Connecticut Department of Environmental Protection

79 Elm Street
Hartford, CT

A Road Map to RCRA: Small Quantity Generator (SQG) Student Workbook

A Note to the Trainee:

In addition to this training course, site-specific training is required. The site-specific training must include on-the-job training, site-specific wastes generated, inspections, and emergency procedures. You should contact your supervisor or site environmental manager to determine what additional training you will need to ensure that you meet your training requirements and handle your hazardous waste in compliance with all safety and legal obligations.

A Road Map to RCRA

Small Quantity Generator Outreach Program

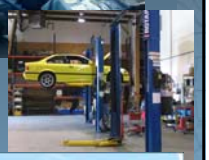
FUSS & O'NEILL
Disciplines to Deliver

Introduction

- Logistics
  - *Bathrooms*
  - *Breaks*
  - *Snacks/Refreshments*
- Class Materials
- Overview
- Topics for Discussion
- Question and Answer
- Conclude

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
- Where electric version of Guidance Document can be found

The Road Map

SQG Guidance Document - How to Use the Guide

- *Additional Clues & Hints*
- *Hot Topics*
- *STOP! (This topic could spell trouble if not understood!)*
- *Look to the compass for definitions, acronyms, and clarification*

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

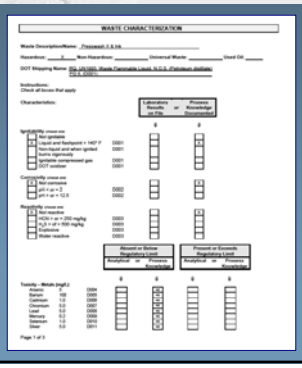
Code*	Description	Examples
CR01	Waste PCB's	PCB Oils, PCB Ballasts, PCB Transformers
CR02	Waste Oil	Fuel Oil, Lubricating Oil, Hydraulic Oil
CR03	Waste Water Soluble Oil	Cutting Oil, Cooling Oil
CR04	Waste Chemical Liquids	Latex Paint, Sludges, Glycol/Glycol Substitutes
CR05	Waste Chemical Solids	Grinding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

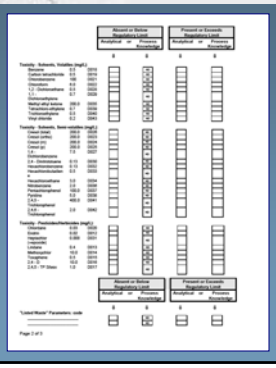
Hazardous Waste Determination

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

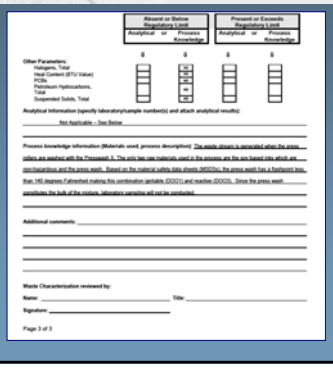
Example Waste Determination



Example Waste Determination



Example Waste Determination



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 not 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 generation and NOT disposal volume!

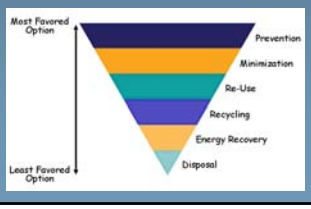
What is my Status?

- 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



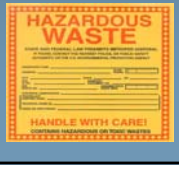
Episodic Generation

- 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)*

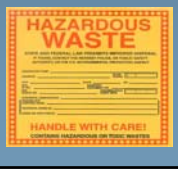
We Have Waste… So Now What?

- 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

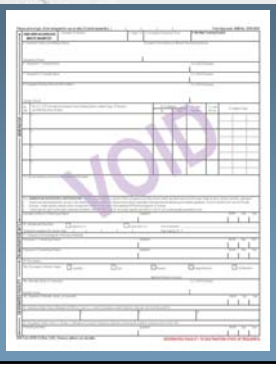
Tank Talk

- 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



Waste Manifest Form

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*

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

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.)*

Recycling

- The following items are required to be recycled:
  - Glass & Metal Food/Beverage Containers
  - Corrugated Cardboard
  - Newspaper
  - White Office Paper
  - Scrap Metal
  - Nickel Cadmium Rechargeable Batteries
  - Lead Acid Batteries
  - Leaves
  - Used Oils

Recycling

- The following items should be recycled:
  - Type 1 & 2 Plastic Containers
  - Magazines
  - Drink Boxes & Juice Cartons
  - Discarded Mail (after shredding)
  - Used Electronics

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

Questions?

Completing the Uniform Hazardous Waste Manifest

Instructions for Generators

Item 1: Generators U.S. EPA Identification Number

Enter the generator's U.S. EPA twelve digit identification number, or the State generator identification number if the generator site does not have an EPA identification number. The U.S. EPA Identification Number is a permanent number assigned by the EPA or its state agency designee to a generator's site address under the Resource Conservation Recovery Act (RCRA) or Toxic Substance Control Act (TSCA) regulations. This twelve digit identifier generally has three capital letters designating the site's state followed by nine numerals. If temporary state-assigned identification numbers are used, they must not have expired or been superseded by a final number. To find a US EPA ID number check with the state first, then the US EPA or the generator's Acknowledgment of Hazardous Waste Activity Form.

Item 2: Page 1 of ___

Enter the total number of pages used to complete this Manifest (*i.e.,* the first page (EPA Form 8700-22) plus the number of Continuation Sheets (EPA Forms 8700-22A), if any). The total number of pages is to be placed in this blank, including the first page and all continuation sheets. That total must be entered on each of the continuation sheets as well, as in "**2 of X**", "**3 of X**", etc.

