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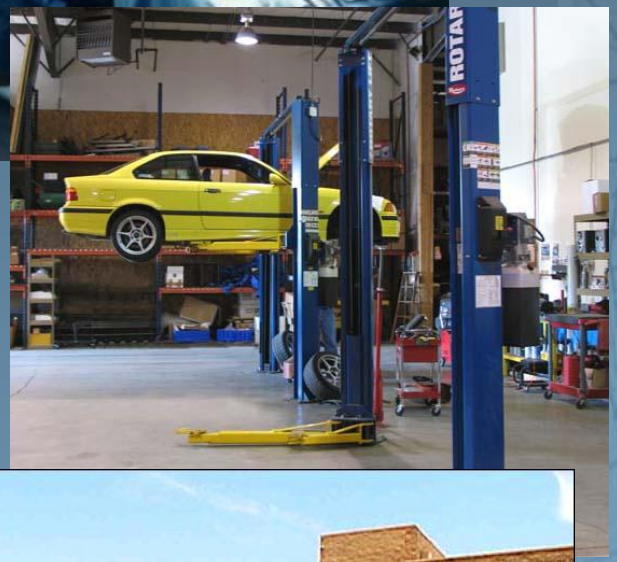
A Road Map to RCRA

Small Quantity Generator Outreach Program

Class Materials

- Presentation
- Small Quantity Generator Guidance
- Resource Materials Available
  - *Environmental BMPs for Small Businesses*
  - *Conditionally Exempt Small Quantity Generator Guidance Handbook*
  - *Small Businesses Outreach Training*



Topics for Discussion

- An Introduction to RCRA
- Hazardous Waste Determination
- Generator Status
- Container Accumulation & Storage
- Tank Accumulation & Storage
- Pre-Transport Functions
- Uniform Hazardous Waste Manifest

Topics for Discussion (cont'd)

- Land Disposal Restriction
- Emergency Preparedness & Planning
- Inspection & Maintenance
- Universal Waste
- Used Oil
- Closure Requirements
- Recycling

Outreach Program

- Educate SQGs regarding their regulatory obligations
- Provide information that can be brought back to facilities for training purposes

DEP Outreach Information

- DEP web site www.ct.gov/dep/

- Contact Information
  - Emergency Response and Spill Prevention Division
    - Emergency Spill Reporting (860) 424-3338
    - Information (860) 424-3377
  - National Response Center (800) 424-8802
  - Bureau of Air Management (860) 424-3436
  - Bureau of Materials Management & Compliance Assurance
    - Hazardous Waste Compliance Assistance (888) 424-4193
    - Solid Waste and Recycling Program (860) 424-3366/3365
    - Stormwater and Wastewater Discharge Programs (860) 424-3018
    - Underground Storage Tank Program (860) 424-3374
  - Office of Pollution Prevention (860) 424-3297
  - Bureau of Water Protection and Land Reuse
    - Remediation Division (860) 424-3705

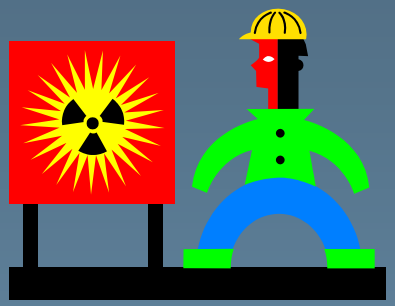
- Electronic version of Guidance Document www.ct.gov/dep/hazardouswaste

An Introduction to RCRA

- What is RCRA?
- Goals of RCRA
- How does RCRA affect Connecticut?
- DEP's Hazardous Waste homepage: http://www.ct.gov/dep/cwp/
- EPA's Waste Management homepage: www.epa.gov/osw/index.htm
- DEP will be revising regulations to keep track with Federal changes

Hazardous or Non-Hazardous: That is the Question!

- What does it mean to be hazardous?
  - *"Generic" Definition*
  - *"Official" Definition*



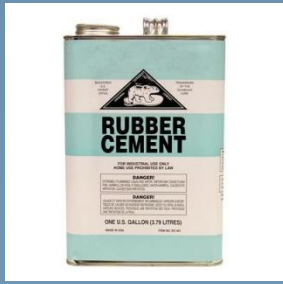
- Listed Wastes
  - **"F" List** Waste From Non-Specific Sources
  - **"K" List** Waste From Specific Sources
  - **"U" List** Non-acute Commercial Chemical Products
  - **"P" List** Acute Commercial Chemical Products

Hazardous or Non-Hazardous: That is the Question!

- Characteristic Hazardous Wastes
  - *Ignitable (D001)*
    - *Flashpoint < 140°F*
  - *Corrosive (D002)*
    - *pH ≤2 or ≥12.5*
  - *Reactive (D003)*
    - *Can react and ignite, explode, release toxic gasses*
    - *Contains cyanide and/or sulfides*
  - *Toxic (D004-D043)*
    - *Exceeds limits based on TCLP results*

Hazardous or Non-Hazardous: That is the Question!

- Other Considerations
  - *Mixture Rule*
    - *A mixture of solid wastes*
  - *Used Oil > 1,000 ppm total halogens*
  - *Derived From Rule*
    - *Waste derived from the treatment of listed waste*



Hazardous or Non-Hazardous: That is the Question!

- Connecticut Regulated Wastes

Code*	Description	Examples
CR01	Waste PCB's	PCB Oils, PCB Ballasts, PCB Transformers
CR02	Waste Oil	Fuel Oil, Lubricating Oil, Hydraulic Oil
CR03	Waste Water Soluble Oil	Cutting Oil, Cooling Oil
CR04	Waste Chemical Liquids	Latex Paint, Sludges, Glycol/Glycol Substitutes
CR05	Waste Chemical Solids	Grinding Dust, Oily Rags, Corrosive Solids, Contaminated Soil

** These are wastes which are neither characteristic nor listed RCRA Hazardous Wastes per 40 CFR 261, but a facility permit is required by Connecticut General Statutes (CGS) Section 22a-454 for a person engaged in the business of storing, treating, disposing or transporting them. However, CGS do not require the transporter to be licensed to transport CR05 (Waste Chemical Solid).*

Hazardous Waste Determination

- Definition
- Knowledge of Process
- Laboratory Testing
- Recordkeeping Requirement
  - *Annual update*
  - *Maintain onsite*

Example Waste Determination

WASTE CHARACTERIZATION

Waste Description/Name: Presswash X & Ink

Hazardous: X **Non-Hazardous:** _____ **Universal Waste:** _____ **Used Oil:** _____

DOT Shipping Name: RQ, UN1993, Waste Flammable Liquid, N.O.S. (Petroleum distillate) PG II, (D001)

