Session 1 RCRA Overview and Basics

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Session 1 Agenda: RCRA Overview and Basics

- Introduction to RCRA
- RCRA's Major Subtitles
- The Regulated Community
  - Generators
  - Transporters
  - Treatment, Storage, and Disposal Facilities (TSDFs)
- Hazardous Waste Identification

Enacted in 1976, RCRA is a law, set of regulations, and regulatory program

- *A Law*—Congress outlined in RCRA the framework by which EPA would regulate waste (Cradle to Grave)
- *A Set of Federal Regulations*—based on Congress' mandate in RCRA, EPA established a comprehensive set of standards
- *A Regulatory Program*—EPA and states implemented the statute and regulations through guidance and policy statements

In 1984, Congress enacted the Hazardous and Solid Waste Amendments (HSWA) [his-wah]

- Expanded and reinforced RCRA's protective framework
- Established over 70 statutory provisions requiring EPA action, including:
  - Creation of the land disposal restrictions (LDR) program
  - Facility-wide corrective action
  - Specific permitting deadlines for hazardous waste facilities
  - A nation-wide look at the conditions of solid waste landfills
  - Regulated Underground Storage Tanks (USTs)
- Rules promulgated pursuant to HSWA are effective immediately in all states

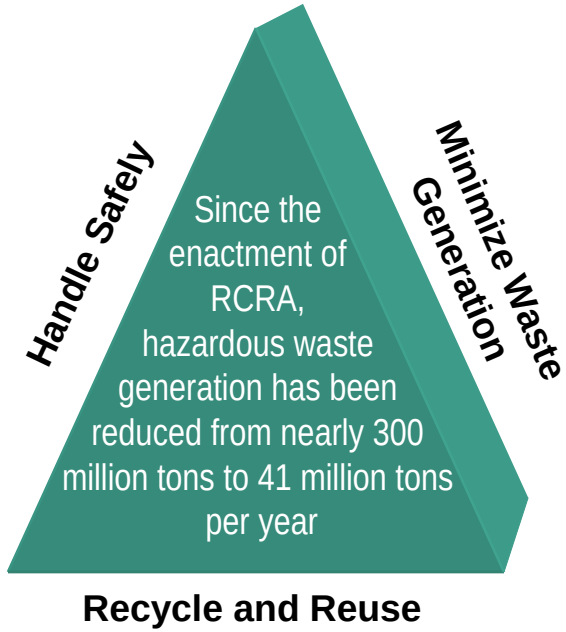
Congress signed the HSWA on November 8, 1984

Major Waste Management Laws

- 1965 – Solid Waste Disposal Act (SWDA)
- 1970 – Resource Recovery Act
- 1976 – Resource Conservation and Recovery Act (RCRA)
- 1984 – Hazardous and Solid Waste Amendments (HSWA)
- 1992 – Federal Facility Compliance Act (FFCAct)
- 1996 – Land Disposal Program Flexibility Act

RCRA's three primary goals are:

- Promote protection of human health and environment through effective waste management
- Conserve materials and energy resources through waste recycling and recovery
- Reduce or eliminate waste generation as expeditiously as possible



RCRA §1003(a)

RCRA's Major Subtitles

Congress outlined four programs in RCRA

- *Solid waste*—focuses on traditional nonhazardous solid waste, such as municipal garbage; Subtitle D
- *Medical waste*—a two-year pilot program to track the generation and management path of infectious waste; Subtitle J
- *Underground storage tanks (USTs)*—added to RCRA in 1984, the UST standards establish design and operating requirements to prevent leaks from underground tanks; Subtitle I
- ***Hazardous waste*—developed to ensure the safe management of hazardous waste from the moment it is generated to its final disposal; Subtitle C**

RCRA Subtitle C governs the management and disposal of hazardous waste

- Regulates commercial businesses as well as federal, state, and local government facilities that generate, transport, treat, store, or dispose of hazardous waste

- Regulations designed to ensure proper management of hazardous waste from the moment it is generated until its ultimate disposal or destruction

- EPA or a state hazardous waste agency enforces the hazardous waste laws

40 CFR Parts 260 - 279

RCRA-Regulated Community

The Subtitle C program defines who, what, why, and how waste is regulated

- *Who*—generators, transporters, and treatment, storage, and disposal facilities (TSDFs)
- *What*—identification of hazardous waste
- *Why*—protection of groundwater, air, and human health
- *How*—implementation tools, including permits, closure requirements, financial assurance, corrective action, and enforcement

Examples of businesses that typically generate hazardous waste include dry cleaners, auto repair shops, hospitals, and photo processing centers.

