

## Environmental Compliance and Pollution Prevention for Hazardous Waste Management

### 1. Course Overview:

Federal and state environmental laws  
How to comply with these regulations  
How to use pollution prevention to eliminate the regulatory burden

### 2. Course will cover:

Hazardous Waste Management  
Hazardous Waste Storage Area Requirements  
Managing Universal Wastes  
Aboveground Storage Tanks  
Pollution Prevention Opportunities

### 3. Course Presentation

Morning Session: Lecture about regulations and requirements  
Afternoon Session: Interactive Team exercise covering pollution prevention ideas  
Course Closing: Environmental Quiz Show (With Prizes!)

### 4. **Review of Federal and State Environmental Regulations**

Environmental laws are written and passed by Congress. Congress intended that the individual states eventually assume responsibility for implementing the laws.

- States are more familiar with the local regulated community
- State can respond to specific local needs more effectively

### 5. Photo of State regulator

### 6. **Resource Conservation Recovery Act**

In 1976 congress passed the Resource Conservation and Recovery Act (RCRA) which directed EPA to develop and implement a program to protect human health and the environment.

### 7. **The Primary Goals of RCRA are:**

Protect human health and the environment  
Conserve energy and natural resources  
Reduce the amount of waste generated  
Ensure that wastes are managed in an environmentally sound manner.

### 8. RCRA - What parts are important to me?

Subtitle D - Solid Waste

Subtitle C - Hazardous Waste  
Subtitle I - Underground Storage Tanks

9. Controlling Hazardous Waste

To control hazardous waste, EPA has established:

A tracking system  
Identification and permit system  
Land disposal restrictions

10. Tracking “Cradle to Grave”

RCRA regulates:  
generation (cradle)  
transportation  
treatment, storage, and disposal (grave)  
Of hazardous wastes

11. Identification and permit system

EPA has established an identification system for generators of hazardous waste and a “permit” system for facilities that treat, store or dispose of hazardous waste.

12. Land Disposal Restrictions

EPA's LDR program works specifically to minimize potential environmental threats resulting from land disposal of hazardous waste. The LDR program achieves this by establishing hazardous waste protocol and treatment requirements that make the waste safe for land disposal.

The LDR program ensures that toxic constituents present in hazardous waste are properly treated before hazardous waste is land disposed.

<http://www.epa.gov/epaoswer/hazwaste/ldr/snapshot.htm>

13. The generator

Any person, by site, whose act or process produces hazardous waste identified or listed in RCRA regulations, or whose act first causes a hazardous waste to become subject to regulation.

14. 3 Types of generators

Large Quantity Generator (LQG)  
(2,200 lbs haz. waste per month)  
Small Quantity Generator (SQG)

(220 - 2,200 lbs hazardous waste per month)  
Conditionally Exempt Small Quantity Generator (CESQG)  
(Less than 220 lbs hazardous waste per month)

15. A generator must determine :  
Is the material a solid waste?  
Is the solid waste excluded?  
Is the solid waste hazardous?  
Is the solid waste a universal waste?

16. Is the material a solid waste?

A waste is any solid, liquid, or contained gaseous material that you no longer use, and either recycle, throw away, or store until you have enough to treat or dispose of.

17. Is the material a solid waste?

Materials are not a solid waste if they are recycled by:  
Use or reuse as ingredients  
Use or reuse a substitutes for commercial products  
Returned to the original process without being reclaimed

18. Is the solid waste excluded?

EPA has excluded many wastes from regulation: for DOI facilities these include:  
Domestic sewage  
Irrigation return flows  
Closed loop recycling  
Some wood preserving wastes  
Household hazardous waste

19. Household hazardous waste

Household waste is excluded from regulation as a hazardous waste.  
Visitor and resident waste, when mixed with facility waste, can be regulated as hazardous waste.  
Keep visitor and facility waste separate, and it remains excluded

20. Is the solid waste hazardous?

A solid waste or combination of solid wastes which because of quantity, concentration or characteristic:

- 1) causes or significantly contributes to an increase in human mortality or serious illness, or,
- 2) Poses a substantial hazard to human health or the environment when improperly treated, stored, transported or disposed.

21. **RCRA Subtitle C - Managing Hazardous Waste**

You, the generator, are responsible for determining if any of the wastes you generate are hazardous

You are responsible for the waste “cradle to grave”.