Item 3: Emergency Response Phone Number

Enter a phone number for which emergency response can be obtained in the event of an incident during transportation. The number must:

1. Be the number of the generator or an agency or organization who is capable of and accepts responsibility for providing detailed information about the shipment;
2. Reach a phone that is monitored 24 hours a day at all times the waste is in transportation; and
3. Reach someone who is either knowledgeable of the hazardous waste being shipped and has comprehensive emergency response and spill cleanup/incident mitigation information for the material being shipped or has immediate access to a person who has that knowledge and information about that shipment.

If more that one emergency response number applies to the various wastes listed on the manifest, Item 3 is left blank and phone numbers associated with each specific material should be entered after its description in Item 9b.

Item 4: Manifest Tracking Number

An EPA registered printer preprints this unique tracking number on the manifest. The number is comprised of 12 alphanumeric characters – 9 numeric characters followed by a unique 3-letter suffix.

Item 5: Generator's Mailing Address, Phone Number, and Site Address

Enter the name of the generator, the mailing address to which the completed manifest signed by the destination facility should be mailed, and the generator's telephone number. The telephone number should be a number where the generator may be reached to provide instructions in the event of an emergency or if the designated facility rejects some or all of the shipment. Also, enter the physical site address from which the shipment originates only if this address is different than the mailing address.

Item 6: Transporter 1 Company Name & U.S. EPA ID Number

Enter the company name and U.S. EPA ID number of the first transporter who will transport the waste. Vehicle or driver information may not be entered here.

Item 7: Transporter 2 Company Name & U.S. EPA ID Number

Enter the company name and U.S. EPA ID number of the second transporter who will transport the waste. Vehicle or driver information may not be entered here. If more than two transporters are needed, use a Continuation Sheet(s) (EPA Form 8700-22A).

Item 8: Designated Facility Name, Site Address, Phone Number, & U.S. EPA ID Number

Enter the company name and site address of the facility designated to receive the waste listed on the manifest. Also enter the facility's phone number and the U.S. EPA twelve digit identification number of the facility.

Item 9: U.S. DOT Shipping Description/Waste Description

Item 9a - If the wastes identified in 9b consist of hazardous and nonhazardous materials, then identify the hazardous materials by entering an "X" in the Item next to the corresponding hazardous material identified in Item 9b. If the material is classified as a hazardous substance, "RQ" may be used in pace of an "X".

Item 9b - Enter the U.S. DOT Proper Shipping Name, Hazard Class or Division, Identification Number (UN/NA) and Packing Group (if any) for each waste identified in 49 CFR 172. Include technical name(s) and reportable quantity references, if applicable.

Item 10: Containers Number & Type)

Enter the number of containers for each waste and the appropriate abbreviation from Table I (below) for the type of container.

Table I - Types of Containers

BA	Burlap, cloth, paper or plastic bags.
CF	Fiber or plastic boxes, cartons or cases.
CM	Metal boxes, cartons or cases (including roll-offs).
CW	Wooden boxes, cartons or cases.
CY	Cylinders.
DF	Fiberboard or plastic drums, barrels or kegs.
DM	Metal drums, barrels or kegs.
DT	Dump truck.
DW	Wooden drums, barrels or kegs.
HG	Hopper or gondola cars.
TC	Tank cars.
TP	Portable tanks.
TT	Cargo tanks (tank trucks).

Item 11: Total Quantity

Enter, in designated boxes, the total quantity of waste. Round partial units to nearest whole unit, and do not enter decimals or fractions. To the extent practical, report quantities using appropriate units of measure that will allow you to report quantities with precision. Waste quantities entered should be based on actual measurements or reasonably accurate estimates of actual quantities shipped. Container capacities are not acceptable as estimates.

Item 12: Units of Measure (Weight/Volume)

Enter, in designated boxes, the appropriate abbreviation from Table II (below) for the unit of measure.

Table II – Units of Measure

G	Gallons (liquids only).
K	Kilograms.
L	Liters (liquids only).
M	Metric Tons (1000 kilograms).
N	Cubic Meters.
P	Pounds.
T	Tons (2000 pounds).
Y	Cubic Yards.

Note: *Tons, Metric Tons, Cubic Meters and Cubic Yards should only be reported in connection with very large bulk shipments, such as rail cars, tank trucks or barges.*

Item 13: Waste Codes

Enter up to six federal and state waste codes to describe each waste stream identified in Item 9b. State waste codes that are not redundant with federal codes must be entered here, in addition to the federal waste codes that are most representative of the properties of the waste.

Item 14: Special handling Instructions & Additional Information

Generators may enter any special handling or shipment-specific information necessary for the proper management or tracking of the materials under the generator's or other handler's business processes, such as:

- Waste profile numbers,
- DOT special permit numbers,
- Container codes,
- Bar codes or
- Response guide numbers.

Generators may also use this space to enter additional descriptive information about their shipped materials, such as:

- Chemical names,
- Constituent percentages,
- Physical state, or
- Specific gravity of wastes identified with volume units in Item 12.

This space may be used to record limited types of federally required information for which there is no specific space provided on the manifest, including:

- Alternate destination facility
- Manifest tracking number of the original manifest for rejected wastes and residues that are re-shipped under a second manifest
- The specification of PCB waste descriptions and out-of-service dates required under 40 CFR 761.207.

Generators, however, cannot be required to enter information in this space to meet state regulatory requirements.

Item 15: Generator's/Offeror's Certification

The generator must read, sign, and date the waste minimization certification statement. In signing the waste minimization certification statement, those generators who have not been exempted by statute or regulation from the duty to make a waste minimization certification under section 3002(b) of RCRA are also certifying that they have complied with the waste minimization requirements.

