“Where’s the Waste?, and Where are you Storing It?”

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Container Management.

What is a container?

Definition of a Container:

- 40 CFR 260.10 Subpart B:

A *container* mean any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

Can you show me some examples????

Photos will be inserted here

But what "kind" of container do you have?!?

- What the Department's inspector means, is your hazardous waste container:

a) Satellite Accumulation Area?
(formerly a Satellite Accumulation Container),
OR

b) Hazardous Waste Storage Container?
(in a Central Accumulation Area)

Covering CAA requirements only today!!

A Central Accumulation Area is considered:

An area where waste accumulation container(s) are of such distance from the process generating the waste, or in such a location, that it is **NOT** routinely within the control and cognizance of the operator of the process.

Examples:

a) Location of the accumulation container in another room where intervening walls or partitions block it from the view of the process operator for significant periods of time.

b) Place the container in areas subject to other plant activities not under the control of the process operator where the risks of release or mismanagement may be greater.

c) Location of the waste storage container outside a building in which the waste is generated may be regarded as placing it beyond the routine attention of the process operator, and therefore not legitimate satellite accumulation.

When an inspector visits a hazardous waste storage area, what are we going to look for?

Well, that depends on the type of generator that you are:

+ Large Quantity Generator (LQG)
+ Small Quantity Generator (SQG)
+ Very Small Quantity Generator (VSQG)

However, ALL Generators MUST comply with 262 Subpart C

Before transporting hazardous waste or offering hazardous waste for transportation offsite, a generator must package the waste in accordance with ALL applicable USDOT regulations, on packaging, under 49 CFR parts 173, 178, and 179.

49 CFR 173 – Covers the General requirements for Shipments & Packaging of Hazardous Materials / Wastes.

49 CFR 178 – Covers the “Specifications for the Packaging” that the hazardous material/waste will be shipped in.

49 CFR 179 – Covers the “Specifications for Tank Cars”

Accumulation Time Limitations

VSQG's – NONE, as long as Hazardous Waste in storage does not exceed 999Kg, and maintain VSQG waste generation rates (<100 Kg/220 lbs/@30 gal. per mo.)

- A VSQG that accumulates >1,000Kg / 2,200 lbs. can only accumulate hazardous waste for 180-days from the day it exceeded the limit.

Accumulation Time Limitations

SQG's – must manifest/ship Hazardous Waste offsite within 180-days of being accumulated onsite (40 CFR 262.16(b))

LQG's – must manifest/ship Hazardous Waste offsite within 90-days of being accumulated onsite (40 CFR 262.17(a))

Exceptions to Accumulation Time Limitations:

- 40 CFR 262.16(c) –

If you are a SQG of hazardous waste, who must transport his waste, or offer his waste for transportation, over a distance of greater than 200 miles for off-site treatment, storage or disposal may accumulate waste on-site for 270 days or less without a permit, or without having interim status provided that compliance with the requirements of 40 CFR 262.16(b).

NOTE: The quantity of waste accumulated on-site may never exceed 6000 kilograms during time period.

Exceptions to Accumulation Time Limitations:

NOTE:

- If you are a SQG of hazardous waste, and has accumulated greater than 6000 Kg of hazardous waste onsite, or has stored hazardous waste onsite for greater than180-days, the generator is considered an operator of a storage facility and is subject to the requirements of 40 CFR parts 264 & 265 (TSDF), and permit requirements of 40 CFR part 270 (TSDF), UNLESS the generator has been granted an extension to the 180-day period.

NOTE: An extension of up to 30-days may be granted by the Department, on a case-by-case basis.

Exceptions to Accumulation Time Limitations:

NOTE:

- If you are a LQG of hazardous waste, and accumulate hazardous waste onsite for more than 90-days, the generator is considered an operator of a storage facility and is subject to the requirements of 40 CFR parts 264 & 265 (TSDF), and permit requirements of 40 CFR part 270 (TSDF), UNLESS the generator has been granted an extension to the 90-day period.

