Basics of Hazardous Waste Training for Industry

Presented by

Steve Reichow, NES, Inc., sreichow@nesglobal.net

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Course Objectives

- This course provides an overview of federal and State regulations regarding the classification, management, transportation, and disposal of hazardous waste for California hazardous waste generators (large & small quantity)

Course Outline

- Regulatory Overview and Recordkeeping Requirements
- Hazardous Waste Determination
- Container and Tank Management
- Shipping Requirements

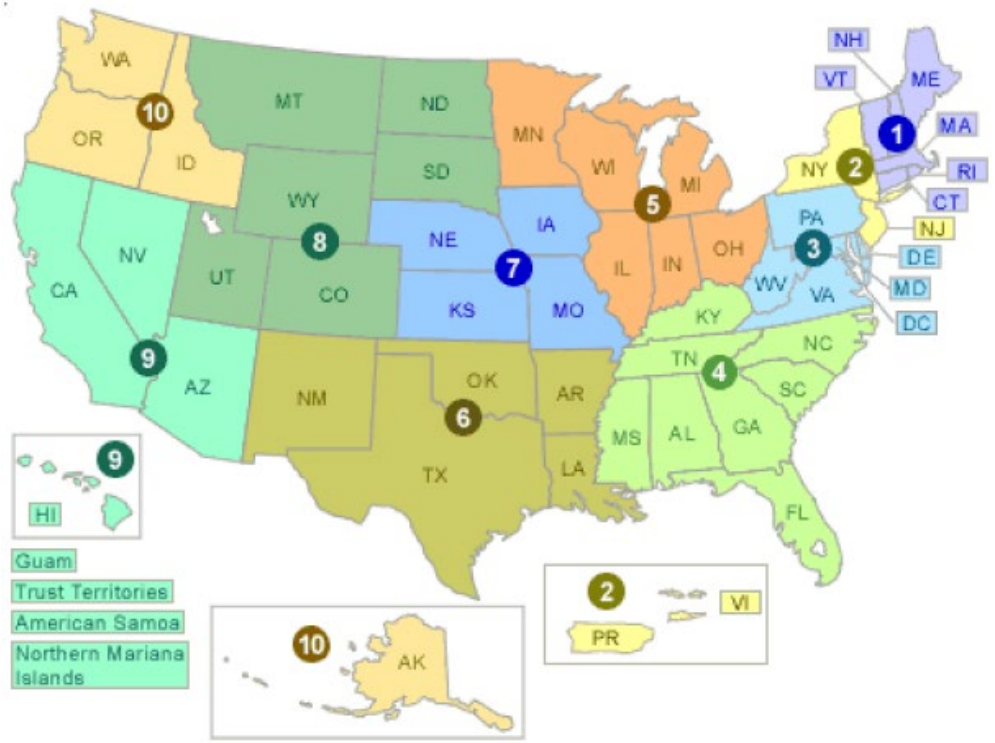
Regulatory Overview & Recordkeeping Requirements

Regulatory Overview

Gov't Level	Law	Year Enacted	Regulation	Agency
Federal	RCRA	1976	40 CFR 260-268, 273	Environmental Protection Agency (EPA)
State	HWCL	1972	22 CCR 66260-66268, 66273	Department of Toxic Substances Control (DTSC)
Federal	OSHA	1970	Title 29 CFR	Occupational Safety and Health Administration (OSHA)
State	Cal/OSHA	1973	Title 8 CCR	Division of Occupational Safety and Health (DOSH or Cal/OSHA)
Federal	HMTA	1975	Title 49 CFR	Department of Transportation (DOT)
State	CVC	1935	Title 13 CCR	California Highway Patrol (CHP) / Department of Motor Vehicles (DMV)

Regulatory Overview

- United States Environmental Protection Agency (U.S. EPA) protects human health and the environment:
  - Writes and enforces environmental regulations
  - Regulations enforced by regional offices



Regulatory Overview

- California Department of Toxic Substances Control (DTSC) protects people and the environment from harmful effects of toxic substances by:
  - Enforcing hazardous waste regulations
  - Inspecting permitted facilities and hazardous waste generators
  - Taking enforcement actions to ensure compliance

Regulatory Overview

- The Certified Unified Program Agency (CUPA) consolidates, coordinates, and makes consistent portions of the following six existing programs:
  - Aboveground Storage Tanks (SPCC Plans)
  - California Fire Code
  - California Accidental Release Prevention Program (CalARP)
  - Hazardous Materials Business Plans (HMBPs)
  - **Hazardous Waste Generators**
  - Underground Storage Tanks (USTs)

Regulatory Overview

- http://cersapps.calepa.ca.gov/Public/Directory/

Generator or Producer

- A generator is any person, by site, whose act or process produces hazardous waste or whose act first causes a waste to become subject to regulation as a hazardous waste