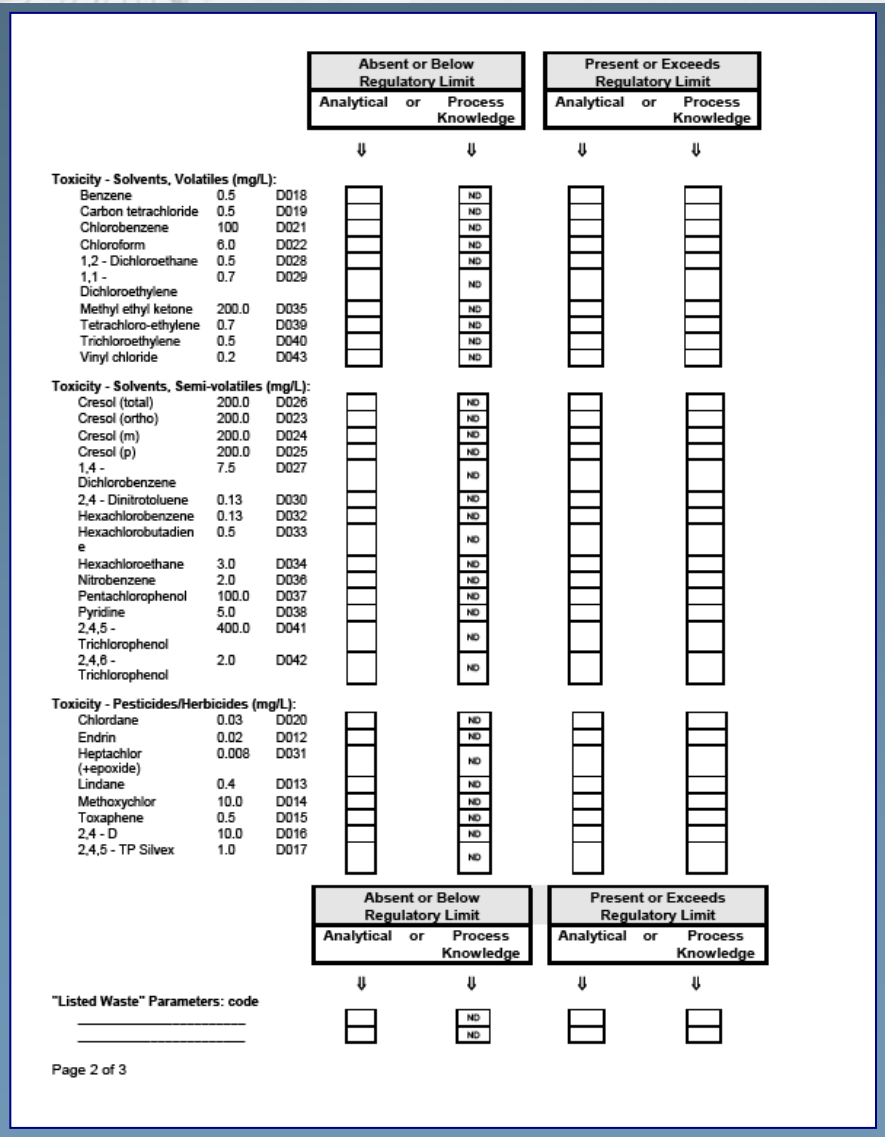
Instructions:
Check all boxes that apply

Characteristics:

			Laboratory Results on File	Process Knowledge Documented
Ignitability *(choose one)*				
☐	*Not ignitable*			
X	Liquid and flashpoint < 140° F	D001		X
☐	Non-liquid and when ignited burns vigorously	D001		
☐	Ignitable compressed gas	D001		
☐	DOT oxidizer	D001		
Corrosivity *(choose one)*				
X	*Not corrosive*			X
☐	pH < or = 2	D002		
☐	pH > or = 12.5	D002		
Reactivity *(choose one)*				
X	*Not reactive*			X
☐	HCN > or = 250 mg/kg	D003		
☐	H_2S > of = 500 mg/kg	D003		
☐	Explosive	D003		
☐	Water reactive	D003		

			Absent or Below Regulatory Limit		Present or Exceeds Regulatory Limit	
			Analytical	Process Knowledge	Analytical	Process Knowledge
Toxicity – Metals (mg/L):						
Arsenic	5	D004		ND		
Barium	100	D005		ND		
Cadmium	1.0	D006		ND		
Chromium	5.0	D007		ND		
Lead	5.0	D008		ND		
Mercury	0.2	D009		ND		
Selenium	1.0	D010		ND		
Silver	5.0	D011		ND		

Example Waste Determination



			Absent or Below Regulatory Limit: Analytical	Absent or Below Regulatory Limit: Process Knowledge	Present or Exceeds Regulatory Limit: Analytical	Present or Exceeds Regulatory Limit: Process Knowledge
Toxicity - Solvents, Volatiles (mg/L):			⇩	⇩	⇩	⇩
Benzene	0.5	D018		ND		
Carbon tetrachloride	0.5	D019		ND		
Chlorobenzene	100	D021		ND		
Chloroform	6.0	D022		ND		
1,2 - Dichloroethane	0.5	D028		ND		
1,1 - Dichloroethylene	0.7	D029		ND		
Methyl ethyl ketone	200.0	D035		ND		
Tetrachloro-ethylene	0.7	D039		ND		
Trichloroethylene	0.5	D040		ND		
Vinyl chloride	0.2	D043		ND		
Toxicity - Solvents, Semi-volatiles (mg/L):						
Cresol (total)	200.0	D026		ND		
Cresol (ortho)	200.0	D023		ND		
Cresol (m)	200.0	D024		ND		
Cresol (p)	200.0	D025		ND		
1,4 - Dichlorobenzene	7.5	D027		ND		
2,4 - Dinitrotoluene	0.13	D030		ND		
Hexachlorobenzene	0.13	D032		ND		
Hexachlorobutadiene	0.5	D033		ND		
Hexachloroethane	3.0	D034		ND		
Nitrobenzene	2.0	D036		ND		
Pentachlorophenol	100.0	D037		ND		
Pyridine	5.0	D038		ND		
2,4,5 - Trichlorophenol	400.0	D041		ND		
2,4,6 - Trichlorophenol	2.0	D042		ND		
Toxicity - Pesticides/Herbicides (mg/L):						
Chlordane	0.03	D020		ND		
Endrin	0.02	D012		ND		
Heptachlor (+epoxide)	0.008	D031		ND		
Lindane	0.4	D013		ND		
Methoxychlor	10.0	D014		ND		
Toxaphene	0.5	D015		ND		
2,4 - D	10.0	D016		ND		
2,4,5 - TP Silvex	1.0	D017		ND		
			Absent or Below Regulatory Limit: Analytical	Absent or Below Regulatory Limit: Process Knowledge	Present or Exceeds Regulatory Limit: Analytical	Present or Exceeds Regulatory Limit: Process Knowledge
			⇩	⇩	⇩	⇩
"Listed Waste" Parameters: code						
_____				ND		
_____				ND		