The Generator's Certification also contains the required attestation that the shipment has been properly prepared and is in proper condition for transportation.

When a party other than the generator prepares the shipment for transportation, this party may also sign the shipper's certification statement as the offeror of the shipment. This is seen when rejected loads or container residues are re-shipped to alternative facilities or rejected back to the generator from the destination facility.

Generator or Offeror personnel may preprint the words "On behalf of" in the signature block to indicate that the individual signs as the employee or agent of the named principal.

Instructions for International Shipments

Item 16: International Shipments

For Export Shipments - The primary exporter must check the export box and enter the point of exit (city and state) from the United States. The transporter must sign and date the manifest to indicate the day the shipment left the United States. Also, transporters of hazardous waste shipments must deliver a copy of the manifest to the U.S. Customs when exporting the waste across U.S. borders.

For Import Shipments - The importer must check the import box and enter the point of entry (city and state) into the United States. The receiving facility is required to mail a final, signed copy of the manifest to EPA.

Instructions for Transporters

Item 17: Transporter's Acknowledgements of Receipt

Enter the name of the person accepting the waste on behalf of the first transporter. That person must acknowledge acceptance of the waste described on the manifest by signing and entering the date of receipt. Only one signature per transportation company is required. Signatures are not required to track the movement of wastes in and out of transfer facilities, unless there is a change of custody between transporters.

If applicable, enter the name of the person accepting the waste on behalf of the second transporter. That person must acknowledge acceptance of the waste described on the manifest by signing and entering the date of receipt.

Note: *Transporters who are acting as importers or exporters of hazardous waste may have responsibilities to enter information in the International Shipment Block. See above instructions for Item 16.*

Instructions for Owners & Operators of Treatment, Storage & Disposal Facilities

Item 18: Discrepancy

All discrepancies require generator consultation, however, the TSDF does not need permission to return the shipment to the generator.

Item 18a – Discrepancy Indication

The authorized representative of the designated (or alternative) facility's owner or operator must note in this space any discrepancies between the waste described on the Manifest and the waste actually received at the facility. Manifest discrepancies are:

1. Significant differences between the quantity of hazardous waste designated on the manifest, and the quantity of hazardous waste a facility actually receives (see Appendix A),
2. Significant differences between the type of hazardous waste designated on the manifest, and the type of hazardous waste a facility actually receives (see Appendix A),
3. Rejected wastes, which may be a full or partial shipment of hazardous waste that the TSDF can not accept, or
4. Container residues, which are residues that exceed the quantity limits for "empty" containers (see Appendix B).

For rejected loads and residues, check the appropriate box if the shipment is a rejected load or a regulated residue that cannot be removed from a container. Enter the reason for the rejection or the inability to remove the residue and a description of the waste. Also, reference the manifest tracking number for any additional manifests being used to track the rejected waste or residue shipment from the original manifest.

Owners and operators of facilities located in unauthorized states who cannot resolve significant differences in quantity or type within 15 days of receiving the waste must submit to the Regional Administrator a letter with a copy of the Manifest at issue describing the discrepancy and attempts to reconcile it.

Owners and operators of facilities located in authorized states should contact their State agency for information on where to report discrepancies involving "significant differences" to state officials.

Item 18b – Alternative Facility or Generator

Enter the name, address, phone number and EPA Identification Number of the Alternative Facility which the rejecting TSDF has designated, after consulting with the generator, to receive a fully rejected waste shipment. In the event that a fully rejected shipment is being

returned to the generator, the rejecting TSFD may enter the generator's site information in this space. This field is not to be used to forward partially rejected loads or residue waste shipments.

Item 18c – Alternative Facility or Generator Signature

The authorized representative of the alternate facility (or the generator in the event of a returned shipment) must sign and date this field to acknowledge receipt of the fully rejected wastes or residues identified by the original TSDF.

Item 19: Hazardous Waste Report Management Method

Enter the most appropriate Hazardous Waste Report Management Method Code for each waste listed in Item 9. The Hazardous Waste Report Management Method Code is to be entered by the first TSDF that receives the waste and is the code that best describes the way in which the waste is to be managed when received by the TSDF.

These codes are updated routinely and published in the instructions accompanying the current edition of the Hazardous Waste Report Forms. An updated list of these codes can be found at *www.epa.gov/epaoswer/hazwaste/data/index.htm#br*.

Note: *These codes do not necessarily reference ultimate disposal of the hazardous waste. Rather, they identify how the waste will be handled by the receiving TSDF.*

Item 20: Designated Facility Owner/Operator Certification of Receipt

Enter the name of the person receiving the waste on behalf of the owner or operator of the facility. That person must acknowledge receipt or rejection of the waste described on the Manifest by signing and entering the date of receipt or rejection where indicated. Since the Facility Certification acknowledges receipt of waste except as noted in the Discrepancy Space in Item 18a, the certification should be signed for both waste receipt and waste rejection, with the rejection being noted and described in the space provided in Item 18a.

Instructions for Generators

Item 21: Generator's U.S. EPA Identification Number

Enter the generator's U.S. EPA twelve digit identification number, or the State generator identification number if the generator site does not have an EPA identification number. This is the same number identified in Item 1 on the Manifest (EPA Form 8700-22)

Item 22: Page ____

Enter the page number of this Continuation sheet.

Item 23: Manifest Tracking Number

Enter the manifest tracking number from Item 4 of the Manifest form to which this continuation sheet is attached.

Item 24: Generator's Name

Enter the generator's name as it appears in Item 5 on the first page of the Manifest.