Generator Status

Acute/Extremely Hazardous Waste	Non-Acute/ Non-Extremely Hazardous Waste	Residues from Spills of Acute Hazardous Waste	Generator Status
> 1 kg	Any amount	Any amount	Large quantity generator (LQG)
Any amount	≥ 1,000 kg	Any amount	Large quantity generator
	Any amount	> 100 kg	
≤ 1 kg	> 100 kg and < 1,000 kg	≤ 100 kg	Small quantity generator (SQG)
	≤ 100 kg	≤ 100 kg	Very small quantity generator (VSQG) [federal category]

Generator Status

- Waste volume based on:
  - RCRA and non-RCRA wastes
  - Amount generated each month, not amount shipped off-site
  - When managed in accordance with applicable regulations or statutes, does not include:
    - Contaminated containers, recyclable latex paint, spent lead-acid storage batteries, treated wood wastes, universal wastes, used oil filters & fuel filters

Generator Status

- RCRA LQG
  - Generates > 1 kg of acute hazardous waste; OR
  - Generates > 100 kg of residue from spill of acute hazardous waste; OR
  - Generates ≥ 1,000 kg of non-acute RCRA hazardous waste

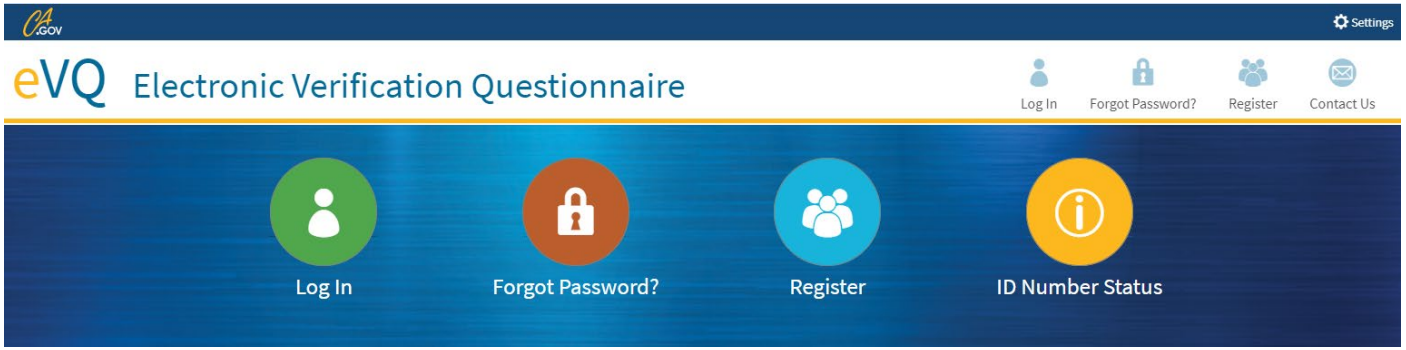
EPA Identification Numbers

[22 CCR 66262.12]

- Each site that generates hazardous waste must have an ID number
  - California ID numbers issued by DTSC
    - CAL – permanent
    - CAC – temporary
  - EPA ID numbers issued by U.S. EPA
    - CAR, CAD, CA, or CAT – permanent
    - CAP – temporary

EPA Identification Numbers

- Generators must verify their ID numbers (state and federal) annually
- Verification is completed electronically via DTSC's eVQ system
- If a generator fails to verify the site's ID numbers, DTSC will deactivate the site's ID number



Contingency Plans – LQGs

[22 CCR 66265.50-56]

- Spell out emergency actions involving hazardous waste
  - Fire
  - Explosives
  - Unplanned, sudden releases/spills