Page 2 of 3

Example Waste Determination

	Absent or Below Regulatory Limit		Present or Exceeds Regulatory Limit	
	Analytical	or Process Knowledge	Analytical	or Process Knowledge
	⇩	⇩	⇩	⇩
Other Parameters:				
Halogens, Total		ND		
Heat Content (BTU Value)		ND		
PCBs		ND		
Petroleum Hydrocarbons, Total		ND		
Suspended Solids, Total		ND		

Analytical Information (specify laboratory/sample number(s) and attach analytical results):

Not Applicable – See Below

Process knowledge information (Materials used, process description): The waste stream is generated when the press rollers are washed with the Presswash X. The only two raw materials used in the process are the soy based inks which are non-hazardous and the press wash. Based on the material safety data sheets (MSDSs), the press wash has a flashpoint less than 140 degrees Fahrenheit making this combination ignitable (DOO1) and reactive (DOO3). Since the press wash constitutes the bulk of the mixture, laboratory sampling will not be conducted.

Additional comments:

Waste Characterization reviewed by:

Name: _____ **Title:** _____

Signature: _____

What is my Status?

- What is a Generator?
  - *A generator is anyone who generates hazardous waste.*
  - *Generate vs. Accumulate*
- Connecticut Generator Classifications
  - *Conditionally Exempt Small Quantity Generator (CESQG)*
  - *Small Quantity Generator (SQG)*
  - *Large Quantity Generator (LQG)*

What is my Status?

- Conditionally Exempt Small Quantity Generator (CESQG)
  - *Generate ≤ 220 lbs per month (non-acute) (1/2 drum)*
  - *Generate ≤ 2.2 lbs per month (acute)*
  - *Accumulate < 2,200 lbs on site (3-5 drums)*
  - *What requirements apply to CESQG?*
    - *Waste determinations*
    - *Accumulation and generation limits*
    - *DOT shipping requirements*
    - *Universal Waste*
    - *Used Oil*

A CESQG guidance manual is available from CTDEP and is entitled "Conditionally Exempt Small Quantity Generator Handbook – Guidance for Hazardous Waste Handlers"

What is my Status?

- Small Quantity Generator (SQG)
  - *Generate between 220 lbs (1/2 drum) and 2,200 lbs (3-5 drums) per month (non-acute)*
  - *Generate ≤ 2.2 lbs per month (acute)*
  - *Accumulate < 2,200 lbs on site (3-5 drums)*
  - *What requirements apply to SQG?*
    - *CESQG requirements*
    - *Waste must be offsite within 180 days*
    - *Minimize waste generation*
    - *Proper closure of the HWSA*
    - *Manifest waste*
    - *Training*
    - *EPA ID number*
    - *Inspection program*
    - *Emergency program*
    - *Storage tanks*

Generator classification is <u>not</u> based on how much you ship offsite for disposal per month! Although this is an indication of how much waste you produce, your classification is based on <u>generation</u> and NOT disposal volume!

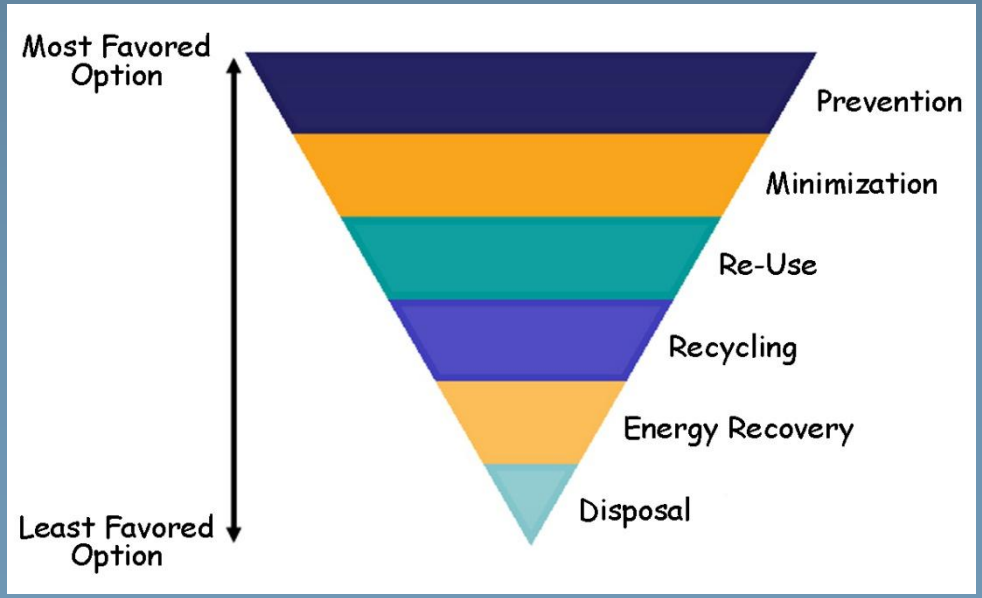
What is my Status?

- Large Quantity Generator (LQG)
  - *Generate ≥ 2,200 lbs per month (non-acute) (3-5 drums)*
  - *Generate > 2.2 lbs per month (acute)*
  - *What requirements apply to LQG?*
    - *SQG, CESQG requirements*
    - *Waste must be offsite within 90 days*
    - *No onsite storage limit*
    - *Contingency Plan*
    - *Annual training*
    - *Waste minimization plan*
    - *Written job descriptions*
    - *Biennial reporting*
    - *Air emissions standards*

LQG guidance and other waste guidance are available from EPA at the following website:
http://www.epa.gov/epawaste/hazard/index.htm

What is my Status?

- Minimize Your Size! (Waste Minimization)
  - *Source Reduction*
  - *Recycling*
  - *Beneficial Re-Use*
- Reduces Regulatory Requirements



Hazardous Waste Determination
Student Workbook Activity # 2

Directions: Apply the appropriate F-Listed waste code(s) provided in the parking lot to the process descriptions listed below.

