSDS), and have received program manual.

TRAINING DATE	NAME (print)	SIGNATURE
4-5-23	MICHAEL BABAK	Michael Babak
"	LARRY DOWLING	
"	JAYLIN JEREZ	Jaylin Jerez
"	KENTUS MARTELLY	Kentus Martelly
"	JOSEPH PALUMBO	Joseph Palumbo
"	CARLOS BLOTTS	Carlos Blotts
"	JAVIER COLON	Javier Colon
"	JESUS MELENDEZ	Jesus Melendez
"	RAMON PICHARDO	Ramon Pichardo
"	DAVID YONG	David Yong
"	JAMES KING	James King
"	LAWRENCE DOWLING	Lawrence Dowling

Make and keep a copy of this form along with a copy of the Personal Protective Equipment Hazard Assessment form in the red binder. Your copies should be kept at your respective facilities and available for inspection upon request. The original signed forms are to be sent via interoffice mail to Joseph Simoncini, Director of Parks and will be kept on file in the administration office.