Contingency Plans – LQGs

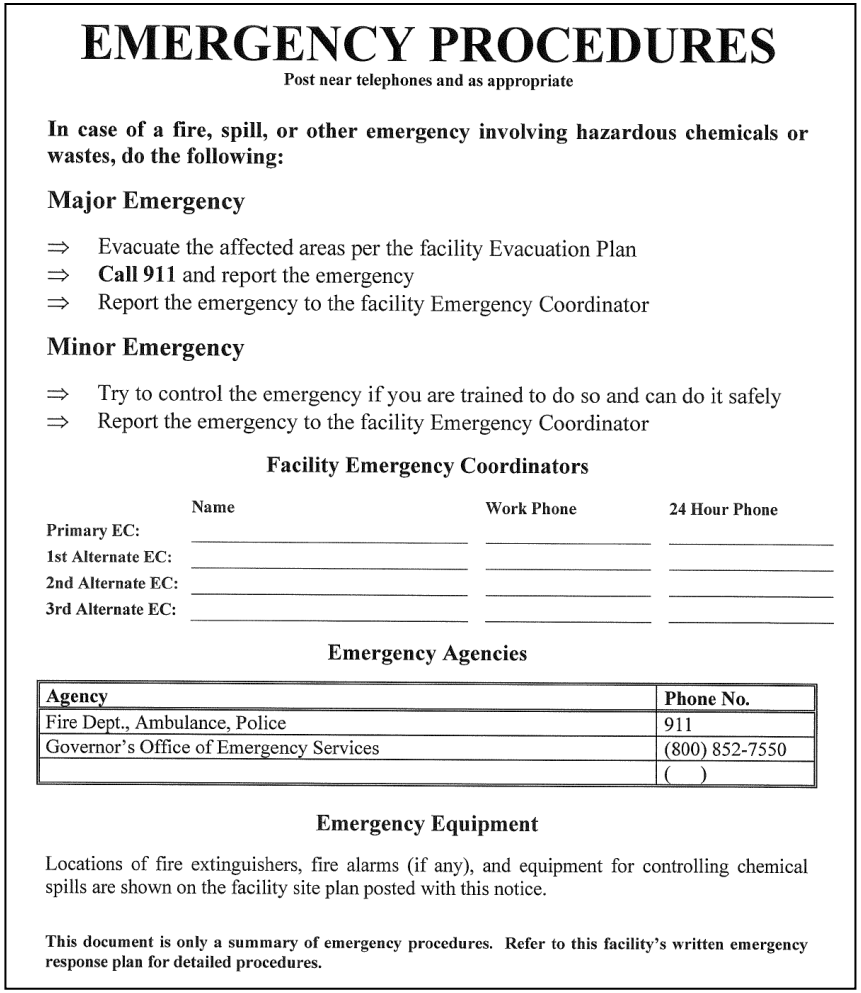
- Contents:
  - Emergency Coordinator
  - Emergency procedures
  - Emergency services and arrangements to coordinate response actions
  - Emergency equipment
  - Evacuation Plan
  - Cal OES contact
- Copy maintained on-site

- Review & updating:
  - Regulations change
  - Plan fails
  - Facility changes design or response operations
  - Emergency Coordinator changes
  - Emergency equipment changes

Emergency Procedures – SQGs

[40 CFR 262.16(b)(9)(i-ii)]

- At all times, at least one employee must be available to respond to an emergency
- Information must be posted next to telephones OR in areas directly involved in the generation and accumulation of hazardous waste
  - Name and number of Emergency Coordinator
  - Location of fire extinguishers, spill control equipment and fire alarm
  - Fire Department number



EMERGENCY PROCEDURES

Post near telephones and as appropriate

In case of a fire, spill, or other emergency involving hazardous chemicals or wastes, do the following:

Major Emergency

⇒ Evacuate the affected areas per the facility Evacuation Plan
⇒ **Call 911** and report the emergency
⇒ Report the emergency to the facility Emergency Coordinator

Minor Emergency

⇒ Try to control the emergency if you are trained to do so and can do it safely
⇒ Report the emergency to the facility Emergency Coordinator

Facility Emergency Coordinators

	Name	Work Phone	24 Hour Phone
Primary EC:			
1st Alternate EC:			
2nd Alternate EC:			
3rd Alternate EC:			

Emergency Agencies

Agency	Phone No.
Fire Dept., Ambulance, Police	911
Governor's Office of Emergency Services	(800) 852-7550
	( )

Emergency Equipment

Locations of fire extinguishers, fire alarms (if any), and equipment for controlling chemical spills are shown on the facility site plan posted with this notice.

This document is only a summary of emergency procedures. Refer to this facility's written emergency response plan for detailed procedures.

Hazardous Waste Tank Assessment

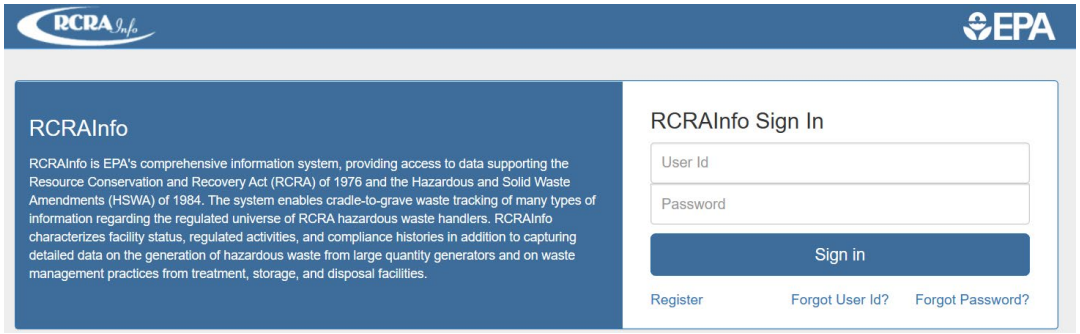
[22 CCR 66265.192]