1. Used paint thinner that contained the following chemicals and concentrations prior to use:

    a. 30% Methylene Chloride
    b. 30% Xylene
    c. 30% Isobutanol
    d. 10% Non-Regulated Material

    _____

2. Spent parts washing solution from a degreaser that contained the following chemicals and concentrations prior to use:

    a. 30% Carbon Tetrachloride
    b. 20% Acetone
    c. 20% Toluene
    d. 30% Non-Regulated Material

    _____

Generator Status
Student Workbook Activity # 3

Directions: Review the tables below for Generators 1, 2, and 3. Based on the information provided, determine the appropriate Generator classification for Generators 1, 2, and 3 (CESQG, SQG, or LQG).

Generator 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Generation Rates												
Acute (lbs)	0	0	1	0	0	0	1	0	0	1	0	0
Not Acute (lbs)	20	40	40	40	30	30	20	20	30	40	40	20
Accumulation Quantities (All Waste Shipped Off-Site at Each Highlighted Month)												
Acute (lbs)	0	0	1	0	0	0	1	1	0	1	1	1
Not Acute (lbs)	20	60	100	40	70	100	120	140	30	70	110	130

Generator 1 Generator Classification: _____

Generator 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Generation Rates												
Acute (lbs)	0	1	1	0	0	1	0	1	0	1	0	0
Not Acute (lbs)	200	400	400	800	800	900	200	200	300	400	400	200
Accumulation Quantities (All Waste Shipped Off-Site at Each Highlighted Month)												
Acute (lbs)	0	1	2	0	0	1	0	1	1	1	1	1
Not Acute (lbs)	200	600	1000	800	1600	2500	200	400	700	400	800	1000

Generator 2 Generator Classification: _____

Generator 3

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Generation Rates												
Acute (lbs)	0	0	2	0	2	1	1	1	1	0	1	2
Not Acute (lbs)	20	40	40	40	30	30	20	20	30	40	40	20
Accumulation Quantities (All Waste Shipped Off-Site at Each Highlighted Month)												
Acute (lbs)	0	0	2	0	2	3	1	2	3	0	1	2
Not Acute (lbs)	20	60	100	40	70	100	20	40	70	40	80	100

Generator 3 Generator Classification: _____

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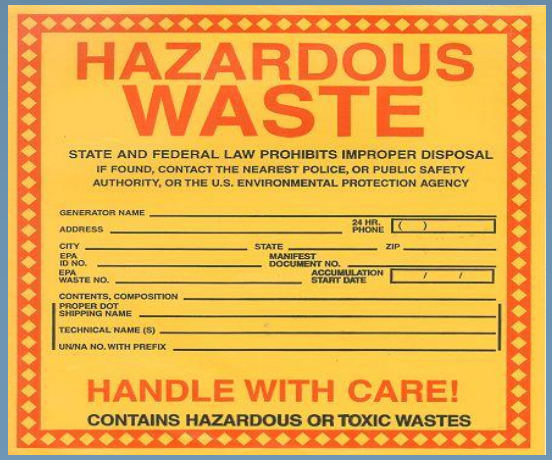
Episodic Generation

- Periodically (once or twice) exceed given classification
- What requirements apply?

Episodic Generator *If Monthly Generation Rate Exceedance is an Unforeseeable/Infrequent Event*	*Change Generator Status* *If Monthly Generation Rate Exceedance is a Common Occurrence*
1. *Manage generated waste in compliance with applicable generator classification (see above)* 2. *Document monthly generation rates* 3. *Document accumulation rates* 4. *Minimize potential for reoccurrence of episodic generation*	1. *Notify CTDEP in writing* 2. *Complete* Form 8700-12 *which can be found at* www.epa.gov *and submit to CTDEP.* 3. *Comply with new generator classification requirements (see above)*

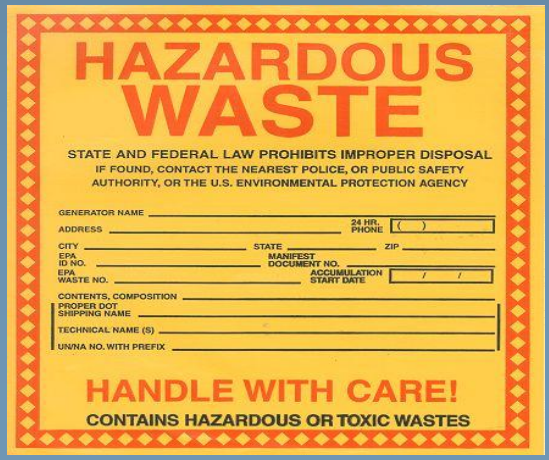
We Have Waste… So Now What?

- Container Management Options
  - *Satellite Accumulation Area (SAA)*
    - *a.k.a. POG, satellites*
  - *Hazardous Waste Storage Areas (HWSA)*
    - *a.k.a. MAAs, LT-180 areas*
- Container Specifics
  - *Labeled*
  - *Sound condition*
  - *Compatible with materials*
  - *Closed*



We Have Waste… So Now What?

- Marking & Labeling Requirements
  - *"Hazardous Waste" and other words to describe the waste*
  - *Generator's name and address*
  - *Generator's EPA identification number*
  - *Manifest document number*
  - *Accumulation start date*
  - *DOT shipping name and ID number*



We Have Waste… So Now What?

- What is a Satellite Accumulation Area?
  - *Located at or near point of generation*
  - *Under control of an operator*
  - *Quantity limits*
  - *Labeling*
    - *"Hazardous Waste" and other words to describe the waste*

We Have Waste… So Now What?

- Additional HWSA Requirements
  - *Sufficiently Impervious Surface*
  - *Adequate Aisle Spacing*
  - *Secondary Containment*
  - *Incompatibles*
  - *Accumulation Start Date*
  - *Secure*
  - *Weekly Inspections*
  - *Flammables*
    - *Distance to property line*
    - *Bonding of containers*

RCRA Empty

- DOT, OSHA and EPA all have different definitions of “empty”
- Only RCRA definition considered for this program
- Applies to containers or liner

RCRA Empty

Non-Acutely Hazardous Waste

- Wastes have been removed using common practices
- No more than 2.5 centimeters (1 inch) of material remains
- No more than 3 percent by weight of the container remains for containers with a capacity of 110 gallons or less
- No more than 0.3 percent by weight remains for containers with a capacity greater than 110 gallons

RCRA Empty

Acutely Hazardous Waste

- The container has an inner liner that prevents contact with the container and the liner is removed
- The container has been triple rinsed with a solvent appropriate for removing the acutely hazardous waste
- When triple rinsing is not appropriate, an equivalent method is used
- Rinsate becomes acutely hazardous per mixture rule