Item 25: Transporter ____ Company Name

If additional transporters are used to transport the waste described on this Manifest, enter the company name of each additional transporter in the order in which they will transport the waste. Enter after the word "Transporter" the numerical order of the transporter. For example, Transporter 3 Company Name. Also, enter the U.S. EPA twelve-digit identification number of the transporter described in Item 25.

Item 26: Transporter ____ Company Name

If additional transporters are used to transport the waste described on this Manifest, enter the company name of each additional transporter in the order in which they will transport the waste. Enter after the word "Transporter" the numerical order of the transporter. For example, Transporter 4 Company Name. Also, enter the U.S. EPA twelve-digit identification number of the transporter described in Item 25.

Item 27: U.S. DOT Shipping Description/Waste Description

Item 27a - If the wastes identified in 27b consist of hazardous and nonhazardous materials, then identify the hazardous materials by entering an "X" in the Item next to the corresponding hazardous material identified in Item 9b. If the material is classified as a hazardous substance, "RQ" may be used in pace of an "X".

Item 27 b - For each row enter a sequential number under Item 27b that corresponds to the order of waste codes from one continuation sheet to the next to reflect the total number of wastes being shipped. For example, the first line item from the first continuation sheet would be identified as "Line 27b5". The first line item from the second continuation sheet would be identified as "Line 27b15". Items 1-4 were identified on the first Manifest (EPA Form 8700-22).

Enter the U.S. DOT Proper Shipping Name, Hazard Class or Division, Identification Number (UN/NA) and Packing Group (if any) for each waste identified in 49 CFR 172. Include technical name(s) and reportable quantity references, if applicable.

Item 28: Containers Number & Type

Refer to the instructions for Item 10 of the manifest for information to be entered.

Item 29: Total Quantity

Refer to the instructions for Item 11 of the manifest for information to be entered.

Item 30: Units of Measure

Refer to the instructions for Item 12 of the manifest for information to be entered.

Item 31: Waste Codes

Refer to the instructions for Item 13 of the manifest for information to be entered.

Item 32: Special Handling Instructions & Additional Information

Refer to the instructions for Item 13 of the manifest for information to be entered.

Instructions for Transporters

Item 33: Transporter ____ Acknowledgement of Receipt

Enter the same number of the Transporter as identified in Item 25. Enter also the name of the person accepting the waste on behalf of the Transporter identified in Item 25. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Item 34: Transporter ____ Acknowledgement of Receipt

Enter the same number of the Transporter as identified in Item 26. Enter also the name of the person accepting the waste on behalf of the Transporter identified in Item 26. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Instructions for Owners & Operators of Treatment, Storage & Disposal Facilities

Item 35: Discrepancy Indication Space

Refer to Item 18. This space may be used to more fully describe information on discrepancies identified in Item 18a of the manifest form.

Item 36: Hazardous Waste Report Management Method

For each field here, enter the sequential number that corresponds to the waste materials described under Item 27 (such as 5 for the first line of the first continuation sheet), and enter the appropriate process code that describes how the materials will be processed when received.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

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
Jane Doe	XXXXXX	8	3	08
Transporter 2 Printed/Typed Name	**Signature**	**Month**	**Day**	**Year**
Bill Smith		8	3	08