- LQGs who accumulate hazardous waste in tanks must have a tank assessment that is certified by a PE
  - Assessment must be completed prior to putting tank into service
  - New tank systems must be re-assessed every five years
  - Assessment of the tank must include:
    - Tank configuration, material of construction & capacity
    - Design standard
    - Description of tank system piping
    - Description of any internal and external pumps
    - Sketch or drawing of tank including dimensions
    - Documented age of the tank system
    - Evaluation of leak detection, spill prevention equipment & containment
    - Evaluation of corrosion protection
    - Characteristics of the waste accumulated in tank
    - Remaining service life of tank

Biennial Report

[22 CCR 66262.41 & 66265.75]

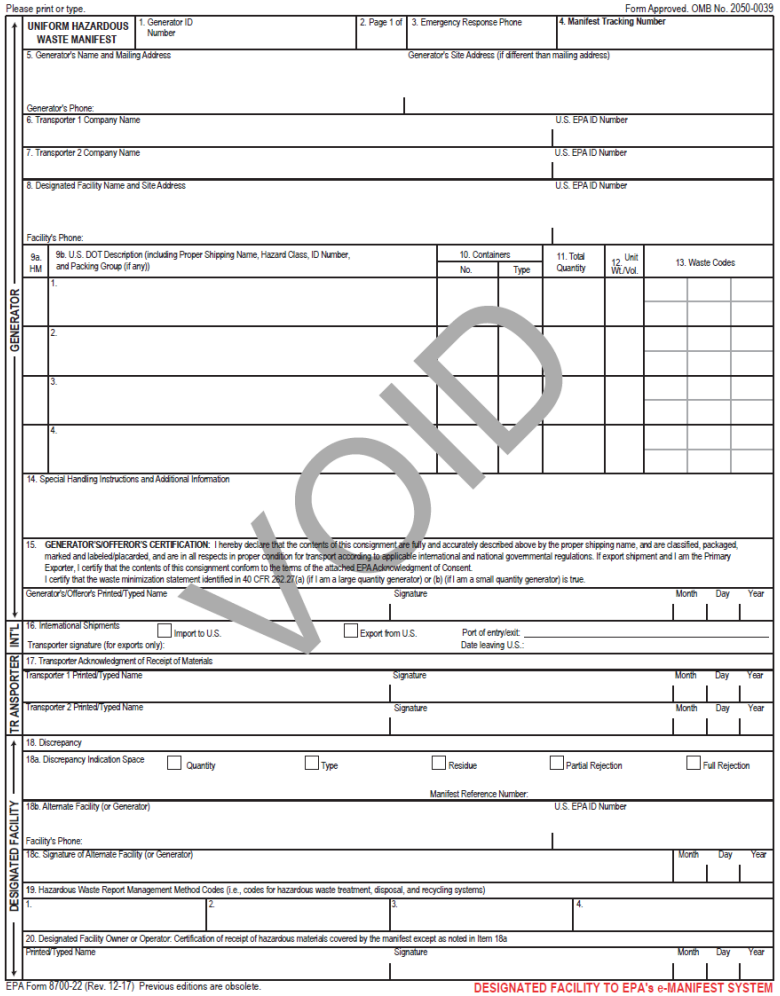
- Required & certified by **RCRA** LQGs
- Report covers odd-numbered year
  - Contains amounts by waste code
  - Identifies source & origin of waste
  - Identifies disposal method (recycled, incinerated, etc.)
  - Describes waste minimization efforts
- Due March 1st of even-numbered year



Disposal & Recycle Records

[22 CCR 66262.40 & 66268.7; HSC 25160.2]

- Manifests
- Consolidated manifests
  - Maintained for three years from date of shipment
- Land Disposal Restriction forms
  - Maintained for three years from the date restricted hazardous waste last shipped off-site


Please print or type. 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

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

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 | Signature | Month | Day | Year

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

DESIGNATED FACILITY

18. Discrepancy

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

Manifest Reference Number:

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

Facility's Phone:

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

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

1. | 2. | 3. | 4.

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

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

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

VOID

Record Retention

- Waste analytical test analyses
  - Three years from date waste was last shipped off-site
- Container inspections
  - Three years from date of inspection (best management practice [BMP])
- Tank inspections
  - LQG – three years from date of inspection
  - SQG – three years from date of inspection (BMP)
- Emergency equipment inspections
  - LQG – three years from date of inspection
  - SQG – three years from date of inspection (BMP)

Training Requirements – SQGs

[40 CFR 262.16(b)(9)(iii)]

- Employees must be familiar with proper waste handling and emergency response procedures relevant to their responsibilities
- Annual training is a BMP

Training Requirements – LQGs

[22 CCR 66265.16]

- Personnel must successfully complete a program of either:
  - Classroom, computer-based, or electronic instruction; OR
  - On-the-job (OTJ) training
- Training must cover hazardous waste management procedures and emergency response training
- Training must be provided within 180 days of hire / job placement
- Annual training required

