



SEP
1482

Hazardous Waste Storage, Handling and Disposal Requirements in Rhode Island

Presented by:

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Introduction

- First Hazardous Waste Law entitled *Resource Conservation and Recovery Act* (RCRA) was enacted by the U.S. Congress in 1976
- RCRA was an amendment to the *Solid Waste Disposal Act* of 1965
- The State of Rhode Island (RI) enacted the *Hazardous Waste Management Act* in 1978
- In 1984 RI adopted the Rules and Regulations for Hazardous Waste Management
- In 1986 the USEPA developed and adopted Hazardous Waste Regulations found in Title 40 of the Code of Federal Regulations in Parts 260 through 280 (40 CFR 260)
- On January 31, 1986 EPA granted authorization to RI to administer certain sections of the RCRA within the State on behalf of the Federal Government.
- Since that time both the USEPA and the State of RI have revised their hazardous waste regulations several times.

Information Resources

Most of the material presented today comes from the following sources:

- EPA RCRA Orientation Manual available on the internet at:
www.epa.gov/epaoswer/general/orientat
- RI Rules and Regulations Hazardous Waste Management on the internet at:
www.state.ri.us/DEM/pubs/regs/REGS/waste/HWRegs02.pdf

What is Hazardous Waste and Why Regulate It?

State Definition: Hazardous waste shall mean any waste or combination of wastes of a solid, liquid, contained gas or semi-solid form, which, because of its quantity, concentration, or physical or chemical characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or pose a substantial present or potential hazard to human health or the environment.

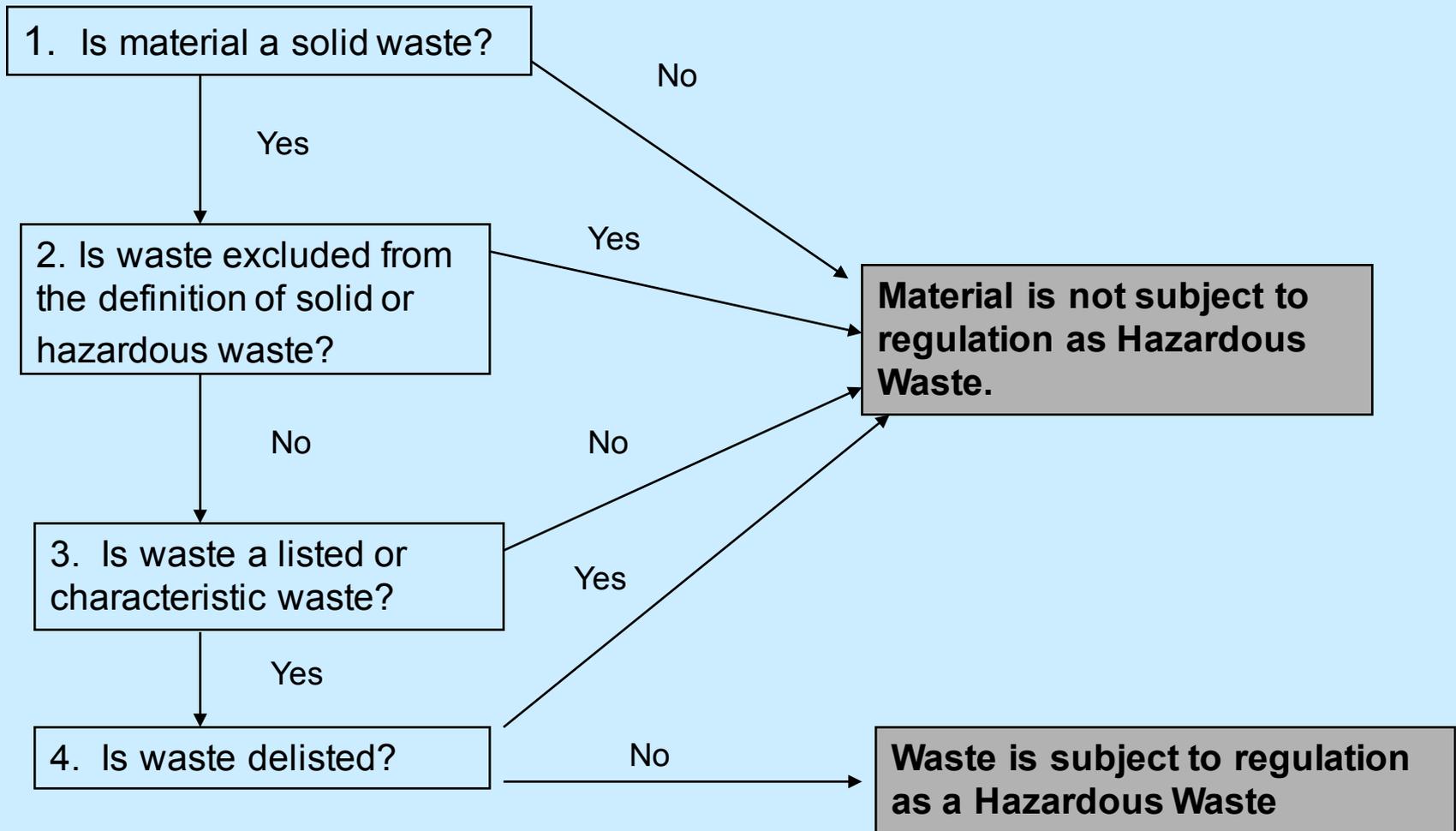
Federal Definition: Hazardous waste mean a hazardous waste as defined in 40 CFR 261.3.