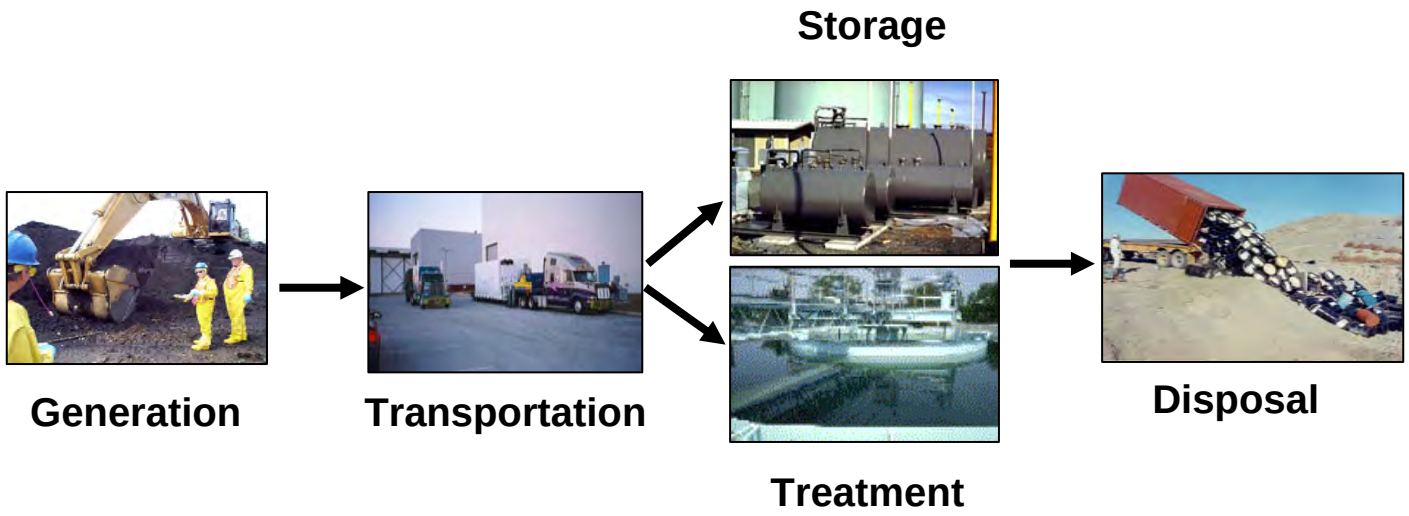
The challenge that EPA faced was developing regulations that considered the following

- Waste management practices already in existence
- Extent of burden on existing practices
- Cost of regulatory control

On September 30, 1995, the burden imposed by RCRA regulation was 12,600,000 hours per year.

RCRA manages waste cradle-to-grave

Hazardous waste is managed from the moment it is produced until the moment it is disposed (and beyond)



A generator is a person whose act first creates or produces a hazardous waste

- Generators become subject to regulations *involuntarily*
- Hazardous waste is produced as a result of business practices
- Regulations are not intended to be overly burdensome

"Any person, by site, whose act or process produces hazardous waste identified or listed in Part 261 of this chapter or whose act first causes a hazardous waste to become subject to regulation" (§260.10)

40 CFR §261.5, Part 262

RCRA regulates three classes of generators based on the quantity of hazardous waste produced each month

- Large quantity generators (LQGs) produce the most waste (2,200 lbs or more)
- Small quantity generators (SQGs) produce moderate amounts (between 220 and 2,200 lbs)
- Conditionally exempt small quantity generators (CESQGs) produce the smallest amounts (220 lbs or less)

40 CFR §261.5, Part 262

An LQG generates one or more of the following amounts of hazardous waste in a calendar month:

≥ 1,000 kg (2,200 lbs)

> 1 kg acute (2.2 lbs)

> 100 kg (220 lbs) spill cleanup material containing acute hazardous waste

In 2001, there were approximately 18,000 LQGs generating nearly 41 million tons of hazardous waste.