Training Requirements – LQGs

- Personnel involved in shipping hazardous waste must receive *DOT Hazmat Employee* training
  - 49 CFR 172.704
  - Refresher training must be provided at least once every three years

Training Documentation – LQGs

- Documentation:
  - Description for each position related to hazardous waste management including the requisite skills, education, or other qualifications and duties of employees assigned to each position
  - Job title for each position related to hazardous waste management and the name of the employee filling each job
  - *[Continued…]*

Training Documentation – LQGs

- Description of the type and length of training needed for each position
- Records to document that training has been provided and completed
  - Records are to be kept until facility closure for current employees and for three years for former employees

Hazardous Waste Determination

Hazardous Waste Determination

[22 CCR 66262.11]

- A person who generates a waste must determine if it is hazardous by determining if the waste:
  - Is excluded from regulation
  - Is listed
  - Exhibits any hazardous waste characteristics
- Determinations can be made by:
  - Testing the waste
  - Generator's knowledge

Hazardous Waste Determination

[22 CCR 66261.2]

- Waste is any discarded material of any form (liquid, semi-solid, solid, or gaseous) that is not excluded by regulation or statute:
  - Relinquished (disposed of, burned or incinerated, or accumulated, stored, or treated prior to or in lieu of disposal)
  - Recycled (applied to land in a manner constituting disposal, used in products that are applied to land, burned to recover energy, reclaimed, or speculatively accumulated)
  - *[Continued…]*

Hazardous Waste Determination

[22 CCR 66261.2]

- Inherently waste-like materials when recycled (e.g., F020, F021 [with one exception], F022, F023, F026, and F028 – all dioxin-precursor waste)
- A material that poses a threat to human health and/or the environment that has been mislabeled or unlabeled for more than 10 days (i.e., 10 days from the day that the labeling deficiency was first discovered)
- A material that poses a threat to human health and/or the environment contained in a deteriorated or damaged packaging for more than 96 hours

Hazardous Waste Determination

[22 CCR 66261.4(a)]

- Materials that are not waste:
  - Industrial wastewater discharges
  - Nuclear byproducts
  - Spent sulfuric acid used to produce virgin sulfuric acid
  - Pulping liquors reclaimed in a pulping liquor recovery furnace
  - Secondary materials that are returned to the original process

Hazardous Waste Determination

[22 CCR 66261.4(b)]

- Wastes that are not hazardous waste:
  - Infectious wastes consisting only of animal carcasses
  - Materials not classified as a solid waste that do not exhibit a hazardous waste characteristic
  - Used oil re-refining distillation bottoms used as a feedstock for asphalt
  - Used CFC refrigerants that are reclaimed
  - *[Continued…]*

Hazardous Waste Determination

[22 CCR 66261.4(b)]

- Solid wastes from the extraction and processing of ores and minerals
- Hazardous wastes generated in a tank or manufacturing process unit
  - Exclusion applies until waste exits unit or remains in non-operational unit for more than 90 days
- Samples
- Controlled substances
- CRT glass

Hazardous Waste Determination

RCRA Hazardous Waste

- Listed
  - Unspent (U & P)
  - Spent (F & K)
- Characteristic
  - Ignitable (D001)
  - Corrosive (D002)
  - Reactive (D003)
  - Toxic (D004 – D043)

Non-RCRA Hazardous Waste

- Presumptive lists
  - Common name
  - Chemical constituents
- Characteristic
  - Ignitable
  - Corrosive
  - Reactive
  - Toxic

RCRA-Listed Wastes

[22 CCR 66261.31 & 66261.32]

Spent Waste Codes

- F-listed: Non-specific sources
  - F001 – F039
- K-listed: Specific sources
  - K001 – K175

Unspent Waste Codes

- P-listed: Acute hazardous waste
  - P001 – P205
- U-listed: Toxic hazardous waste (unless noted)
  - U001 – U411

RCRA-Listed Wastes

- Hazard codes represent basis for listing:
  - I – Ignitable waste
  - C – Corrosive waste
  - R – Reactive waste
  - E – Toxicity characteristic waste
  - T – Toxic waste
  - H – Acute waste

F-Listed Wastes

- Hazardous waste from non-specific sources:
  - Spent solvent wastes (F001 – F005)
  - Electroplating & metal-finishing wastes (F006 – F012 & F019)
  - Dioxin-containing wastes (F020 – F023 & F026 – F028)
  - Chlorinated aliphatic hydrocarbons production wastes (F024 & F025)
  - Wood-preserving wastes (F032, F034 & F035)
  - Petroleum refinery wastewater treatment sludges (F037 & F038)
  - Multi-source leachate (F039)