22. If you need assistance to determine whether your wastes are hazardous:

Your state waste management agency

Your EPA Regional office

RCRA, Superfund and EPCRA Call Center 1-800-424-9346

or: URL: <http://www.epa.gov/epaoswer/hotline/contact.htm>

EPA’s Small Business Ombudsman hotline: 1-800-368-5888

23. **RCRA Subtitle C - Managing Hazardous Waste**

Types of Hazardous Waste:

1. Listed Waste

A waste is considered hazardous under RCRA if it is one of over 400 waste that has been “listed” by EPA.

DOI facilities usually do not have any of these wastes - they usually apply to manufacturing facilities.

24. **RCRA Subtitle C - Managing Hazardous Waste**

Types of Hazardous Waste:

2) Characteristic Hazardous Waste: A waste that shows the following characteristic:

Ignitable (flash point of 140<sup>o</sup> or less)

Corrosive (pH less than or equal to 2 - or greater than 12.5)

Reactive (unstable)

Toxic (a high concentration of heavy metals, solvents, or pesticides)

25. Acutely Hazardous Waste

Some wastes are considered acutely hazardous. Small amounts of these wastes are regulated the same way as large amounts of hazardous waste. Examples: Certain pesticides or dioxin containing wastes.

26. Special Waste Issues

Derived From Rule - Any waste that is derived from a hazardous waste is a hazardous waste.

Mixture Rule - Any waste mixture containing a hazardous waste is a hazardous waste.

Contained In Rule - Hazardous waste contained-in soil or water can be removed, and the soil or water would no longer be a hazardous waste.

Empty Container - For a 55-gallon drum, the limit is 1 inch of residue left on the bottom of the container (or 3% by weight).

27. Lead Containing Waste

Paint removed from old buildings - collect and dispose of as hazardous waste  
Spent batteries - recycle as universal waste

28. PCBs

Regulated under the Toxic Substances Control Act (TOSCA)  
May be present in an old transformers and in old lamp ballasts  
Must be managed separate from hazardous waste

29. Asbestos

Regulated under TOSCA  
May be in floor tile, insulation, or some adhesives  
Check for asbestos before doing any building demolition or restoration

30. Used Oil

Regulated under RCRA, but not as a hazardous waste  
All used oil should be recycled  
Do not mix any waste fluids with used oil

30 a **RCRA Subtitle C - Managing Hazardous Waste**

If you need help in identifying hazardous waste:

- Check the Material Safety Data Sheet
- Contact your state environmental agency
- Contact the Environmental Protection Agency

31. EPA Identification Number

A generator cannot treat, store, dispose, transport, or offer for transportation, hazardous waste without having an EPA ID number

CESQG do not need an EPA ID number.

32. Hazardous Waste Accumulation

LQG may accumulate hazardous waste for 90 days or less with provisions. DOI facilities usually do not fall into this category.

33. Hazardous Waste Accumulation

SQG may accumulate up to 180 days, provided:  
No more than 132,000 lbs is accumulated

Contents marked on each container  
Comply with container use and management requirements  
SQG may accumulate up to 270 days if they are more than 200 miles to suitable TSD

34. Hazardous Waste Accumulation

CESQG may accumulate up to 2,200 lbs of hazardous waste without a permit and no formal limit on accumulation time.

35. Pre-Transport Requirements

Waste must be packaged, labeled and marked according to Department of Transportation requirements

Containers must be labeled with the words "Hazardous Waste"  
Must offer appropriate placards to transporter

36. "Satellite" Accumulation

May accumulate up to 55 gallons of hazardous waste, or one quart of acute hazardous waste at or near the point of generation, provided:

Under the control of the process operator  
Containers are closed and in good condition  
Contents are marked on outside of container

37. Hazardous waste manifest

A generator who transports or offers transportation must prepare a manifest.  
SQG need not complete a manifest when the material is being reclaimed, provided:  
the reclaimer transports the waste  
Generator keeps a copy of the reclaimed agreement

38. Manifest - CESQG

CESQG is exempt from the manifest requirements  
Your waste disposal service provider or your state may require a manifest

39. Recordkeeping

Generator must keep records of the following for 3 years:

Manifests  
Test results from waste samples  
Universal waste records  
Training records for employees must be kept for three years after employment ends

40. Choosing a TSDF

Your liability is in the hands of your waste vendor  
Price and distance should not be the sole criteria  
Don't delegate your responsibility to a transporter or broker

41. Material Safety Data Sheets

Good source of product information  
Look for disposal recommendations  
not the sole source for waste characterization

42. Universal Wastes

These are categories of hazardous waste that the EPA has identified that can be managed as *Universal Wastes*, which has less restrictive and costly management requirements.