Common English: Hazardous waste is a waste with chemical properties that make it dangerous or capable of having a harmful effect on human health or the environment.

Hazardous Waste Identification

- First and most important step is to evaluate the waste(s) generated by the company's processes and determine the regulatory status (Hazardous Waste, Solid Waste) of the company's waste(s)
- This process is typically referred to as waste characterization or determination.
- The process is comprised of 4 main steps or questions.

Hazardous Waste Identification Process

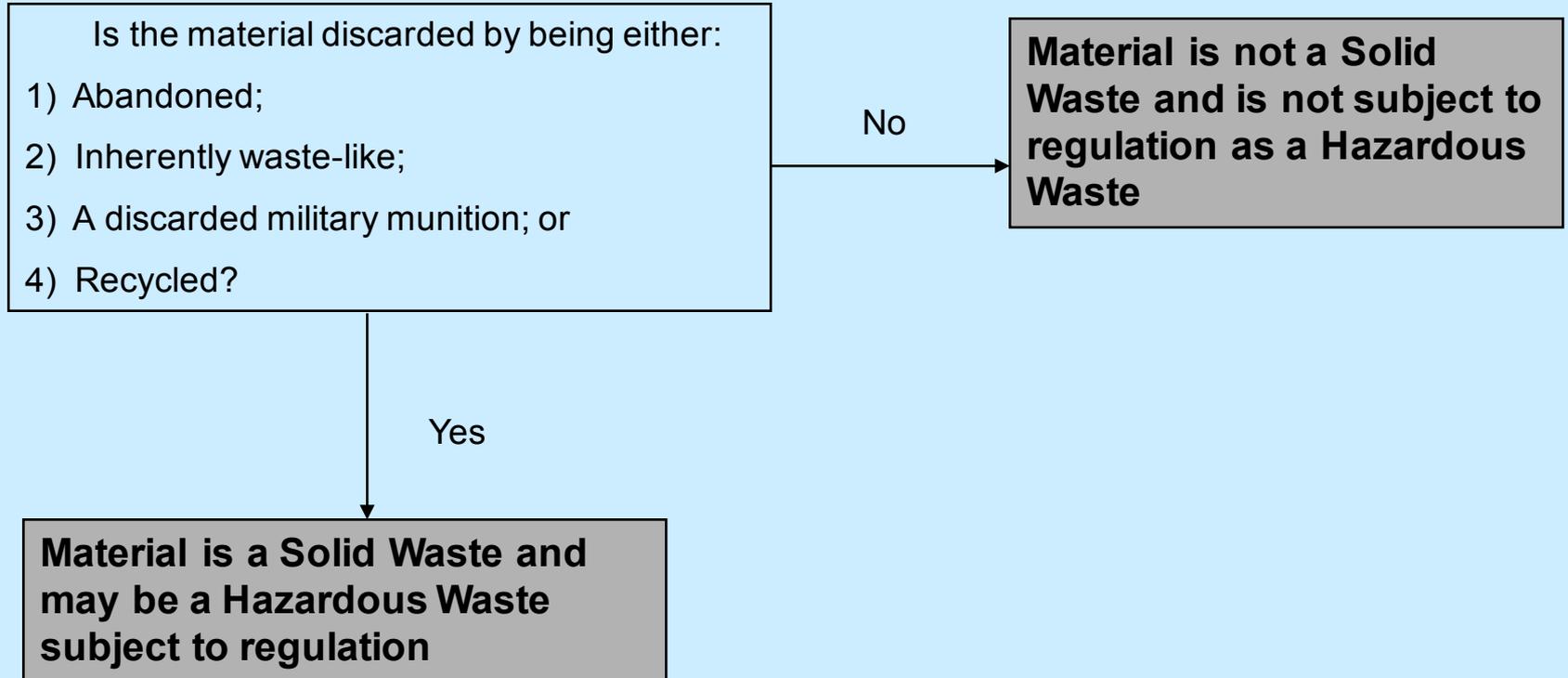


*Chart taken from USEPA RCRA Orientation Manual

Is the Material a Solid Waste?

- “Solid Waste” in the Federal regulations, or “Waste” in State regulations, is defined as any discarded material that is not excluded from regulation. It is further defined as any material that as a result of processing or storage can no longer be used for its intended purpose without first being reclaimed.
- The term “solid waste” refers to a liquid, solid or contained gaseous material.

Is the Material a Solid Waste?