K-Listed Wastes

Hazardous Waste from Specific Sources

- Wood preservation
- Inorganic pigments
- Organic chemicals
- Inorganic chemicals
- Pesticides
- Explosives
- Petroleum refining
- Iron & steel
- Primary aluminum
- Secondary lead
- Veterinary pharmaceuticals
- Ink formulation
- Coking

Unspent Listed Wastes

[22 CCR 66261.33]

- Pure or commercial grade formulations of ***unused*** chemicals
  - Pure grade (100%)
  - Technical grade
    - All commercial grades of a chemical, which may be marketed in various stages of purity
  - Sole active ingredient
    - The only chemically active component for the function of the product
- Any chemical used for its intended purpose does not meet a P or U listing

Unspent Listed Wastes

[22 CCR 66261.33(e) & 66261.33(f)]

- P-listed wastes
  - Acutely hazardous, includes:
    - Contaminated containers
    - Spill cleanup
- U-listed wastes
  - Toxic (unless otherwise noted)

RCRA Ignitable Characteristic – D001

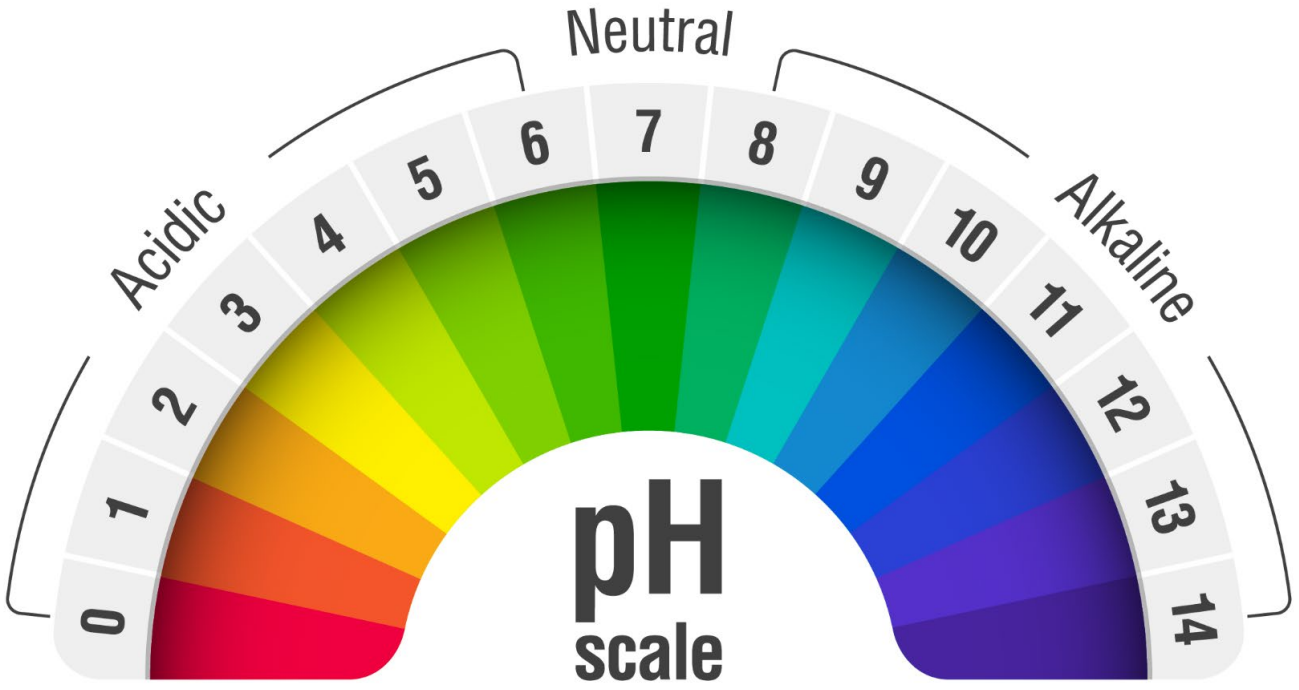
[22 CCR 66261.21]

- Liquid (other than < 24% alcohol by volume) with a flash point < 140°F (60°C)
- A solid that can cause fire through friction, absorption of moisture, or spontaneous chemical changes and burns vigorously and persistently when ignited
- Is an ignitable compressed gas
- Is an oxidizer

RCRA Corrosive Characteristic – D002

[22 CCR 66261.22]

- Aqueous with pH ≤ 2.0 or ≥ 12.5; OR
- Liquid that corrodes steel at ¼ inch (6.35 mm) per year



RCRA Reactive Characteristic – D003

[22 CCR 66261.23]

- Unstable and undergoes violent change w/o detonating;
- Reacts violently with water;
- Forms an explosive mixture with water;
- Generates toxic gases, vapors, or fumes with water;
- Cyanide- or sulfide-bearing waste producing toxic gases, vapors, or fumes @ pH 2 – 12.5;
- Capable of detonation or an explosive reaction; OR
- Forbidden explosive (49 CFR 173.51)