NOTE: An extension of up to 30-days may be granted by the Department, on a case-by-case basis.

Common Container Accumulation Area Requirement:

- 40 CFR 262.17(a)(5)(i)(A)-(B) Large Quantity Generator
- 40 CFR 262.16(b)(6)(i)(A)-(B) Small Quantity Generator
- While being accumulated on-site, each hazardous waste storage container…must be clearly marked, and/or labeled with the words **"Hazardous Waste"** and an indication of the hazards of the contents. (NEW as of 5/31/17)

What Inspector is looking for:

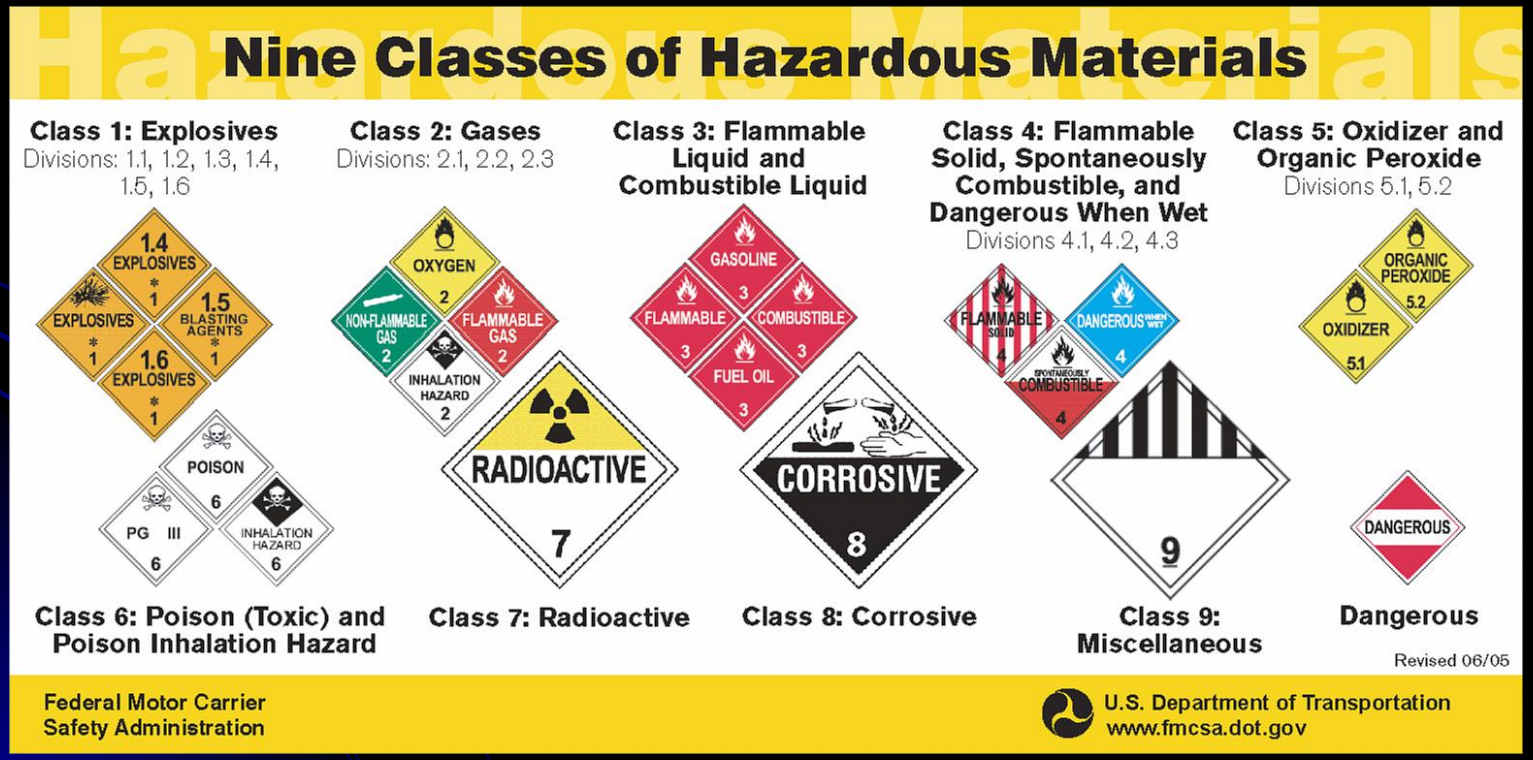
- A label, tag, etc… on the container is acceptable.
- The key is that the label or mark must indicate that the material is a hazardous waste (not a raw material or product) and indicates the hazards of the contents.