RCRA Empty

Gases

- Pressure in the container must be atmospheric pressure
- Aerosol cans

Tank Talk

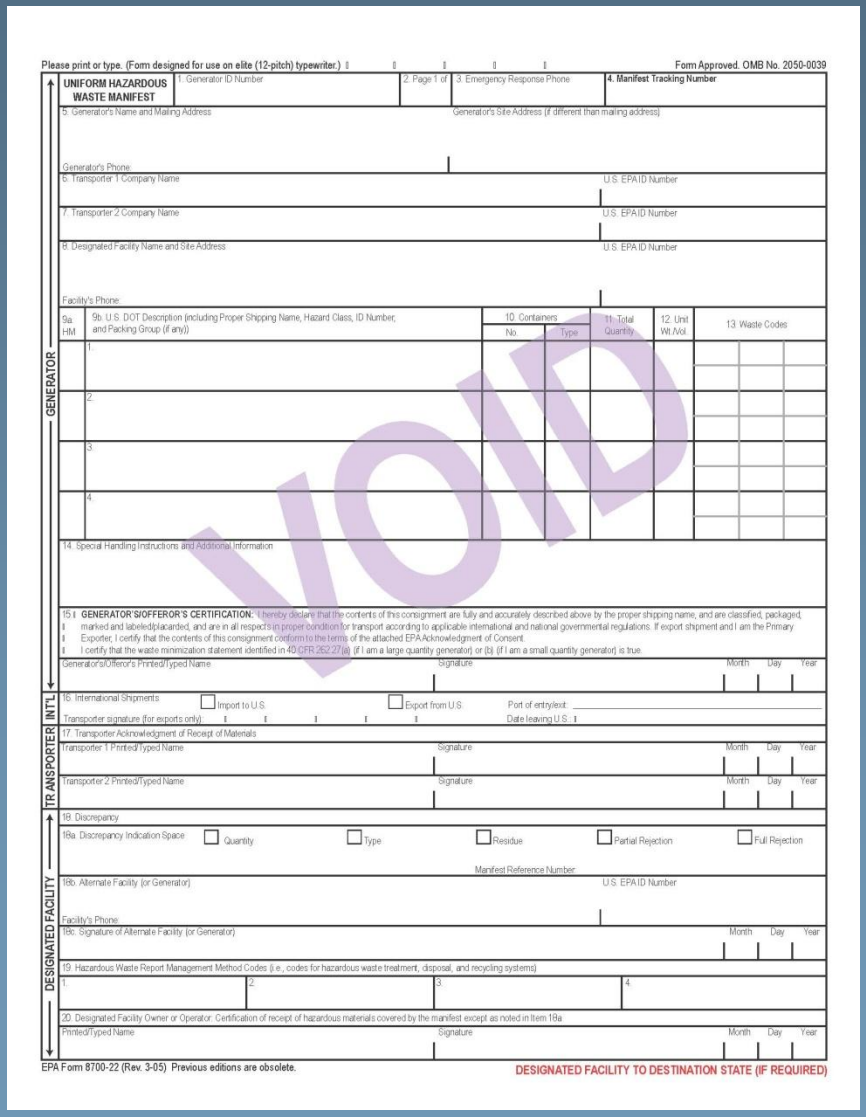
- Tank Systems
  - *Tank*
  - *Ancillary equipment (i.e. piping, valving)*
  - *Containment system*
- Waste Specifics
- Tank System Specifics
  - *Marking Requirements*
  - *Daily Inspections*
  - *Must be Covered!*

- Special Requirements for Ignitable and Reactive Wastes
  - *Follow NFPA-30*

The Manifest

- General Purpose
- How to Complete the Manifest
- Distribution
  - ***Page 1:*** *Destination facility to destination state*
  - ***Page 2:*** *Destination facility to generator state*
  - ***Page 3:*** *Destination facility to generator*
  - ***Page 4:*** *Destination facility copy*
  - ***Page 5:*** *Transporter copy*
  - ***Page 6:*** *Generator's initial copy*
  - ***Photocopy:*** *Submit to State*

Waste Manifest Form



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Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number

GENERATOR

5. Generator's Name and Mailing Address | Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name | U.S. EPA ID Number

7. Transporter 2 Company Name | U.S. EPA ID Number

8. Designated Facility Name and Site Address | U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.					
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name | Signature | Month | Day | Year

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. | 2. | 3. | 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

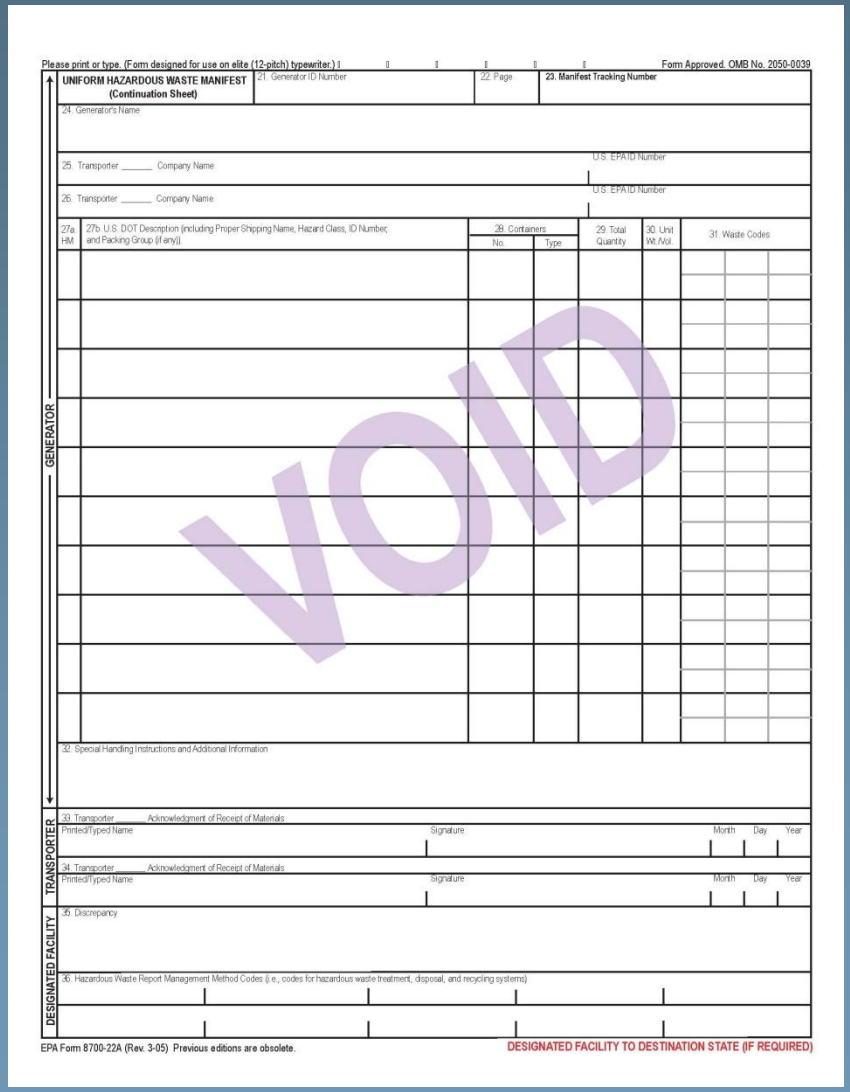
Printed/Typed Name | Signature | Month | Day | Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