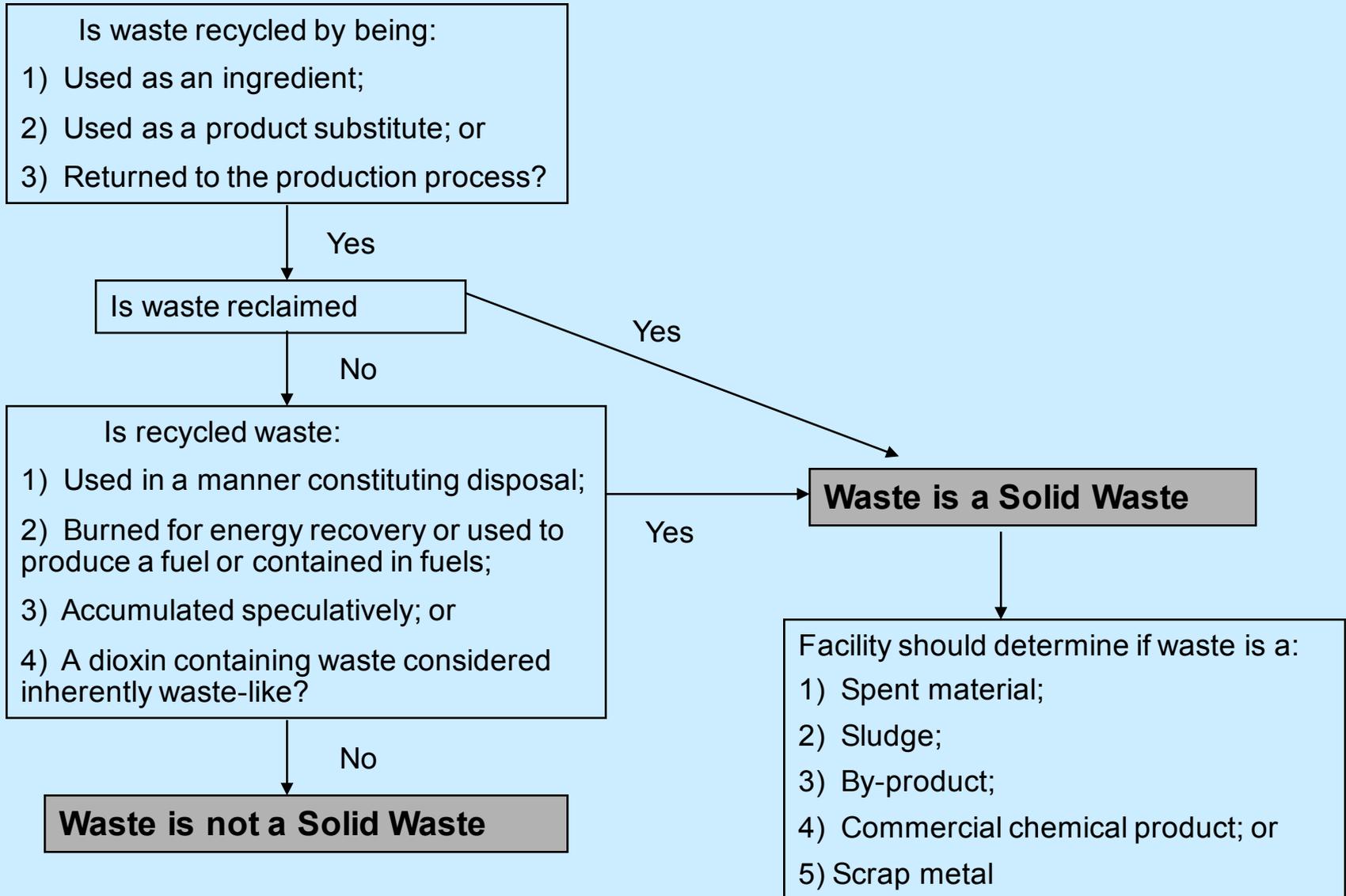
Regulated Materials

- When recycled, some materials are not solid wastes and so are not regulated as hazardous waste; while other materials are considered solid and hazardous wastes but are subject to less stringent requirements.
- There are three ways recycled materials can be handled or used that are exempt from regulation
 - Wastes used as an ingredient
 - wastes used as a product substitute
 - wastes returned to the production process

Recycled Materials That Are Not Regulated As Solid Waste

- Wastes used as an ingredient include materials that are directly used as an ingredient in a production process without first being reclaimed.
 - (i.e.) Spent ferric chloride etching solution used for producing electric circuit boards can be used for processing metal products that have less stringent specifications like jewelry or ornamental products
- Wastes used as a product substitute include materials that are used as an effective substitute for a commercial product without being processed or reclaimed
 - (i.e.) Using spent acid solutions for adjusting pH of industrial waste water prior to discharging to a POTW
- Waste returned to the production process including materials that can be returned to the production process without treatment or reclamation
 - (i.e.) Foundry sand that is used in the production of metallic tools or components frequently falls out of the tumbling/vibing vats and can be returned to the process without processing

Are All Recycled Wastes Hazardous Wastes?