- For Very Small Quantity Generator - ENCOURAGED

How to indicate the hazards?

Several options available to generators:

USDOT Hazard Markings (most common)



How to indicate the hazards?

Hazardous Material Identification System (HMIS)

National Fire Protection Association (NFPA) “Fire Diamond”

How to indicate the hazards?

Safety
Data
Sheet
Pictograms

How to indicate the hazards?

Simply mark and/or label the container with characteristics found in the hazardous waste:

+ Ignitable
+ Corrosive
+ Reactive
+ Toxic

Encourage LARGE lettering! Can be seen from a distance!

Photos will be inserted here

Common Container Accumulation Area Requirement:

- "The date upon which each period of accumulation begins is **clearly marked and visible** for inspection on **each** container.

  (40 CFR 262.16(b)(6)(i)(C) for SQG)
  (40 CFR 262.17(a)(5)(i)(C) for LQG)

Reason:

+ SQG – has 180-day storage limit (40 CFR 262.16(b))
+ LQG – has 90-day storage limit (40 CFR 262.17(a))

Photos will be inserted here

Common Container Accumulation Area Requirement:

- A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste, consolidate waste, or when temporary venting of a container is necessary

Reason: To prevent the release of hazardous waste, and/or its vapors. Again, to prevent a spill from occurring, and protect workers from hazardous vapors, fumes, etc…

- 40 CFR 262.16(b)(2)(iii)(A) (SQG)
- 40 CFR 262.17(a)(1)(iv)(A) (LQG)

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Common Container Accumulation Area Requirements:

- A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak its contents

- 40 CFR 262.16(b)(2)(iii)(B) - SQG
- 40 CFR 262.17(a)(1)(iv)(B) - LQG

Photos will be inserted here

In addition to 40 CFR 262.16(b)(2)(iii)(B) and 40 CFR 262.17(a)(1)(iv)(B)….

If a generator's containers, holding hazardous waste are not in good condition, or if they begin to leak, the owner or operator (generator) must transfer the hazardous waste from this "bad" container to container that is in good condition; or manage the waste in some other way that complies with this requirement.

+ 40 CFR 262.16(b)(2)(i) – SQG
+ 40 CFR 262.17(a)(1)(ii) - LQG

Photos will be inserted here

Common Container Accumulation Area Requirements:

Required Aisle Space - An owner or operator (generator) must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency (Example – DEP requires 18" for single-stacked 55-gallon drums)

+ 40 CFR 262.16(b)(8)(v) – SQG

+ 40 CFR 262.255 - LQG

Photos will be inserted here

Common Container Accumulation Area Requirements:

Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.

+ 40 CFR 262.16(b)8(iv) SQG
+ 40 CFR 262.254(a)-(b) LQG

REMEMBER!!!

Hazardous Waste Central Accumulation Area (CAA) description, is:

An area where waste accumulation container(s) are of such distance from the process generating the waste, or in such a location, that is not routinely within the control and cognizance of the operator of the process.