Universal wastes must be managed in a way that prevents release of any universal waste or components of a universal waste to the environment

43. Universal Wastes

Batteries  
Thermostats  
Lamps  
Pesticides

44. All batteries that are hazardous (contain lead, acid, nickel, cadmium) will be considered a universal waste battery. This includes radio batteries and many power equipment batteries; this does not include alkaline batteries.

45. All thermostats that are hazardous (contain mercury) will be considered a universal waste thermostat.

46. All lamps that are hazardous (contain mercury) will be considered a universal waste lamp. This includes fluorescent lamps that are not otherwise marked "low mercury."

Do not break universal waste lamps - dispose of properly so that the mercury vapor can be captured.

47. Universal waste pesticides must be managed in a way to prevent release of any waste to the environment.

Store pesticides in containers that remain closed at all times, is structurally sound, and lacks evidence of leakage or spillage, or damage.

48. Universal Waste Management

Labeling:

Containers with Universal Waste must be properly labeled with the words:

Waste Batteries

First item added to container on:

Date

Initials

49. Universal Waste Management

Time Limits

SQG may accumulate UW for longer than one year from the date it is generated if you are going to dispose of it as a UW.

You must demonstrate the amount of time the waste has been accumulated by writing the date on the drum.

50. Universal Waste Management

Employee Training

A SQG must inform all employees who have a responsibility for managing universal waste on the proper handling and management of the waste.

51. Universal Waste Management

Off-Site shipment

Universal Waste must be taken or shipped to a universal waste handler.

No permits are needed

52. Universal Waste Management

Universal Waste Records:

a log or other records that details the quantity of UW by type is required.

You should include dates of shipments, method of shipment and destination.

53. For Compliance Assistance on many subjects:

<http://www.assistancecenters.net/>

About the Centers: Innovative solutions to your environmental challenges  
Environmental regulations can be confusing. It's often hard to find out exactly what you need to do, in language that relates directly to the operations of your business or government agency.

54. **RCRA Subtitle D - Managing Solid Waste**

Covers non-hazardous waste.

Implemented at the local level  
Promotes environmentally sound disposal methods  
Maximizes the reuse of recycling  
Fosters resource conservation

55. **RCRA Subtitle D - Managing Solid Waste**

States may develop solid waste management plans to ensure:  
Solid waste is properly managed  
Resources are conserved  
Open dumps are closed or upgraded

56. **RCRA Subtitle D - Managing Solid Waste**

Resources

- See page 46 - 47 in Tool Kit

57. The best way to avoid all this work - is to develop and implement an effective pollution prevention program for your facility.

58. **POLLUTION PREVENTION**

- Reduces
- Avoids
- Eliminates:  
the generation of pollution

59. **POLLUTION PREVENTION**

- Pollution prevention has been an environmental management option for a long time
- The increased cost of product and waste disposal is an incentive to include pollution prevention in your environmental program

60. **ENVIRONMENTALLY SOUND RECYCLING**

- Reusing materials that would otherwise become a waste as new product or new material
- Example: Recycling your aluminum cans instead of putting them in the trash.

61.. **POLLUTION PREVENTION BENEFITS**

- Saves \$\$\$\$\$\$
- Reduces operating and maintenance costs
- Reduces disposal costs
- Reduces risk to park employees from hazardous products
- Gets your park out of the regulatory framework

62. **POLLUTION PREVENTION RESOURCES:**

- See pages 2-7 in the Tool Kit for how to reduce your waste
- See pages 8 - 9 in Tool Kit for ideas about specific waste streams

63. **Pollution Prevention Vehicle Maintenance**

- Parts Cleaning Solvents
- Used oils, lubricants and filters
- Used Fuels, Used Antifreeze and Brake Servicing
- Rags, Tire, and Used Batteries

**Pesticides and Herbicides**

**Painting Operations and Cleanup**

64. **Pollution Prevention Vehicle Maintenance**

Parts Cleaning Solvents

- Remove all hazardous cleaning solvents from your facility
- Check MSDS to be sure before buying
- Eliminate aerosol spray cans - buy refillable pump or spray dispensers
- Use drip pans to keep hazardous materials off the floor

65. **Pollution Prevention Vehicle Maintenance**

Used oils, lubricants and filters

- Recycle used oils - always use an approved and licensed recycle.
- Always collect used oil in a central storage tank with secondary containment
- Do not use oil additives
- Test your oil for chlorinated compounds before recycling
- Hot drain or crush used oil filters and recycle
- Do not purchase tern-plated filters
- Drain spent transmission fluid and fuel filters well and recycle or discard in dumpster
- Dispose of air conditioner filters that contain CFC-12 as a hazardous waste.