VOID

Waste Manifest Form



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Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number

22. Page

23. Manifest Tracking Number

24. Generator's Name

25. Transporter _____ Company Name

U.S. EPA ID Number

26. Transporter _____ Company Name

U.S. EPA ID Number

27a HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

GENERATOR

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

VOID

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

The Manifest

- CT DEP Specific
  - *Send Photocopy of page 1 (top copy) to CT DEP within 7 days of the date of shipment!!!!*
- Manifest Discrepancies
  - *Quantity*
  - *Type*
  - *Non-acceptable waste*
  - *Residue*
- Recordkeeping & Reporting
  - *File copy 3 & 6 for at least 3 years*
  - *Exception Reporting*
  - *Contact transporter and facility*
  - *File report to DEP within 60 days*
  - *Maintain records for 3 years*

Land Disposal Restriction

- When are they required?
- What information is required?
- Recordkeeping
- One time notification
- Update notification
- Maintain in onsite files

Always Be Prepared!

- What is an Emergency Coordinator?
  - *Primary vs. Alternate(s)*
  - *Responsibilities*
- How do I prepare for an emergency?
  - *Emergency contact phone list*
  - *Emergency alarms & employee notification*
  - *Emergency response equipment*
  - *Fire suppression*

Always Be Prepared!

- Emergency Response Procedures
  - *Fire*
    - *Extinguish*
    - *Call fire department*
  - *Spill*
    - *Incidental vs. non-incidental*
    - *Call spill contractor*
  - *Notification to DEP*
    - *Name, address and EPA identification number of your facility*
    - *Date, time, and type of hazardous waste involved in the incident*
    - *Extent of injuries, if any*
    - *Estimated quantity and disposition of recovered materials*

Container Accumulation and Storage
Student Workbook Activity # 4

Directions: Use the information provided by the Generator to complete the Hazardous Waste Marking provided below for a 55-gallon drum of waste being accumulated in a Satellite Accumulation Area.

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR NAME _____
ADDRESS _____ 24 HR. PHONE ( )
CITY _____ STATE _____ ZIP _____
EPA ID NO. _____ MANIFEST DOCUMENT NO. _____
EPA WASTE NO. _____ ACCUMULATION START DATE / /
CONTENTS, COMPOSITION _____
PROPER DOT SHIPPING NAME _____
TECHNICAL NAME (S) _____
UNNA NO. WITH PREFIX _____

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES

I am filling this drum with various flammable liquids from my histology lab. The contents include the following:

- Acetone
- Xylene
- Isopropyl Alcohol

Container Accumulation and Storage
Student Workbook Activity # 5

Directions: Use the information provided by the Generator to complete the Hazardous Waste Marking provided below for a 55-gallon drum of waste which will be moved from Satellite Accumulation Area to the Hazardous Waste Storage Area. Take into consideration that the drum was filled today.

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR NAME _____
ADDRESS _____ 24 HR. PHONE ( )
CITY _____ STATE _____ ZIP _____
EPA ID NO. _____ MANIFEST DOCUMENT NO. _____
EPA WASTE NO. _____ ACCUMULATION START DATE / /
CONTENTS, COMPOSITION _____
PROPER DOT SHIPPING NAME _____
TECHNICAL NAME (S) _____
UN/NA NO. WITH PREFIX _____

HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

My waste drum is now full of various flammable liquids from my histology lab. The contents include the following:

- Acetone
- Xylene
- Isopropyl Alcohol

Tank Accumulation and Storage
Student Workbook Activity # 6

Directions: Use the information provided by the Generator to complete the Hazardous Waste Marking provided below for an above ground tank of waste which is accumulating hazardous waste at a facility. The first drop of waste was added to the tank yesterday.

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR NAME _____
ADDRESS _____ 24 HR. PHONE ( )
CITY _____ STATE _____ ZIP _____
EPA ID NO. _____ MANIFEST DOCUMENT NO. _____
EPA WASTE NO. _____ ACCUMULATION START DATE / /
CONTENTS, COMPOSITION _____
PROPER DOT SHIPPING NAME _____
TECHNICAL NAME (S) _____
UN/NA NO. WITH PREFIX _____

HANDLE WITH CARE!

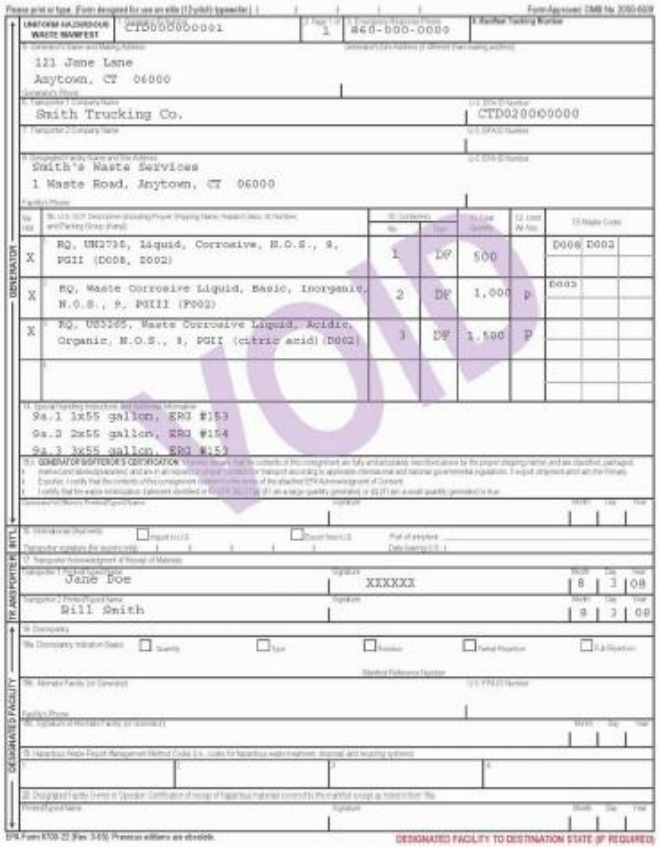
CONTAINS HAZARDOUS OR TOXIC WASTES

I am used to store spent acid etch with a pH less than 2 which contains the following materials:

- Sulfuric Acid
- Iron
- Water

Uniform Hazardous Waste Manifest
Student Workbook Activity # 8

Directions: Review the Uniform Hazardous Waste Manifest below and identify the required sections that are missing information. Take into consideration that the primary Transporter just left the Generator site.