Central Accumulation Areas are usually well removed from the active parts of a facility, and the only means of communications is through some type of communications device – phone, alarm, 2-way radio, etc…

Common Container Accumulation Area Requirements:

- The owner or operator (generator) must inspect area where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion or other factors.
- 40 CFR 262.16(b)2(iv) - SQG
- 40 CFR 262.17(a)1(v) - LQG

Things to remember about inspections:

- Container Management and weekly inspections go hand-in-hand.
- Ensures hazardous waste storage containers are being properly managed.
- Ensures any problems that are found, are/can be addressed in a prompt manner before any serious injury or property damage can occur.
- Written inspection log not required for SQG/LQG, but highly recommended to show that the required inspections are being conducted.

WEEKLY CONTAINER STORAGE AREA INSPECTION LOG

ITEM/WEEK	WEEK OF_____	WEEK OF_____	WEEK OF_____	WEEK OF_____	WEEK OF_____
Containers in good condition, not leaking?					
Containers closed when not in use?					
Containers properly marked?					
Container markings visible?					
Containers stored longer than allowed?					
Containers segregated by waste type?					
Ignitable or reactive waste stored >50' from property line?					
Adequate aisle space?					
Spill control, communication, safety, & fire equipment present?					
Name, date, and time of pers performing inspection					
Corrective a taken (Use separate sh as necessa					

03/30/2011

Commonly Overlooked Central Accumulation Area Requirements:

Storage of Incompatible Hazardous Wastes

as per 40 CFR 260.10 – an incompatible waste is a hazardous waste which is unsuitable for placement in a particular device because it may cause corrosion or decay of containment materials (i.e.. container inner liners), OR commingling with another waste or material under un-controlled conditions because the commingling might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

Storage of Incompatible Hazardous Waste

"Incompatible waste, or incompatible wastes and materials must not be placed in the same container… hazardous waste must not be placed in an unwashed container that previously held incompatible waste or material… or a storage container holding hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, must be separated from the other materials or protected from them by means of dike, berm, wall, or other device.

SQG – 40 CFR 262.16(b)(2)(v)

LQG – 40 CFR 262.17(a)(1)(vii)

NOTE: Appendix V shows examples of incompatible waste, and materials.

Appendix V
40 CFR 265

Formulae for calculation of the t-statistic and tables for t-test of significance can be found in most introductory statistics texts.

APPENDIX V TO PART 265—EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1–A	Group 1–B
Acetylene sludge	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte, acid
Caustic wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkalies	Pickling liquor and other corrosive acids
Lime wastewater	Spent acid
Lime and water	Spent mixed acid
Spent caustic	Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

Group 2–A	Group 2–B
Aluminum	Any waste in Group 1–A or 1–B
Beryllium	
Calcium	
Lithium	
Magnesium	
Potassium	
Sodium	
Zinc powder	
Other reactive metals and metal hydrides	

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3–A	Group 3–B
Alcohols	Any concentrated waste in Groups 1–A or 1–B
Water	Calcium
	Lithium
	Metal hydrides
	Potassium
	SO_2Cl_2, $SOCl_2$, PCl_3, CH_3SiCl_3
	Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4–A	Group 4–B
Alcohols	Concentrated Group 1–A or 1–B wastes
Aldehydes	Group 2–A wastes
Halogenated hydrocarbons	
Nitrated hydrocarbons	
Unsaturated hydrocarbons	
Other reactive organic compounds and solvents	

Potential consequences: Fire, explosion, or violent reaction.

Group 5–A	Group 5–B
Spent cyanide and sulfide solutions	Group 1–B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6–A	Group 6–B
Chlorates	Acetic acid and other organic acids
Chlorine	Concentrated mineral acids
Chlorites	Group 2–A wastes
Chromic acid	Group 4–A wastes

Group 6–A	Group 6–B
Chlorates	Acetic acid and other organic acids
Chlorine	Concentrated mineral acids
Chlorites	Group 2–A wastes
Chromic acid	Group 4–A wastes
Hyphochlorites	Other flammable and combustible wastes
Nitrates	
Nitric acid, fuming	
Perchlorates	
Permanganates	
Peroxides	
Other strong oxidizers	

Potential consequences: Fire, explosion, or violent reaction.