40 CFR §262.34(a)

LQGs must comply with certain requirements

- Identification (ID) numbers and the Biennial Report exist to keep track of those generating and managing wastes
- Waste can be accumulated (and non-thermally treated) on site for up to 90 days in certain units (e.g., tanks, containers, containment buildings, drip pads)
  - **Referred to as less-than-90-day accumulation units**
- Air emission standards must be met when applicable
- Contingency plans and emergency procedures must be designed for individual facilities
- Facility personnel must be properly trained

40 CFR §262.34(a)

SQGs produce moderate amounts of waste

- An SQG generates between 100 kg and 1,000 kg per calendar month
- SQGs have less stringent requirements
  - Obtain EPA ID numbers
  - Accumulate waste on site for no more than 180 or 270 days
  - Accumulate no more than a total of 6,000 kg on site at any one time
  - Must establish a basic contingency plan and emergency procedures
  - Facility personnel must have basic training

In 1999, there were approximately 125,000 SQGs.

40 CFR §262.34(d)

CESQGs produce one or more of the following amounts of hazardous waste in a calendar month:

- ≤ 100 kg (220 lbs)
- ≤ 1 kg acute (2.2 lbs)
- ≤ 100 kg (220 lbs) spill cleanup material containing acute hazardous waste

40 CFR §261.5

CESQGs have the least stringent requirements

- Only 1,000 kg (2,200 lbs) can be accumulated on site at any one time
- Waste must be sent to one of seven types of facilities listed in the regulations, including:
  - State or federally-regulated hazardous waste TSDF
  - A facility permitted, licensed, or registered by a state to manage municipal or industrial solid waste
  - A facility that uses, reuses, or legitimately recycles the waste (or treats it prior to use, reuse, or recycling)
  - A universal waste handler or destination facility

In 1999, there were between 400,000 and 700,000 CESQGs.

40 CFR §261.5

Transporters are persons engaged in the off-site transportation of hazardous waste

- Transporters are regulated by both EPA and the Department of Transportation (DOT)
- A hazardous waste manifest ensures that waste is tracked from its generation location to its final disposal site
- Transporters must obtain EPA ID numbers

"person engaged in off-site transportation of hazardous waste by air, rail, highway, or water" (§260.10)

40 CFR Part 263

Manifests track hazardous waste until it reaches a TSDF

- The manifest identifies the waste and parties involved with the shipment (generator, transporter, TSDF)
- It is a mechanism to ensure accountability
- Provides notification to the generator of waste arrival at TSDF (get a signed copy back)
- Makes emergency information easily accessible

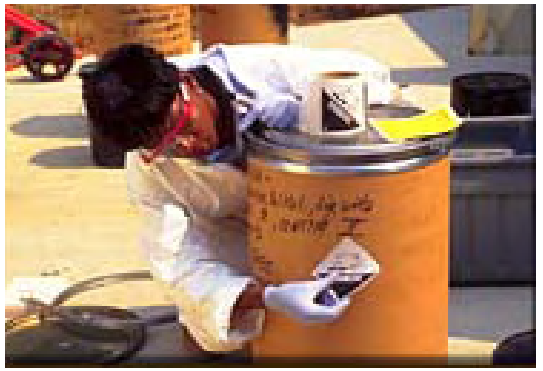
EPA finalized modifications to the manifest to improve and modernize the hazardous waste tracking system

- Standardized the content and appearance of the manifest form and continuation sheet
  - Reduced the variability in state manifest requirements, such as handling container residues, rejected wastes, and international shipments
  - Removed optional state fields
  - Added an emergency response phone number field
- Identified procedures for printing the standardized manifest forms and established a manifest registry system
- The new Uniform Hazardous Waste Manifest became effective for all shipments starting September 5, 2006

70 FR 10776; March 4, 2005

Transporters must comply with DOT regulations

- DOT establishes standards for hazardous materials in transportation (hazardous wastes are a subset of hazardous materials)
- Vehicle standards, packaging standards, and labeling requirements must be met
- DOT also requires personnel training



40 CFR Part 263, 49 CFR Parts 100-185

Transfer facilities provide temporary storage for hazardous waste in transport

- Transportation-related facilities, including loading docks, parking areas, storage areas, and other similar areas where shipments of hazardous waste are held during the normal course of transportation

- Can store waste for ten days or less

40 CFR §§260.10 and 263.12

TSDFs are facilities engaged in the treatment, storage, or disposal of hazardous waste

- TSDFs are in the hazardous waste management business
- TSDFs must comply with a more extensive set of regulations
- Substantial interaction with EPA is required to ensure that management is conducted safely

In 2003, 1,726 facilities managed 42 million tons of hazardous waste.