RCRA Toxic Characteristic – D004 – D043

[22 CCR 66261.24]

- Applies to eight inorganic elements and 32 organic compounds
- Tested using EPA Toxicity Characteristic Leaching Procedure (TCLP)
- Regulated if > specified threshold

California Presumptive Lists

[22 CCR, Division 4.5, Chapter 11, Appendix X]

- Chemical names
- Common names
- Presumed to create a non-RCRA hazardous waste based on hazardous characteristic
  - X: Toxic
  - C: Corrosive
  - I: Ignitable
  - R: Reactive

Non-RCRA Ignitable Characteristic – D001
(Same as Federal)

- Liquid (other than < 24% alcohol by volume) with a flash point < 140°F (60°C)
- A solid that can cause fire through friction, absorption of moisture, or spontaneous chemical changes and burns vigorously and persistently when ignited
- Is an ignitable compressed gas
- Is an oxidizer

Non-RCRA Corrosive Characteristic

- Aqueous with pH ≤ 2.0 or ≥ 12.5
- Liquid that corrodes steel at ¼ inch (6.35 mm) per year
- Non-aqueous wastes that yield pH ≤ 2.0 or ≥ 12.5 when mixed with an equivalent weight of water
- Non-liquids that corrode steel at ¼ inch (6.35 mm) per year when mixed with an equivalent weight of water

Non-RCRA Reactive Characteristic – D003
(Same as Federal)

- Unstable and undergoes violent change w/o detonating;
- Reacts violently with water;
- Forms an explosive mixture with water;
- Generates toxic gases, vapors, or fumes with water;
- Cyanide- or sulfide-bearing waste producing toxic gases, vapors, or fumes @ pH 2 – 12.5;
- Capable of detonation or an explosive reaction; OR
- Forbidden explosive (49 CFR 173.51)

Non-RCRA Toxic

- Exceeds TTLC or STLC for 20 inorganics (Table II) or 18 organics (Table III)
- Oral LD_{50} < 2,500 mg/kg
- Dermal LD_{50} < 4,300 mg/kg
- Inhalation LC_{50} < 10,000 ppm
- Aquatic 96-hr LC_{50} < 500 mg/L
- Listed carcinogen > 0.001% (10 ppm) by weight

Used Oil

[HSC 25250.1]

- Used oil is defined as oil that has been refined from crude oil, or any synthetic oil that has been used, and, as a result of use or as a consequence of extended storage or spillage, has been contaminated with physical or chemical impurities

Used Oil

Used Oil

- Crankcase oil
- Gear oil
- Vegetable or animal oil used as a lubricant
- Hydraulic oil
- Transformer oil
- Transmission fluid

Not Used Oil

- Antifreeze
- Brake fluid
- Fuels
- Other automotive wastes
- Solvents
- Oil w/ a flash point < 100°F
- Oil w/ ≥ 5 ppm PCBs
- Oil w/ > 1,000 ppm halogens

California Waste Codes

[22 CCR Appendix XII]

Restricted Wastes	700-800
Inorganics	100-199
Organics	200-300
Sludges	400-499
Miscellaneous	500-600

Exemptions

- Contaminated containers [22 CCR 66261.7]
- Drained oil filters [22 CCR 66266.130]
- Drained fuel filters [HSC 25250.22]
- Spent lead-acid storage batteries [22 CCR 66266.80-81]
- Universal wastes [22 CCR 66273]

Container & Tank Management

Container

- A container is a device that is open or closed, and portable, in which material can be stored, handled, treated, transported, recycled, or disposed of

Tank

- A tank is a *stationary* device designed to contain an accumulation of hazardous waste constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) that provide structural support

Central Accumulation Areas

- Generators must have a designated Central Accumulation Area (CAA)
  - Generators can have multiple CAAs
- LQGs: CAA must be > 50 ft from property line if ignitable (D001) or reactive (D003) waste accumulated
- Facility must be maintained & operated to minimize possibility of a fire, explosion, or release

Central Accumulation Areas

[22 CCR 66265.14]

Accumulation Time Limits & Volumes

LQG	90 days; no limit for hazardous waste accumulated on-site
SQG	180 days (270 days if shipped ≥ 200 miles); maximum 6,000 kg hazardous waste accumulated on-site
VSQG	No time limit until 100 kg of hazardous waste (180 days) or 1 kg of acutely or extremely hazardous waste is reached (then 90 days) [HSC 25123.3(c); 22 CCR 66262.34(b)(1)]

Container Accumulation Areas – LQG Security

- Located in secure area with access controlled
- Post warning sign: "Danger Hazardous Waste Area – Unauthorized Personnel Keep Out"

Central Accumulation Areas

[40 CFR 262.16(b)(8); 22 CCR 66265.15(b) & 66265.32-33]

- Emergency equipment:
  - Internal communication devices
  - Fire extinguishers
  - Spill control equipment
  - Decon equipment
  - Water at adequate volume and pressure
- Equipment must be tested & maintained

Container Management

[22 CCR 66262.34(f)]

- Hazardous waste containers must be marked with the following:
  1. The words "HAZARDOUS WASTE"
  2. Generator's name and address
  3. Contents
  4. Physical state
  5. Accumulation start date
  6. Hazardous properties
- Labels must be legible and visible!