SOURCE: "Law, Regulations, and Guidelines

03/30/2011

HAZARDOUS MATERIALS LOAD AND SEGREGATION CHART

CLASS		PLACARDS	CLASS OR DIVISION	PLACARD WEIGHT	NOTES	1.1 1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3 GAS ZONE A	2.3 GAS ZONE B	3	4.1	4.2	4.3	5.1	5.2	6.1 LIQUIDS PG I ZONE A	7	8 LIQUIDS
CLASS 1	EXPLOSIVES *Add division number and compatibility group	EXPLOSIVES	1.1 1.2	ANY QUANTITY	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
	EXPLOSIVES *Add division number and compatibility group	EXPLOSIVES	1.3	ANY QUANTITY		*	*	*	*	*	X		X	X	X		X	X	X	X	X		X
	EXPLOSIVES *Add compatibility group	1.4 EXPLOSIVES	1.4	1001 Lbs.		*	*	*	*	*	0		0	0	0		0				0		0
	VERY INSENSITIVE EXPLOSIVES	1.5 BLASTING AGENTS	1.5	1001 Lbs.	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
	EXTREMELY INSENSITIVE EXPLOSIVES	1.6 EXPLOSIVES N	1.6	1001 Lbs.		*	*	*	*	*													
CLASS 2	FLAMMABLE GASES	FLAMMABLE GAS	2.1	1001 Lbs.		X	X	0	X				X	0							0	0	
	NON-TOXIC NON-FLAMMABLE GASES	OXYGEN / NON-FLAMMABLE GAS	2.2	1001 Lbs.	B	X			X														
	POISONOUS GAS ZONE A	INHALATION HAZARD	2.3	ANY QUANTITY	G	X	X	0	X		X				X	X	X	X	X	X			X
	POISONOUS GAS ZONE B	INHALATION HAZARD	2.3	ANY QUANTITY	G	X	X	0	X		0				0	0	0	0	0	0			0
CLASS 3	FLAMMABLE LIQUIDS	FLAMMABLE	3	1001 Lbs.		X	X	0	X				X	0					0		X		
CLASS 4	FLAMMABLE SOLIDS	FLAMMABLE SOLID	4.1	1001 Lbs.		X			X				X	0							X		0
	SPONTANEOUSLY COMBUSTIBLE	SPONTANEOUSLY COMBUSTIBLE	4.2	1001 Lbs.		X	X	0	X				X	0							X		X
	DANGEROUS WHEN WET MATERIALS	DANGEROUS WHEN WET	4.3	ANY QUANTITY		X	X		X				X	0							X		0
CLASS 5	OXIDIZERS	OXIDIZER	5.1	1001 Lbs.	A	X	X		X				X	0	0						X		0
	ORGANIC PEROXIDES	ORGANIC PEROXIDE	5.2	1001 Lbs.	F	X	X		X				X	0							X		0
CLASS 6	POISONOUS LIQUIDS PG I ZONE A	INHALATION HAZARD	6.1	ANY QUANTITY	E H	X	X	0	X		0				X	X	X	X	X	X			X
CLASS 7	RADIOACTIVE MATERIALS	RADIOACTIVE	7	ANY QUANTITY (yellow III label)		X			X		0												
CLASS 8	CORROSIVE LIQUIDS	CORROSIVE	8	1001 Lbs.		X	X	0	X				X	0		0	X	0	0	0	X		
CLASS 3	COMBUSTIBLE LIQUIDS	COMBUSTIBLE		IN BULK	C J																		
CLASS	OTHER THAN INHALATION	POISON / TOXIC		1001	C I																		

§177.848 (e) INSTRUCTIONS FOR USING THE SEGREGATION TABLE FOR HAZARDOUS MATERIALS ARE AS FOLLOWS:

(1) The absence of any hazard class or division or a blank space in the Table indicates that no restrictions apply.