TSDFs have two types of standards

- General facility standards apply to every TSDF
  - Recordkeeping*
  - Contingency plans and emergency procedures*
  - Manifesting*
  - Personnel training*
  - Obtaining an ID number and biennial reporting*
  - Security requirements
  - Financial assurance
  - Closure and post-closure care
  - Permitting
- Unit-specific standards apply to the types of units at a facility
  - Design criteria
  - Operating criteria
  - Inspections
  - Engineering certifications

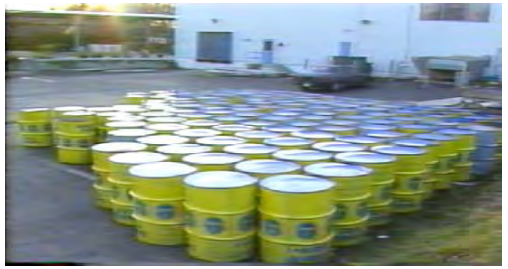
* Similar to LQG requirements

Unit-specific standards apply to the types of units at a facility

- Unit-specific standards contain requirements for:
  - Inspections (e.g., weekly tank inspections)
  - Engineer certifications (e.g., structural integrity)
  - Design criteria (e.g., secondary containment)
  - Operating criteria (e.g., ceiling limitations on volume)
- Groundwater monitoring is required only for land-based units
- Corrective action will apply in some instances

Each unit has individual requirements

- *Tank*—a stationary unit that holds hazardous waste
- *Container*—a portable unit that holds hazardous waste
- *Containment building*—a building designed to contain hazardous waste (debris/soil) that itself functions as if it were a tank or container



Each unit has individual requirements

- *Surface impoundment*—pond, lagoon, or pool that holds hazardous waste
- *Landfill*—in-ground unit used to dispose waste

Each unit has individual requirements

- *Incinerator*
- *Waste pile*
- *Miscellaneous units*
- *Drip pads*
- *Land treatment units*

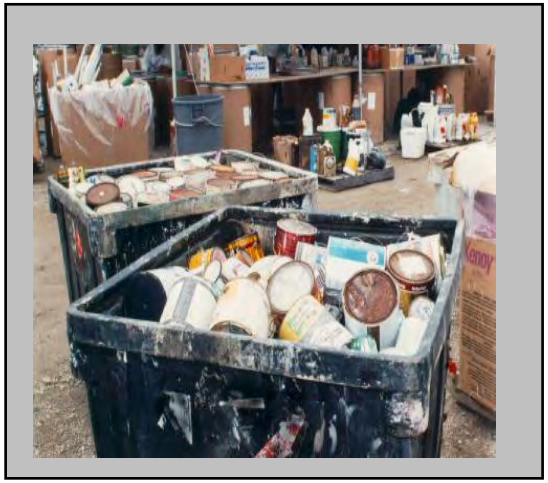
Hazardous Waste Identification

EPA regulates waste pursuant to the RCRA statute

The term **“hazardous waste”** means a solid waste...which because of its quantity, concentration, or...characteristics may...pose a substantial or potential hazard to human health or the environment…

RCRA §1004(5)

RCRA regulates the proper management of waste; RCRA does not regulate products



Products and wastes are mutually exclusive sets

Generators must first determine if they are managing a waste and not a product

Hazardous waste is a *subset* of solid waste

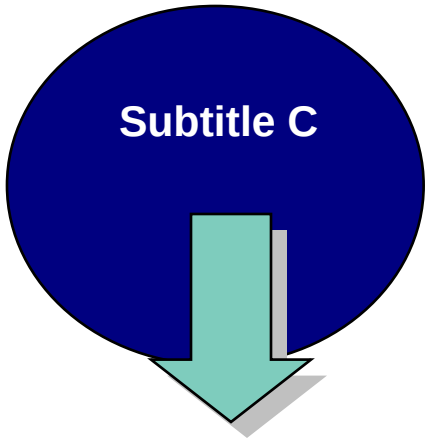
A solid waste is any solid, liquid, or contained gaseous material that is being *discarded*

- A solid waste is any material that is discarded by being:
  - Abandoned (thrown away)
  - Burned for destruction
  - Recycled in certain ways that resemble waste management

RCRA §1004(27); §261.2(a)

In evaluating the universe of hazardous wastes, Congress and EPA determined some wastes did not warrant regulation

- Avoids dual regulation
- Reduces economic impacts
- Encourages recycling and the use of new technologies
- Eases industry regulation



Many exclusions are mandated directly in the RCRA statute.