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

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

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

32. Special Handling Instructions and Additional Information

GENERATOR

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

TRANSPORTER

35. Discrepancy

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

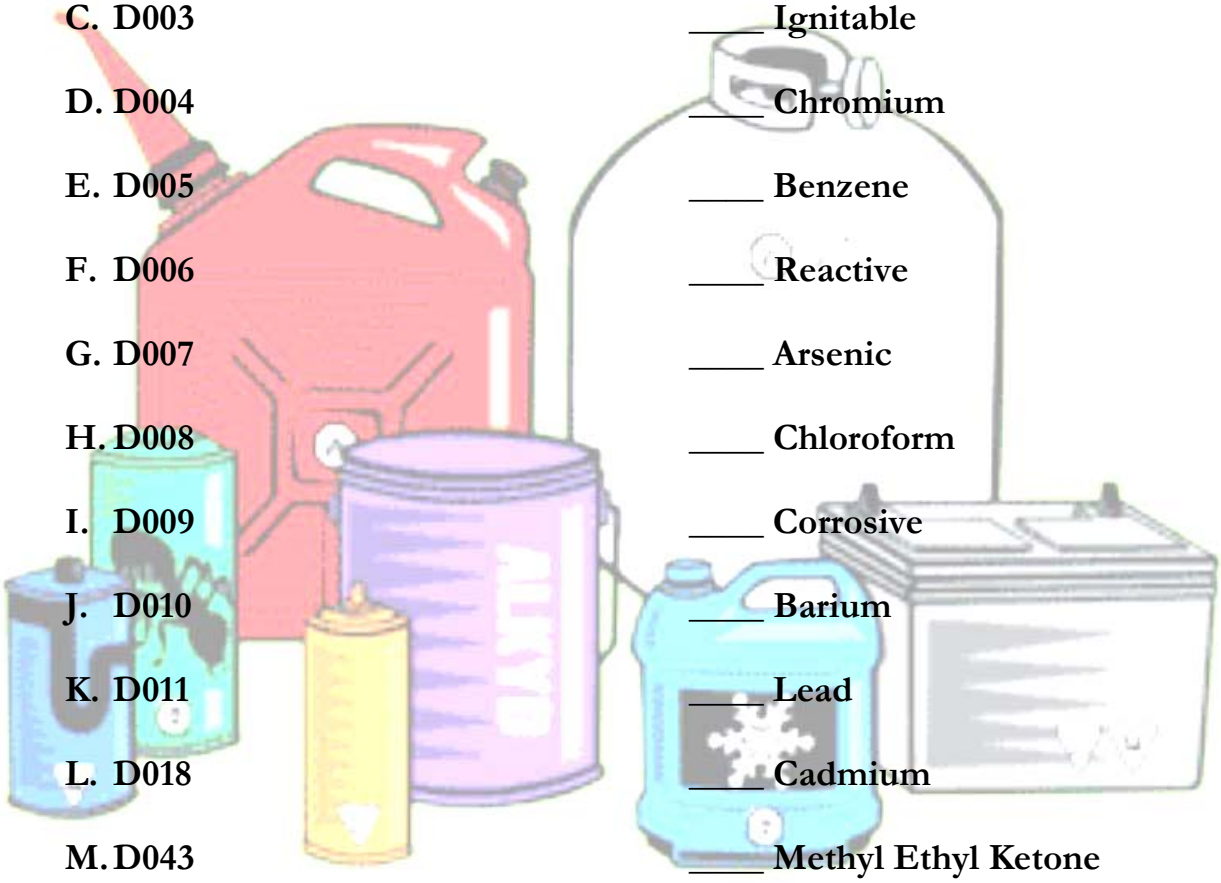
DESIGNATED FACILITY

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Hazardous Waste Determination
Student Workbook Activity # 1

Directions: Match the characteristic waste code listed in column 1 with the appropriate description listed in column 2.

Column 1	Column 2
A. D001	**_____ Selenium**
B. D002	**_____ Vinyl Chloride**
C. D003	**_____ Ignitable**
D. D004	**_____ Chromium**
E. D005	**_____ Benzene**
F. D006	**_____ Reactive**
G. D007	**_____ Arsenic**
H. D008	**_____ Chloroform**
I. D009	**_____ Corrosive**
J. D010	**_____ Barium**
K. D011	**_____ Lead**
L. D018	**_____ Cadmium**
M. D043	**_____ Methyl Ethyl Ketone**
N. D022	**_____ Mercury**
O. D035	**_____ Silver**



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: _____

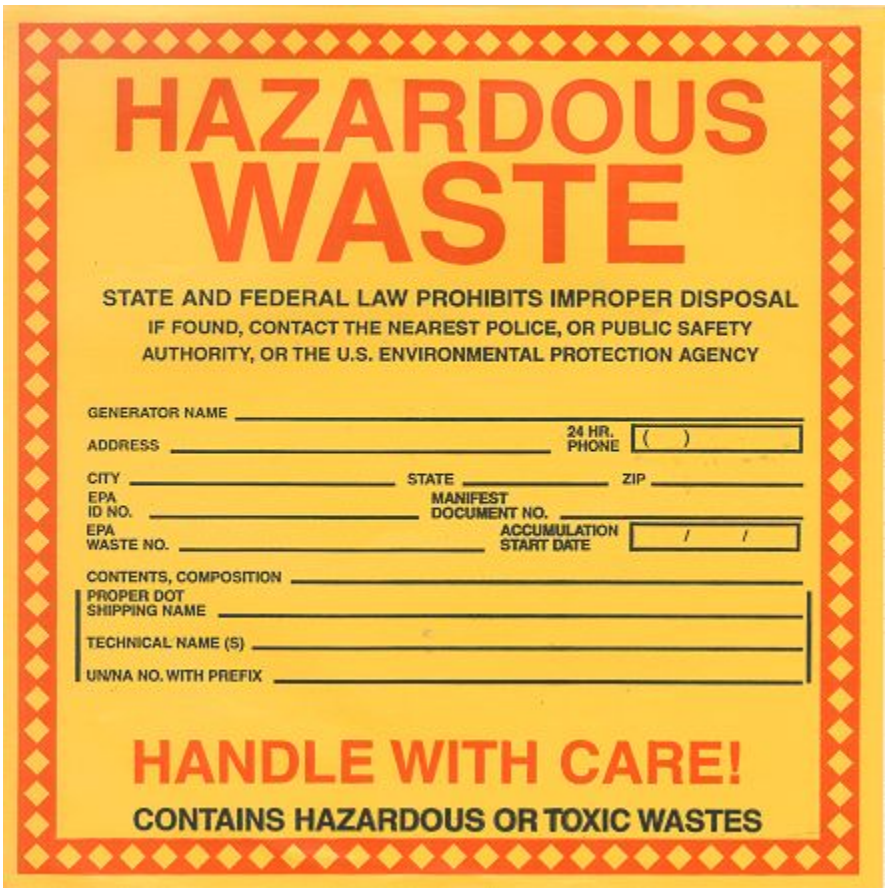
Generator 3

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: _____

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.



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!