Recycled Materials That Are Regulated As Solid Waste

- Waste used in a manner constituting disposal which involves placing wastes directly onto the land
- Waste burned for energy recovery involving a waste that was not originally designed or intended to be burned (not a fuel)
- Waste that is accumulated speculatively, which occurs when a generator stores wastes onsite and intends to recycle the waste but stores it for too long. The regulation specifies that the generator must recycle at least 75% of the wastes it generates within one calendar year
- Dioxin containing wastes are not exempt if recycled because the material poses significant threats to human health and environment

Secondary Materials

(Wastes which cannot be directly used or reused and so must be reclaimed to produce a useable product)

- Secondary materials are grouped into five categories: spent materials, sludges, by-products, commercial chemical products and scrap metal
- Of these, there are three types that may be generated by the marina and boat servicing industry.
- Spent materials are materials that have been used and can no longer serve the purpose for which they were produced without processing. An example of a spent material would be a spent solvent like acetone that can be reclaimed by using a still.
- Commercial chemical products are unused or off-specification chemicals that have exceeded the “shelf life” assigned to them by the product’s manufacturer. If these materials are used in a manner constituting disposal they are regulated as a solid waste
- Scrap metal is worn or extra pieces of metal parts are regulated as a solid waste unless they are “processed” by the generator prior to shipping off-site for reclamation.

Is the Waste Excluded?

- Not all materials that are designated as solid waste are regulated as hazardous wastes.
- Certain types of solid wastes are either excluded or exempt from regulation.
- There are five types or categories of exclusions
 - exclusions from the definition of solid waste
 - exclusion from the definition of hazardous waste
 - exclusions for waste generated in raw material product storage or manufacturing units
 - exclusions for laboratory samples
 - exclusions for dredge materials that are regulated under the Clean Water Act or the State's dredging regulations

Solid Waste Exclusions

- There are 19 different exclusions that are based on waste type and the type of industry that generates the waste
- Of these there are five that may be related to the marina and boat servicing industry.
 - Fuel to Fuel exclusion covering wastes containing unused fuels that are ultimately burned for energy recovery
 - Industrial waste water discharged to a POTW
 - closed loop recycling which involves the reclamation of a spent material in a closed system that uses only tank storage and is closed to the air
 - processed scrap metal which was described previously
 - Use/Re-use which requires a spent material to be used as a product substitute w/o first being reclaimed or processed

Hazardous Waste Exclusions

- There are 17 exemptions from hazardous waste regulations/definition of which four are likely to be applicable to the marina and boat servicing industry.
 - Household hazardous waste is exempt **until** it is received by a commercial operation at which time it becomes fully regulation.
 - Treated wood that was preserved using arsenic is exempt from regulation for “end users” and not manufacturers.
 - Waste samples sent to a lab for analysis
 - Dredge materials that are subject to State and Federal permitting requirements are not subject to regulation as hazardous waste.

What Makes a Waste a Hazardous Waste?

- Listed wastes are waste materials that have been designated as hazardous waste regardless of the amount or concentration of the hazardous component in the waste.
- There are four waste lists contained in the Federal/State regulations F, K, P and U.
 - F list designates hazardous wastes from specific manufacturing and industrial processes. The first group of the F list (F001 to F005) designate certain spent solvents and wastes derived from them as hazardous waste.
 - K list is for three specific industry sectors that do not include marinas or boat servicing industries.
 - P and U lists contain certain unused chemicals that are regulated as hazardous waste when being discarded. While some of the chemicals found in the P and U lists may be used for boat servicing or repair they may not be listed because the listed chemical must be 100% of the product material. (Typically these compounds would be only part of the overall mixture of chemicals in the product.)

Characteristics of Hazardous Wastes

- Characteristic wastes are wastes that exhibit measurable properties which when present in a waste can cause death or illness in humans or lead to ecological damage
- Four characteristics for hazardous waste are flammability, corrosivity, reactivity and toxicity
 - A flammable hazardous waste is a waste that has a flash point of less than 140°F
 - A corrosive hazardous waste is a waste that has a pH of less than 2 or greater than 12.5.
 - A reactive hazardous waste is a waste that can readily explode, undergo violent reactions, or release toxic gases or fumes.
 - A toxic hazardous waste is a waste that contains one of 43 compounds at a certain concentration. For example, waste containing >5ppm of lead would be a hazardous waste.