(2) The letter "X" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation.

(3) The letter "O" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation unless separated in a manner that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. Notwithstanding the methods of separation employed, Class 8 (corrosive) liquids may not be loaded above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) materials; except that shippers may load truckload shipments of such materials together when it is known that the mixture of contents would not cause a fire or a dangerous evolution of heat or gas.

Easier Approach to Determining what Hazardous Wastes/Materials are Incompatible:

USDOT Hazardous Materials Load & Segregation Chart

Commonly Overlooked Central Accumulation Area requirements:

- 40 CFR 262.17(a)(1)(vi) – Special requirements for ignitable or reactive waste(s). (LQG)

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line unless a written approval is obtained from the authority having jurisdiction over the local fire code allowing hazardous waste accumulation to occur within this restricted area. A record of the written approval must be maintained as long as ignitable or reactive hazardous waste is accumulated in this area.

Photos will be inserted here

Commonly Overlooked Central Accumulation Area requirements:

40 CFR 262.16(b)(2)(v) – Special requirements for incompatible waste(s). (SQG)

A container accumulating hazardous waste that is incompatible with any waste or other materials accumulated or stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

Are we done yet?!?! Nope!

- USEPA Generator Improvement Rule (adopted 5/31/17) added additional Generator container management requirements!
- Here's what else is new to RCRA…

Additional LQG requirement:

As per 40 CFR 262.17(f)1-2, an LQG must notify the Department that they are receiving hazardous waste from VSQG (from same company) including description & quantity of waste received and date waste received at.

As per 40 CFR 262.17(f)3 – the LQG must mark or label hazardous waste container/unit with the date received from the VSQG.

Episodic Generation for SQG of hazardous waste:

- SQG must mark or label containers with the words “Episodic Hazardous Waste” AND indication of the hazards of the contents, as per 40 CFR 262.232(b)4(i)(A-B)
- SQG must mark or label containers with the with the episodic event start date, clearly visible for inspection on each container, as per 40 CFR 262.232(b)4(i)(C)
- Ensuring containers are in good condition, compatible with hazardous waste being accumulated within, and kept closed as per 40 CFR 262.232(b)4(iii)(A)

Episodic Generation for VSQG and SQG of hazardous waste:

- A VSQG has up to sixty (60) calendar days from the start of the episodic event to manifest and send its hazardous waste generated from episodic event to a TSDF as per 40 CFR 262.232(a)6.
- A SQG must treat hazardous waste generated from episodic event onsite or manifest and ship such hazardous waste offsite to a within sixty (60) calendar days from the start of the episodic event as per 40 CFR 262.232(b)5.

SQG Tank Requirements

- While being accumulated on-site, each hazardous waste storage tank…must be clearly marked, and/or labeled with the words **"Hazardous Waste"** and an indication of the hazards of the contents.

+ 40 CFR 262.16(b)6(ii)(A-B)

Look familiar?!?

LQG Tank Requirements

- While being accumulated on-site, each hazardous waste storage tank…must be clearly marked, and/or labeled with the words **"Hazardous Waste"** and an indication of the hazards of the contents.

+ 40 CFR 262.17(a)5(ii)(A)-(B)

Additional LQG Tank Requirements

Generator shall maintain required records showing hazardous waste is accumulated for no more than 90-days in a tank and keep records onsite and readily available for inspection.

+ 40 CFR 262.17(a)5(ii)(C)-(D)

Photos will be inserted here

Soil Piles & LSRP's…

- Determine whether you have a hazardous waste BEFORE creating a soil pile.
- If you have a hazardous waste, comply with 40 CFR SQG/LQG generator requirements – soil in rolloffs / containers (comply with container management)
- If you want to use a soil pile, you/generator needs to obtain a non-commercial Part A or Part B Hazardous Waste (TSD) permit from the Department!