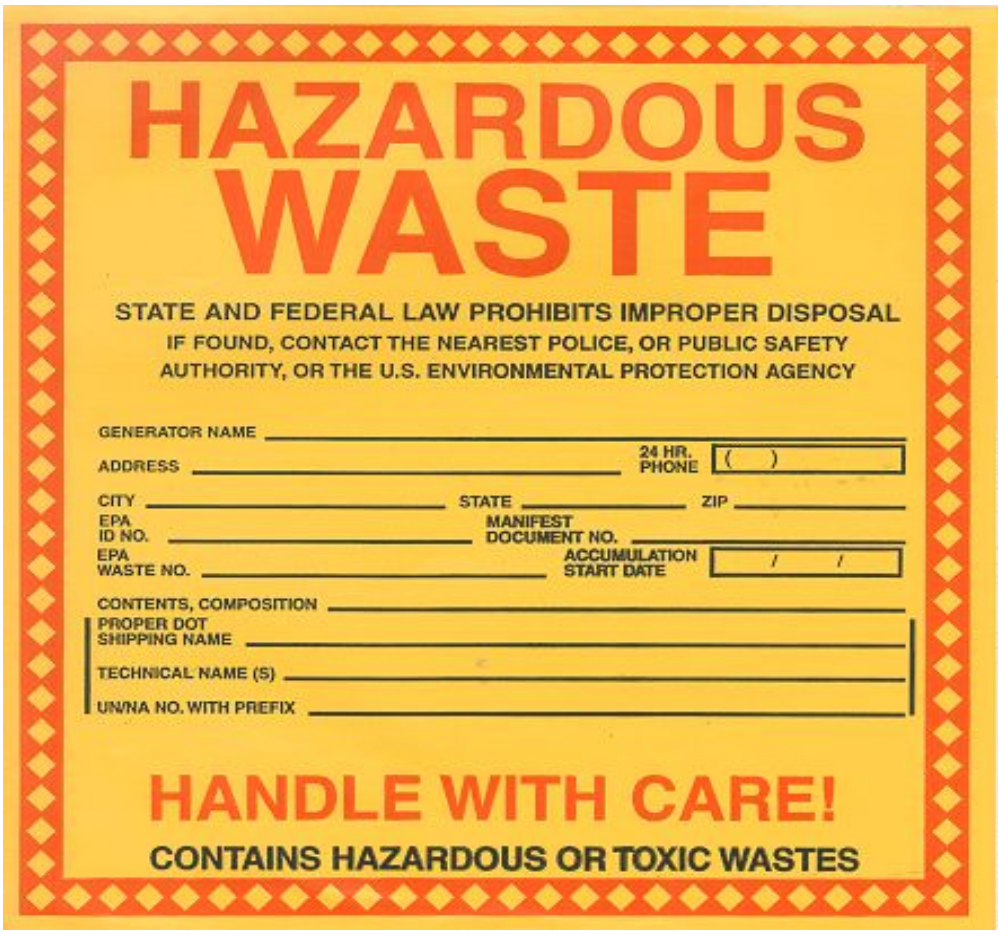
CONTAINS HAZARDOUS OR TOXIC WASTES

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

- Sulfuric Acid
- Iron
- Water

Pre-Transport Functions
Student Workbook Activity # 7

Directions: Use the information provided to complete the Hazardous Waste Marking provided below for a container of waste which is being shipped off site today. Take into consideration that the waste was generated one week ago.



Generator Information
Mr. Smith's Chemical Co., Inc. 700 Waste Way Manchester, CT 06040 EPA ID#: CTD000100010
Material Information
DOT Shipping Description: UN1993, RQ, Waste, Flammable Liquids, n.o.s., (Acetone, Xylene), 3, II (D001)

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.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CTD000000001
2. Page 1 of: 1
3. Emergency Response Phone: 860-000-0000
4. Manifest Tracking Number:

GENERATOR

5. Generator's Name and Mailing Address:
121 Jane Lane
Anytown, CT 06000
Generator's Phone:

Generator's Site Address (if different than mailing address):

6. Transporter 1 Company Name: Smith Trucking Co.
U.S. EPA ID Number: CTD020000000

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

8. Designated Facility Name and Site Address:
Smith's Waste Services
1 Waste Road, Anytown, CT 06000
Facility's Phone:
U.S. EPA ID Number:

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
X	1 RQ, UN2735, Liquid, Corrosive, N.O.S., 8, PGII (D008, D002)	1	DF	500		D008 D002
X	2 RQ, Waste Corrosive Liquid, Basic, Inorganic, N.O.S., 9, PGIII (F002)	2	DF	1,000	P	D002
X	3 RQ, US3265, Waste Corrosive Liquid, Acidic, Organic, N.O.S., 8, PGII (citric acid) (D002)	3	DF	1,500	P	
	4					

14. Special Handling Instructions and Additional Information:
9a.1 1x55 gallon, ERG #153
9a.2 2x55 gallon, ERG #154
9a.3 3x55 gallon, ERG #153

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:

INTL

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: Jane Doe Signature: XXXXXX Month: 8 Day: 3 Year: 08

Transporter 2 Printed/Typed Name: Bill Smith Signature: Month: 8 Day: 3 Year: 08

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:

VOID

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

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

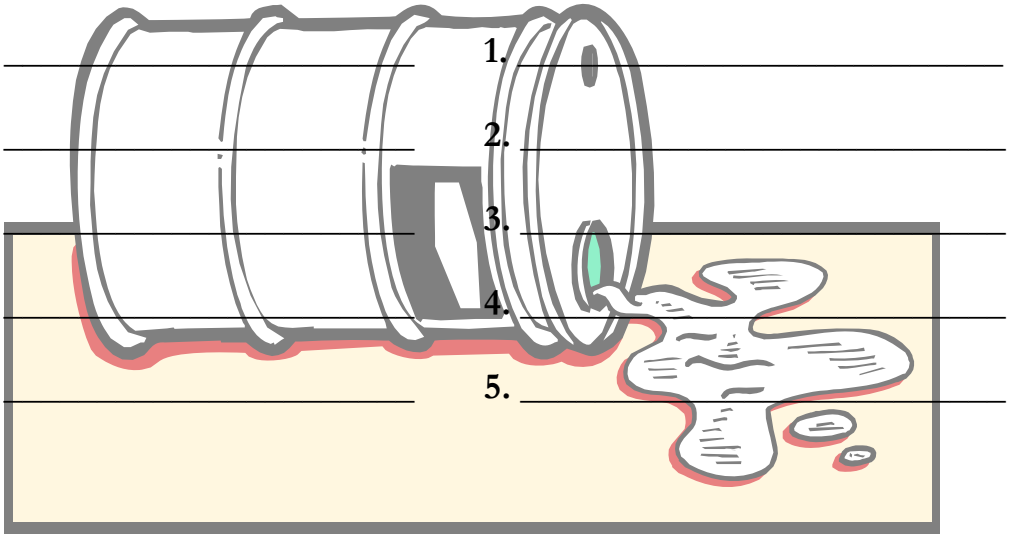
Emergency Preparedness and Planning
Student Workbook Activity # 9

Directions: Read through the spill scenario below and fill in the blanks with facility/company specific information. Once you have read through the scenario complete Column 1 – Emergency Procedures with the first 5 steps that should be taken to respond to the scenario. Then complete Column 2 – Emergency Prevention with a list of tasks that should be taken to prevent this issue from occurring again.