Other Ways Waste Can Be Regulated

- Mixture Rule

- the mixture rule states that any mixture of a listed waste and solid waste is regulated as hazardous waste unless the waste as originally listed for the characteristic of flammability, reactivity or corrosivity and the resultant mixture no longer exhibits the characteristic

- mixture of characteristic waste and solid waste will only be regulated if the resultant mixture retains the hazard characteristic.

- Derived from Rule - residue/wastes generated by the treatment or storage of hazardous waste are themselves hazardous waste if the original wastes were listed hazardous wastes or the residues retain the characteristic(s) of the original hazardous wastes.

Typical Hazardous Wastes Generated at Marinas & Boat Servicing Facilities

- There are several materials that may be used at a Marina or Boat yard which will result in the generation of regulated hazardous wastes
 - Used engine oils, water, filters and sorbents (rags) containing used oil
 - Waste fuels containing water, sorbents and used filters containing fuels
 - Waste Paints and Paint Thinners (Acetone & Xylene)
 - Spent Lead Acid batteries (exempt when sent for recycling)
 - Sand blast grit (black beauty) that is contaminated with regulated metals
 - Fiberglass resins and epoxies that are in liquid form
 - Spent acids used for metal cleaning or preparation

So You're A Generator of Hazardous Waste?

- There are three types of generators in Rhode Island – LQG, SQG & CESQG.
- Large Quantity Generators (LQGs) produce greater than 2200 lbs of hazardous waste in a single calendar month.
- Small Quantity Generators (SQGs) generators produce less than 2200 lbs of hazardous waste per any calendar month.
- Conditionally Exempt Small Quantity Generators (CESQG) produce less than 220 pounds of HW per calendar month

Notification of Regulated Activity

- Generators must notify RI DEM and obtain an EPA identification number for the regulated activity. See handout of the EPA ID number application (EPA Form 8700-12).
- EPA identification number is used to ship hazardous waste on a manifest, and is specific to the site of the waste generation activity.

Hazardous Waste Storage Accumulation

- There are two ways a generator can store hazardous waste onsite
 - Satellite Accumulation and less than 90/180/365 Day Accumulation

Satellite Accumulation

- A generator may store up to 55 gallons of a hazardous waste near or at the location of the point of generation and under the control of the operator.
 - No storage time limit
 - Containers must be labeled with the words “Hazardous Waste” and the chemical or common name of the waste
 - Containers must be kept closed at all times except when adding/removing waste
 - Containers must be kept in good condition free of corrosion, rust or other sign of deterioration
 - Generators must store containers of incompatible wastes in an area separated by a physical barrier to prevent mixing of the wastes





SATELLITE ACCUMULATION SITE

FUEL OIL

3



ORGANIC
SOLVENT
WASTE

8 21 '02

Less Than 90-day Accumulation Storage – LQGs Container Storage

- LQGs may store hazardous waste onsite for less than 90 days from the day the waste first begins to accumulate provided they comply with several requirements.
- LQGs must provide a secondary containment device for all 90-day containers holding liquid hazardous waste.
- Containers must be labeled with the words “hazardous waste”, the chemical or common name of the waste, the Generator’s name address & EPA ID Number and the accumulation start date.
- The storage area must have sufficient aisle space to allow for movement of emergence response equipment and personnel.
- Containers must be kept in good condition and inspected on a weekly basis for signs of corrosion. Generators must maintain a written log of these inspections for a period of at least 3 years.
- Containers must be kept closed except when adding or removing waste.
- Containers holding flammable hazardous waste must be located at least 50’ from the facility’s property line.

Less Than 90-day Accumulation Storage (cont.)

- Containers must be handled and stored in a manner that prevents spills and releases.
- LQGs must ship hazardous waste offsite within 90 days of date waste first begins to accumulate. (Unless storing satellite)
- LQGs must store and maintain spill control equipment that is of adequate volume to handle amount of hazardous waste stored and that is designed to handle type of waste in storage.