UNIFORM HAZARDOUS WASTE MANIFEST — CTD000000001 — 1 — 860-000-0000

GENERATOR

121 Jane Lane
Anytown, CT 06000

Smith Trucking Co. — CTD020000000

Smith's Waste Services
1 Waste Road, Anytown, CT 06000

X	RQ, UN2735, Liquid, Corrosive, N.O.S., 8, PGII (D008, D002)	1	DF	500		D008 D002
X	RQ, Waste Corrosive Liquid, Basic, Inorganic, N.O.S., 8, PGIII (F002)	2	DF	1,000	P	D002
X	RQ, UN3265, Waste Corrosive Liquid, Acidic, Organic, N.O.S., 8, PGII (citric acid) (D002)	3	DF	1,500	P	

9a.1 1x55 gallon, ERG #153
9a.2 2x55 gallon, ERG #154
9a.3 1x55 gallon, ERG #153

TRANSPORTER(S)

Jane Doe — XXXXXX — 8 3 08
Bill Smith — 8 3 08

DESIGNATED FACILITY

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Robert C. Isner

Director

Waste Engineering & Enforcement Division

robert.isner@ct.gov

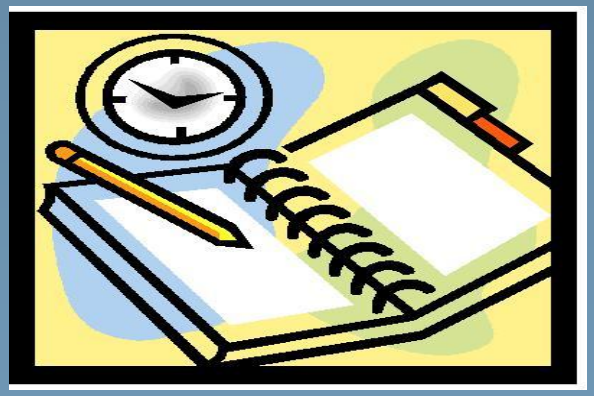
(860) 424-3264

What do I Need to Inspect?

- Written Inspection Schedule
  - *Monitoring equipment*
  - *Safety equipment*
  - *Emergency equipment*
  - *Security devices*
  - *Operating & structural equipment*
  - *Containers, storage areas, & containment systems*
  - *Tanks & ancillary equipment*
  - *Loading & unloading areas*

How Often do I Need to Inspect?

- Inspection Schedule
  - *Weekly: container, container storage area, & containment systems*
  - *Monthly: safety & emergency equipment*
  - *When used: loading & unloading areas*
  - *Daily: tanks*



How do I Document Inspections?

- Inspection Items
  - *Conditions*
  - *Labels*
  - *Dates*
  - *Containment*
  - *Etc.*

- Inspection Log
  - *Date & time of inspection*
  - *Full name of inspector*
  - *Notation of observations*
  - *Date & nature of repairs*
  - *Keep on file for 3 years from date of inspection*
  - *Follow up and record corrective actions*

Blank Weekly Inspection Form

Example

Instructions: Please use ink. Results of weekly inspections of hazardous waste containers and container storage areas must be recorded in this log. If any deficiencies are found, a description of the deficiencies must be recorded in the "Observation" column. Prompt and immediate action must be taken to correct any deficiencies observed. The date and nature of all corrective actions must be recorded in the "Corrective Actions Column". Once this log is completed, it should be maintained in a binder and must be kept on file for at least three years from the date of inspection. These inspection logs must be made available for inspection by State DEP inspectors.

Date of Inspection: _____ Time of Inspection: _____ a.m./p.m.

Full Name of Inspector: _____

Item/Condition to be checked	Yes	No	Observation/Deficiency	Corrective Actions and Date
Are all containers closed?				
Are all containers in GOOD condition (NOT leaking, rusted, bulging or otherwise in poor condition)?				
Are all containers marked?				
Does the marking include the words "Hazardous Waste" and other words to describe the waste?				
Are all markings legible and visible for inspection?				
Are all containers marked with accumulation start dates?				
Are dates less than 180 days?				
Is the amount of waste on site less than 1,000 kg (2,200 lbs)?				
Is there adequate aisle spacing?				
Are the containers stored on an impermeable base that is bermed?				
Are the base and berm free of gaps, cracks, and damage?				
Is the base free of spills, leaks, or other accumulation?				
Are incompatible materials separated by a wall or a berm?				

Note: If the "NO" column is checked, corrective action must be taken and the "Observation" and "Corrective Action" columns must be completed.

Additional Comments:

_____

_____

_____

Universal Waste

- Wastes include:
  - *Batteries*
  - *Mercury-containing thermostats*
  - *Mercury-containing equipment*
  - *Lamps*
  - *Used electronics*
  - *Certain pesticides*
- Generator Status

Universal Waste

- How do I store my universal waste?
  - *Container rules:*
    - *Closed*
    - *Structurally sound*
    - *Compatible with contents*
    - *Capable of preventing leakage, spillage, or damage*
  - *Date of initial storage provided*
  - *One year to remove from site*

Universal Waste

- Universal Waste labeling
  - *Accumulation start date*
  - *One of the following*
    - *"Universal Waste _____"*
    - *"Waste _____"*
    - *"Used _____"*

Example Label

Universal Waste

- Off-Site Shipments
  - *Licensed Universal Waste Disposal Facility*
  - *Applicable DOT Regulations for the following:*
    - *Lead acid batteries*
    - *Nickel cadmium batteries*
    - *Mercury-containing thermostats*
    - *Mercury-containing equipment*

Universal Waste

- Training Requirements
  - *Proper handling procedures*
  - *Emergency procedures*
- Spill/Release Procedures

What is Used Oil?

- Oil that is no longer fit for its original use
- Examples include:
  - *Gear, chain, and ball bearing lubricants*
  - *Hydraulic & compressor oils*
  - *Metalworking fluids & oils*
  - *Heat transfer oils*
  - *Crankcase oil & motor vehicle oils*
  - *Dielectric fluid*

Used Oil

- Do not mix with hazardous waste
- Test waste for characteristic waste codes
- Common contaminants include:
  - Halogenated Solvents
  - TCLP Metals
  - PCBs
  - Flammable Solvents

How Do I Manage Used Oil?