67. **Pollution Prevention Vehicle Maintenance**

Used Fuels, Used Antifreeze and Brake Servicing

- Never use fuel as a parts cleaner
- All fuels are hazardous material and must be disposed of as a hazardous waste if no longer needed
- Never allow fuel to discharge into the ground or sewer system
- Use only one fuel/oil mixture
- Filter fuel with debris and reuse

Used Antifreeze

- Antifreeze should be recycled on-site or sent to a recycler. Small , inexpensive, portable recycling units are available
- Never discard antifreeze into the ground or sewer system
- Consider replacing ethylene glycol with propylene glycol

#### Brake Servicing

- Recycle all brake filters - they contain diethylene glycol
- Asbestos dust and friable asbestos from older brakes are a hazardous waste
- Spent transmission fluid contains lead and other metals - recycle or dispose of as hazardous waste

### 70. **Pollution Prevention Vehicle Maintenance**

#### Rags, Tire, and Used Batteries

##### Rags

- Check with your state agency on their policy on rags
- Rags that contain hazardous solvents may be considered a hazardous waste unless recycled through a laundry
- Disposable rags = more waste
- Store all rags in labeled, sealed, fireproof waste containers

##### Tire and Rubber Waste

- Recycle all rubber products if possible
- Do not discard tires in boneyard
- Place a 30 foot fire break between bulk tire storage
- Store new tires away from weather
- Separate lead weights from your old tires and send to a recycler

##### Used Batteries

- Used lead-acid batteries are regulated as a hazardous waste. Turn them into an authorized recycler
- Damaged or leaking lead-acid batteries that recyclers will not take need to be disposed of as a hazardous waste.
- Used rechargeable batteries wherever possible and carefully store all batteries

### 73. **General Housekeeping Practices**

- Establish strict inventory control to ensure all materials are property stored and labeled
- Use first-in, first-out inventory control to avoid out-of-date products
- establish controlled use of all hazardous products
- Keep inventory storage areas clean

### 74. **Pesticides and Herbicides**

- Almost all of the hundreds of pesticides and herbicides, old and new, must be treated as hazardous waste or universal wastes when disposed of.
- Consult your MSDA for each product to determine whether it contains a hazardous product
- Always follow the manufacturers directions.

75. **Pollution Prevention for Pesticides and Herbicides**
- Do not buy more than one year supply because they could be restricted in the future
  - Mix only enough for your present operation - label properly
  - Excess product may be hazardous - use good housekeeping to avoid waste.
  - consider and Integrated Pest Management Plan
  - Use environmentally safe pesticides and herbicides sparingly
  - Consider the weather when applying
  - Mix and apply as specified
  - Calibrate application equipment
  - Triple rinse all containers; use rinse water for makeup
- 76.
77. **Pollution Prevention for Painting Operations**
- Use non-hazardous (water-based) paints whenever possible
  - Buy only the paint you need for the job
  - Implement a paint inventory system
  - Make sure the surface is ready
  - Use extra paint to add a second coat - instead of storing it until it dries out.
78. **Pollution Prevention for Painting Cleanup**
- Use cleaning solvents and thinners that are non-hazardous
  - Use “spent” solvents as “pre-cleaners”
  - Centralize all painting and cleaning
  - minimize the number of solvents
  - If you use solvents, consider recycling them
79. **Pollution Prevention for Cleaning Supplies**
80. **Pollution Prevention for Paving Operations**
- Asphalt can be recycled - consult your local recycler for possible operations in your area
  - Road striping paint usually contains hazardous products. Dispose of properly or make sure that your contractor assumes responsibility to dispose of excess paint.
80. **Your Goal**
- Your goal is to reduce the amount of solid and hazardous waste produced in your park through pollution prevention.
81. **The Clean Water Act**
- See page 76 in the Tool kit for more information
- Stormwater discharges focuses on facilities where rainwater is collected by the local storm drain system and dumped into local surface water.
  - If you wash vehicles you should pay attention to where the water is discharged

- check for open drains in your maintenance area that may drain to the environment
  - plug these up!
- Septic Systems - If you have a sump, septic system, or vehicle service bay drain connected to a disposal well, you have a Class V Underground Injection Well which must be regulated by the EPA. Plug up the drain - or call your State contact for more guidance.

82. **Occupational Safety and Health Administration (OSHA)**

If you use hazardous product in your park, you need to develop a Hazard Communication Plan and train your employees.

- See pages 80-81 in the Tool Kit.

83. **Environmental Management System**