Less Than 180/365 day Accumulation Storage – SQG & CESQG Container Storage

- Generators may store hazardous waste onsite for less than 180/365 days from the day the waste first begins to accumulate provided they comply with several requirements.
- Generators must provide a secondary containment device for all 90-day containers holding liquid hazardous waste.
- Containers must be labeled with the words hazardous waste, the USDOT shipping name of the waste, the EPA or RIDEM waste code and the accumulation start date.
- The storage area must have sufficient aisle space to allow for movement of emergence response equipment and personnel.
- Containers must be kept in good condition and inspected on a weekly basis for signs of corrosion. Generators must maintain a written log of these inspections for a period of at least 3 years.
- Containers must be kept closed except when adding or removing waste.
- Containers holding flammable hazardous waste must be located at least 50' from the facility's property line.

Less Than 180/365 day Accumulation Storage (cont.)

- Containers must be handled and stored in a manner that prevents spills and releases.
- SQGs must ship hazardous waste offsite within 180 days of date waste first begins to accumulate. (Unless storing in satellite accumulation areas)
- CESQGs must ship hazardous waste offsite within 365 days of the date the waste first begins to accumulate. (Unless storing in satellite accumulation areas)
- Must store and maintain spill control equipment that is of adequate volume to handle amount of hazardous waste stored and that is designed to handle type of waste in storage.





HAZARDOUS — WASTE —

ACCUMULATION
START DATE

07-17-03

CONTENTS

USED OIL

HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES



HAZARDOUS WASTE

STATE AND FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCE CONTROL

GENERATOR INFORMATION:

NAME TECHNIC, INC., EPD
ADDRESS 300 PARK EAST DRIVE PHONE _____
CITY WOONSOCKET
EPA ID NO. RID987489473 STATE RI ZIP 02895
EPA WASTE NO. D001 CA WASTE NO. _____ MANIFEST DOCUMENT NO. _____
ACCUMULATION START DATE 6/3/04

CONTENTS COMPOSITION:

PHYSICAL STATE: SOLID LIQUID | HAZARDOUS PROPERTIES: FLAMMABLE TOXIC
 CORROSIVE REACTIVE OTHER

WASTE FLAMMABLE LIQUID, N.O.S.
(ETHANOL, METHANOL)
1993

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

Leo Safety Supply Inc. - Janesville WI 53547-1368









Hazardous Waste Tank Storage Requirements

- Tank must be completely labeled with information as described under 90 day container requirements
- Marked with accumulation start date as soon as waste is placed into the tank
- There are two sets of requirements - one for LQGs and another for SQGs
- **CESQG are not permitted to store HW in tanks.**

LQG Tank Requirements

- LQG needs a Professional Engineer assessment stating that tank is in good condition and suitable for intended use.
- LQG only must provide a secondary containment device for tank having a volume equivalent to 100%
- Hazardous waste systems must be inspected on a daily basis by generator for signs of corrosion and for deterioration and a written log must be maintained onsite for a period of three years
- Hazardous waste tanks must be operated in a manner that prevents spills or releases.
- Uncovered or open tanks must have sufficient freeboard space or spill control to prevent a release.
- Incompatible wastes may not be stored in the same tank, unless activity is exempted from regulation as discussed earlier.
- Tank or tank liner must be compatible with hazardous waste being stored.
- If the tank system is continuous feed the tank must have a device designed to automatically stop inflow when tank is at 90% capacity.



12GA

Continental Laboratory Inc.
10000 10th Avenue S.E.
Burien, WA 98148
Phone: (206) 835-1111
Fax: (206) 835-1112

HAZARDOUS
WASTE
UNIDENTIFIED
CONTENTS
UNRECOGNIZED
HAZARDOUS WASTE
HANDLE WITH CARE

WARNING
DANGER
HAZARDOUS WASTE
UNIDENTIFIED
CONTENTS
UNRECOGNIZED
HAZARDOUS WASTE
HANDLE WITH CARE

SQG Tank Requirements

- Similar to LQG for labeling, dating, inspections, and incompatible waste storage.
- Not required to provide secondary containment
- Not required to have Professional Engineer assessment.