A 55-gallon drum of _____ waste in one of your Satellite Accumulation areas is full. This drum needs to be moved from the Satellite Accumulation area to the 180-day Main Accumulation Area. To complete this task, the employee responsible for generating this waste, removes the filling funnel and replaces the larger application bung. Unfortunately, the employee does not have access to a bung wrench and only hand tightens the bung. This employee then adds the accumulation start date to the Hazardous Waste Marking and asks one of the facility's trained fork lift operators to move the drum to the Main Accumulation Area.

The fork lift operator lines up the barrel grabber with the outside edges of the drum, inches forward, and snuggly tightens the barrel grabber to the 55-gallon drum. As soon as the operator attempts to lift the 55-gallon drum, the larger application bung pops out of place, _____ waste ejects from the drum, and the bung falls to the floor.

Column 1 – Emergency Procedures	Column 2 – Emergency Prevention
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____



Inspections and Maintenance
Student Workbook Activity # 10

Directions: Identify and discuss the specific issues with each of the pictures/diagrams below. Use the Small Quantity Generator (SQG) Container Storage Area Inspection form on the next page as a reference to assist with this activity.

Emergency Telephone in a Container Storage Area

Waste Container in a Satellite Accumulation Area

Waste Containers in a Container Storage Area

Instructions: Please us 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
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**