- Used Oil Management (Tanks & Drums)
  - *Marked with "Used Oil"*
  - *Good condition*
  - *Sealed unless adding or removing oil*
  - *Located indoors or under roof with containment*
  - *Suitable impervious surface*

Used Oil

- How do I ship my used oil?
  - *CT DEP Licensed Transporter*
  - *CT DEP Licensed Used Oil Facility*
- Onsite combustion in a space heater
  - *Oil must be generated onsite*
  - *Heater < 0.5 million Btu/hr capacity*
  - *Exhaust is vented outside*
  - *Oil heating value is >5,000 Btu/lb*

Closure Requirements

- Characterize the Contamination
- Constituents of concern list
- Test for Contamination
  - *Concrete sampling*
  - *Wipe sampling*
  - *Soil sampling*
- Cleanup the Contamination
- Verify that Cleanup is Complete
  - *Meet media closure criteria*
  - *Meet background conditions*
- Records/Documentation
  - *Maintain closure records onsite*
  - *File DEP/EPA forms to change or renew generator status*

Recycling Introduction

How does this relate to Hazardous Waste?

- Recycling is now a state law in Connecticut
- Reduces environmental exposure due to:
  - *Less waste on-site*
  - *Less waste ELSEWHERE (landfills, transfer stations, etc.)*

PA 10-87 Requires DEP to Expand the List of Designated Recyclable Items by October 1, 2001

- Items already mandated for recycling (prior to P.A.10-87):

  Glass Food Containers; metal food containers

  Scrap Metal

  High Grade White Office Paper

  Old corrugated cardboard

  Old Newspapers

  Waste Oil

  Leaves

  Lead-acid storage batteries

  Ni-Cd rechargeable batteries

  Glass

Additional designated recyclables based on regulations to be adopted by 10/2011 (P.A.10-87)

- PET (#1 plastic) and HDPE (#2 plastic) containers
- Boxboard (e.g. cereal boxes)
- Magazines
- Residential High Grade White Paper
- High Grade Colored Paper (Colored Ledger)

Recycling

- What should my company be doing?
  - *Solid Waste Audit (What recycling is deficient?)*
  - *Proof of Recycling*
  - *Recycling Contact*
  - *Operations Manual/Plan*
  - *Business Profile*
- DEP's Recycling Homepage:

  www.ct.gov/dep/recycle

Recycling

What should my company be doing? (continued)

- Use reusable or reduced transport packaging
- Identify materials currently being disposed that have recycling markets
  - *Ex. Paper beverage cartons, used textiles, other types of plastics, other types of paper, yard waste, clean wood, electronic devices, etc.*
- Consider changing processes to reduce waste
- Purchase environmentally-preferable products
  - *Ex. Products with recycled content, recyclable, durable and reusable rather than disposable*

Universal Waste
Student Workbook Activity # 11

Directions: Identify which of the following listed materials are recognized as Universal Waste in the State of Connecticut by placing an "X" in the space provided.

____ 4-Foot Fluorescent Lamps

____ Lead Acid Car Battery

____ Asbestos Tiles

____ Mercury Thermostat

____ Nickel Cadmium Rechargeable Battery

____ Spent Flammable Solvent Blend

____ Used Aerosol Can

____ Computer Monitor

____ Compact Fluorescent Bulb

____ Office Paper

____ Used Motor Oil

____ Lithium Battery

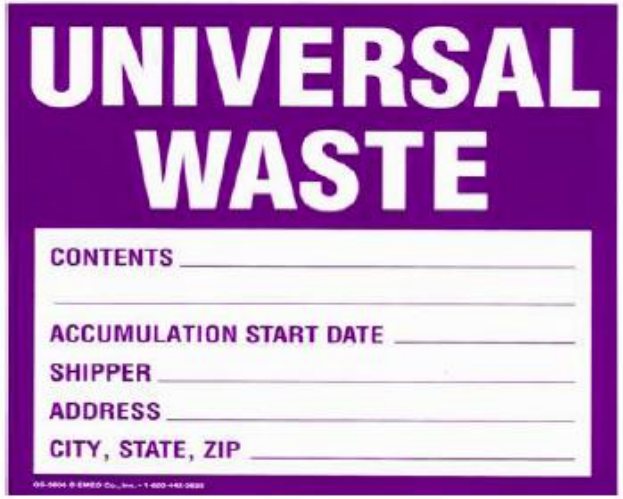
____ LCD Projector

____ Computer Terminal

____ Alkaline Battery

Universal Waste
Student Workbook Activity # 12

Directions: Complete the Universal Waste Marking below with the required information for Fluorescent Lamps stored at your facility. The containers were filled today by one of your employee's who was asked to replace all of your burnt out bulbs.



Used Oil
Student Workbook Activity # 13

Directions: Review the two descriptions below and determine whether or not the contents of the containers are considered Used Oil. For each of the containers that do not qualify as Used Oil, describe why and identify potential corrective actions in the space provided.

1. A 55-gallon drum was generated through vehicle maintenance activities. This drum is filled with equal concentrations of gasoline, engine coolant (water and ethylene glycol mixture), and used motor oil. Do the contents of this container meet the definition of Used Oil?

   ☐ **Yes**
   ☐ **No**

   If you selected no, describe why not and identify potential corrective actions in the space provided below:

2. A 5-gallon pail of lubricating oil was generated by a company when they switched out an oil filter from a machine which uses petroleum based oil as a lubricant. This oil has a flashpoint of 430°F; contains no metals, halogens, or Polychlorinated Halogens (PCBs); and has a neutral pH. Do the contents of this container meet the definition of Used Oil?

   ☐ **Yes**
   ☐ **No**

   If you selected no, describe why not and identify potential corrective actions in the space provided below:

Recycling
Student Workbook Activity # 15

Directions: Review the list of recyclable materials provided below. Place an "X" in the space provided for the items that you currently recycle. Place a "?" in the space provided for the items that you currently do not recycle. Provide comment in the discuss section describing potential management options for implementing recycling programs for the items in the list which were assigned a "?".

_ Glass & Metal Food & Beverage Containers

_ Corrugated Cardboard

_ Newspaper

_ White Office Paper

_ Scrap Metal

_ Nickel Cadmium Rechargeable Batteries

_ Used Oil

_ Lead Acid Batteries

_ Leaves

_ Type 1 & 2 Plastic Containers

_ Magazines

_ Drink Boxes & Juice Containers

_ Discarded Mail

_ Used Electronics

Discussion:

Questions?