**WASTE
OIL**

[Small yellow label on the tank with illegible text]

Hazardous Waste Contingency Plan - LQGs

- LQGs storing hazardous waste in 90-day containers and/or in tanks must develop and maintain a contingency plan.
- Contingency plan must describe procedures to be followed in the case of a fire, spill or release of hazardous waste at the facility.
- Contingency plan must designate emergency coordinators for the company and provide telephone numbers for the coordinators.
- Contingency plan should list all spill and fire control equipment and locations throughout the facility.
- Contingency plan should also list telephone numbers for Federal, State and local response authorities.

Hazardous Waste Contingency Plan – SQGs & CESQGs

- SQGs and CESQGs are not required to prepare a contingency plan provided that they do the following:
 - Designate one employee to act as an emergency coordinator onsite or on call at all times
 - Post near phones in waste storage area the number for the emergency response coordinator, local fire department, RIDEM, National Response Center and the company's env contractor
 - Mark the location of all fire extinguishers, spill control equipment and fire alarms
 - Take immediate actions to clean up any spills or releases of hazardous waste or materials and all impacted media.

Hazardous Waste Management Training

- LQGs & SQGs who store hazardous waste in accumulation containers or tanks must provide hazardous waste training to all employees who handle hazardous waste.
- Training must cover not only hazardous waste “Right to Know” but must include adequate information to ensure staff operate in compliance with the hazardous waste regulations (labeling, proper storage, emergency response, etc.). Includes defining HW managed by company.
- LQGs shall review the training on an annual basis and records kept on-site for a period of three years.
- CESQGs are not required to provide hazardous waste management training to employees. **This does not remove requirement to provide training required by OSHA.**

Hazardous Waste Manifest

- A Uniform Hazardous Waste Manifest must be prepared for each shipment of hazardous waste sent off-site.
- Electronic Manifests may be used in Rhode Island, contact your transporter to discuss requirements.
- Generators must complete generator section and certify accuracy of information contained on manifest.
- Generator must keep copy of the signed manifest and provide a copy to the transporter
- Generators should receive a copy of the manifest completed (signed) by the treatment facility that receives the hazardous waste within **35 days** of shipment
- If the signed copy is not received within 35 days, Generators must contact the treatment facility and attempt to resolve the discrepancy
- Generators must complete an exception report describing the discrepancy and submit it to RIDEM

Land Disposal Restriction Forms (LDR)

- Certain hazardous wastes require special treatment before they can be disposed onto the land
- A Land Disposal Restriction Forms must be prepared for each shipment of these wastes and a copy must accompany the hazardous waste manifest
- The list of wastes subject to this requirement can be found in 40 CFR Part 268 which is available online at:

www.epa.gov/docs/epacfr40/chap-I.info

- Wastes subject to this regulation that may be generated by the Marina and Boat Servicing Industries include spent solvents (paint thinners) containing Acetone, Xylene, etc., regulated metals (lead, cadmium, chromium, etc.) and wastes found on the U and P lists
- Generators should keep a copy of all LDR forms they prepare for a period of at least 3 years

Preparedness & Prevention

- Facility must have an adequate internal communication system or alarm system
- Facility must have adequate fire control and spill control equipment
- All employees must have access to fire/spill equipment (not locked in shed across lot)
- Generator must maintain fire and spill control equipment as required to keep them in good working order

Record Keeping

- Generator must keep copies of all analytical test results, hazardous waste manifests, LDR forms, exception reports, etc. for a period of three years
- Generators must also submit to RIDEM a list of agents of the company who are authorized to sign manifests
- In the event that a generator ships hazardous waste to a foreign country he/she is required to Notify the USEPA of the export activity