A waste is considered hazardous if it meets a listing description or exhibits a characteristic

Listed Waste

- Tied to specific industries or descriptions
- Commonly referred to as F, K, P, and U lists
- Either meet it or you don't

Characteristic Waste

- Based on property of waste stream
- Not tied to specific industry or process
- Commonly referred to as D codes

If a solid waste meets a listing description, it is a listed hazardous waste

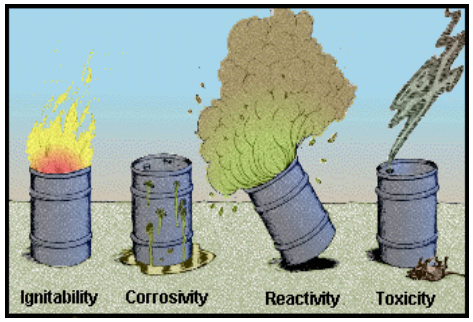
There are four separate lists of hazardous waste:

Manufacturing Process Waste	Unused Commercial Chemical Products
F-List	P-List
K-List	U-List

Generators must look at each list and compare their wastes to the narrative descriptions to determine whether or not they have a listed waste.

If a solid waste is not listed, it may be a hazardous waste by exhibiting a characteristic

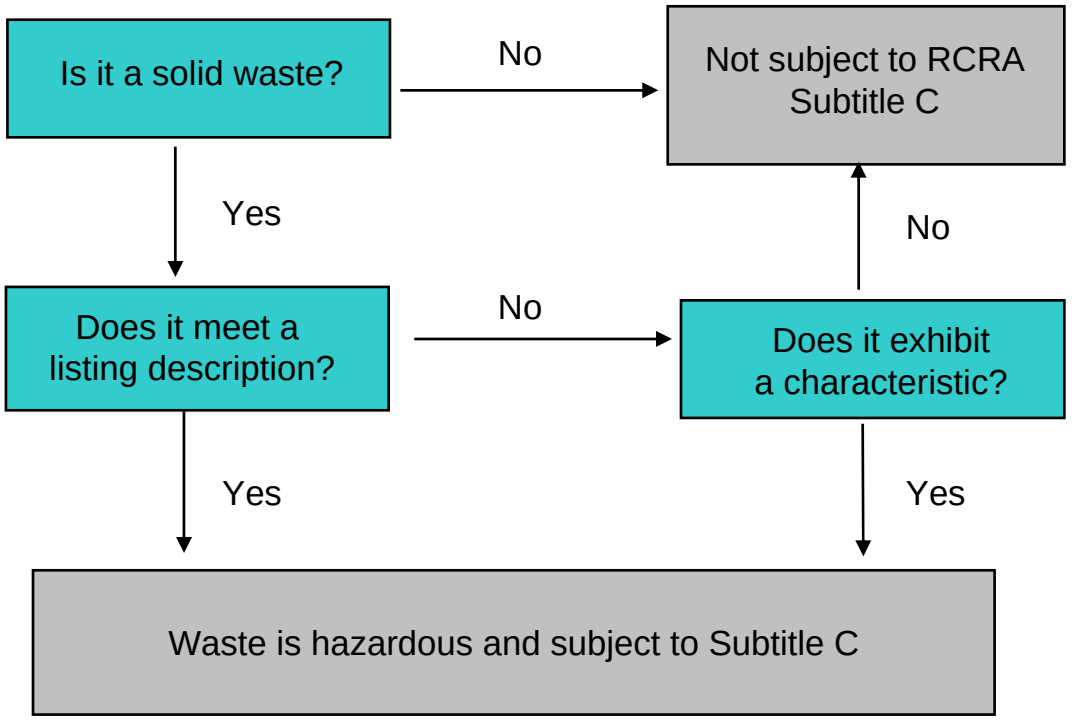
- Characteristic wastes capture measurable properties that indicate a waste poses enough of a threat to deserve regulation as a hazardous waste
- Even if a waste meets a listing description, the generator must determine if it also exhibits a characteristic
- There are four classifications of characteristic hazardous waste
  - Ignitability
  - Corrosivity
  - Reactivity
  - Toxicity



Generators are responsible for determining if a waste is hazardous

- A generator's responsibility begins at the point the waste is generated
- A generator may use test results or process knowledge in making the determination

Generators of solid waste must use the following waste determination process



Questions?