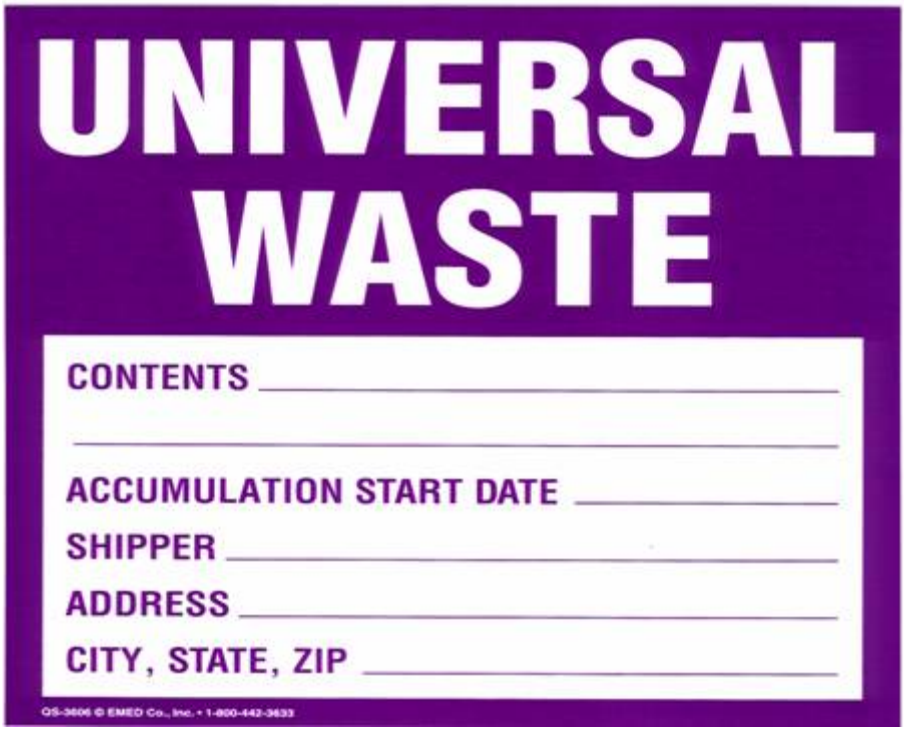
_____ **LCD Projector**

_____ **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:

Closure Requirements
Student Workbook Activity # 14

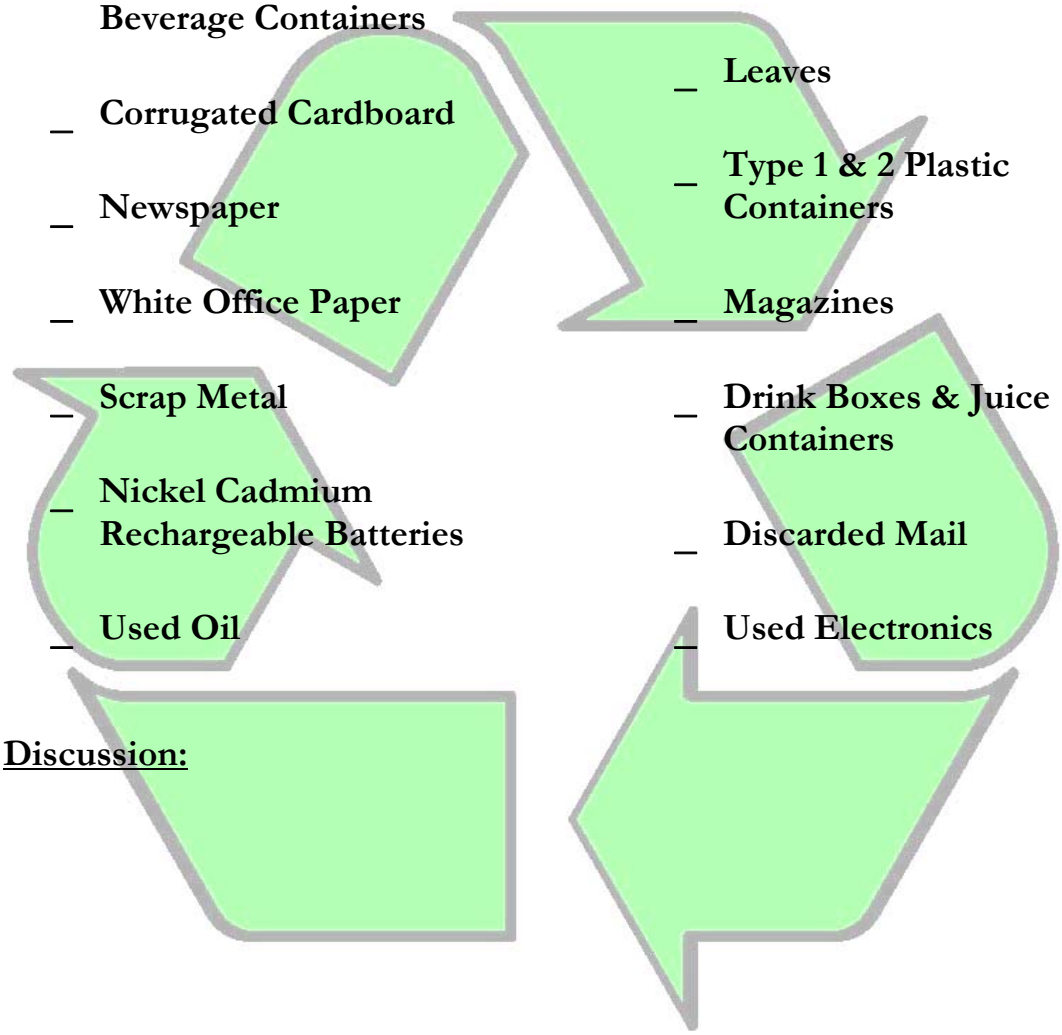
Directions: The table below provides a list of waste which was stored in a former hazardous waste storage area. The first column of the table provides the name of the material as well as a brief description as to how the chemical was used at the facility. The second column provides the corresponding waste code(s) that were applied to the specific waste stream. The third column of the table asks you to place an "X" in the space provided if you feel that the specific chemical meets the definition of a Constituent of Concerns (COC). Identify the materials on the table which meet the definition of a COC then provide comment in the discussion section (below the table) as to how you would test for its presence within the accumulation area.

Waste Stream & Description of Use	Applicable Waste Codes	COC
Flammable Solvents – 55-gallon drum which was used to accumulate spent non-halogenated solvents used throughout the facility. The specific solvents used include the following: Toluene, Isopropyl Alcohol, and Methanol.	**D001, F003, F005**	
Used Oil – 55-gallon drum which was used to accumulate used petroleum based lubricating oil from various machines throughout the facility.	**CR02**	
Spent Chromic Acid – 30-gallon drum which was used to accumulate spent chromic acid used at the facility to etch various products.	**D002, D007**	
Residual Paint Related Waste – 55-gallon drum which was used to accumulate various latex based product containers including paint, epoxies, and surface coating materials throughout the facility. The containers placed in the drum still contained free liquid and/or solid liquid blends.	**CR04**	

Discussion:

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:

FUSS & O'NEILL

Student Activity Workbook Answers

Workbook Activity No.

1. Column 2 – J, M, A, G, L, C, D, N, B, E, H, F, O, I, K

2. (1) F002, F003, F005
   (2) F001, F003, F005

3. CESQG, LQG, LQG

4. The "contents, composition" should read – "Flammable Liquids (Acetone, Xylene, IPA)"

5. Write in today's date and the "contents, composition" should read – "Flammable Liquids (Acetone, Xylene, Isopropyl Alcohol)"

6. Write in yesterday's date and the "contents, composition" should read – "Corrosive Liquids (Sulfuric Acid Solution)"

7.
   - The generator information should be added in the appropriate sections on the label
   - A 24-hour phone should be added.
   - The accumulation start date (last week's date) should already be on the label
   - Material information should be added in the appropriate sections on the label
   - Contents, composition should be as indicated on the DOT shipping name
   - EPA waste number should be added per DOT label

8. Missing information – manifest tracking number, designated facility EPA ID number, 9b1 unit weight/volume, 9b2 UN number, 9b3 waste codes, and transporter signature.

9. Group activity – answers depend on your facility.

10. 1st picture – no emergency information
    2nd picture – not in control of the operator
    - container is not closed
    - label not visible

    3rd picture – poor labeling
    - no secondary containment
    - cracks and gaps on the floor
    - not an impervious surface
    - poor container condition
    - D003 waste not stored in drum

11. Check – 4-Foot Fluorescent Lamps, Lead Acid Car Battery, Mercury Thermostat, Nickel Cadmium Rechargeable Battery, Computer Monitor, Compact Fluorescent Bulb, Lithium Battery (conservative), LCD Projector, Computer Terminal, Alkaline Battery (conservative)

12. "Contents" should say "Universal Waste Lamps" and "Accumulation Start Date" should be today's date.

13. (1) No – The oil was mixed with waste gasoline which would be a hazardous waste. According to the mixture rule, this waste oil is hazardous. Segregate waste streams to prevent the mixing of hazardous waste.
(2) Yes

14. All four should be marked as COCs. The generator should first review the MSDSs and waste profiles associated with each product. Then, determine what analytical method, if any, would apply using the help of a contract laboratory.

15. Group activity – answers dependent on your facility.