Hazardous Waste Labeling

Container Management

[40 CFR 262.16(b)(2)(i-iii); 22 CCR 66265.171-173(a)]

- Hazardous waste containers must be:
  - In good condition (no signs of rust, damage, or leakage)
  - Compatible with the waste
  - Closed (except when adding or removing waste)
  - Managed in a manner so they are not ruptured or caused to leak

Container Management

- Funnels must meet closure requirements.

Container Management

- Aisle space between containers must allow for unimpeded access to containers

Container Management

[40 CFR 262.16(b)(2)(v); 22 CCR 66265.177]

- Incompatible hazardous wastes cannot be placed in the same container

TECHNOTE: POTENTIALLY INCOMPATIBLE WASTES*		
GROUP 1-A	**GROUP 1-B**	**POTENTIAL CONSEQUENCES**
• Acetylene sludge • Alkaline caustic liquids • Alkaline cleaner • Alkaline corrosive liquids • Alkaline corrosive battery fluid • Caustic wastewater • Lime wastewater • Spent caustic • Lime sludge • Pickling liquor and other corrosive alkalis	• Acid sludge • Spent sulfuric acid • Battery acid • Acidic chemical cleaners • Electrolyte, acid • Acid and water • Spent mixed acid • Spent acid • Etching acid liquid or solvent	*Heat generation* *Violent reaction*
GROUP 2-A	**GROUP 2-B**	
• Aluminum • Beryllium • Calcium • Lithium • Other reactive metals and metal hydrides • Zinc powder • Sodium • Potassium • Magnesium	• Any waste in Group 1-A or 1-B	*Fire* *Explosion* *Generation of flammable hydrogen gas*
GROUP 3-A	**GROUP 3-B**	
• Alcohols	• Calcium • Potassium • Other water-reactive waste • Lithium • Metal hydrides • SO_2Cl_2 (sulfuryl chloride), $SOCl_2$ (thionyl chloride), PCl_3 (phosphorus trichloride), CH_3SiCl_3 (trimethyl-trichlorosilane) • Any concentrated waste in Group 1-A or 1-B	*Fire* *Explosion* *Heat generation* *Generation of flammable or toxic gases*
GROUP 4-A	**GROUP 4-B**	
• Alcohols • Nitrated hydrocarbons • Unsaturated hydrocarbons • Aldehydes • Halogenated hydrocarbons • Other reactive organic compounds and solvents	• Concentrated Group 1-A or 1-B • Group 2 Wastes	*Fire* *Explosion* *Generation of flammable or toxic gases*
GROUP 5-A	**GROUP 5-B**	*Generation of toxic hydrogen cyanide* *Generation of hydrogen sulfide gas*
• Spent cyanide and sulfide solutions	• Group 1-B wastes	
GROUP 6-A	**GROUP 6-B**	
• Chlorates • Chlorine • Chlorites • Chromic acid • Hypochlorites • Nitric acid, fuming • Perchlorates • Permanganates • Peroxides • Nitrates • Other strong oxidizers	• Acetic acid and other organic acids • Group 2-A wastes • Group 4-A wastes • Concentrated mineral acids • Other flammable and combustible wastes	*Fire* *Explosion* *Violent reaction*
* Mixing a Group A material with a Group B material may have the listed consequences..		

Container Management

- Containers are not required to have secondary containment
  - Secondary containment is a BMP
- Secondary containment must be kept free of waste

Tank Management

[40 CFR 262.16(b)(6)(ii); 22 CCR 66262.34(f)(1&3)]

- Hazardous waste tanks must be labeled with:
  - The words "HAZARDOUS WASTE"
  - Accumulation start date
  - Hazardous property(ies) of the waste

Tank Management – LQGs

[22 CCR 66265.193]

- Hazardous waste tanks must have secondary containment:
  - Designed to prevent releases from impacting soil or water
  - Capable of detecting and collecting releases and accumulated liquids

Used Oil

[22 CCR 66279.1(b)]

- Containers and tanks utilized to store used oil must be marked with "Used Oil" (in addition to hazardous waste markings)
- **Do not** mark used oil containers and tanks with "Waste Oil"

Container Accumulation Area Inspections

[22 CCR 66265.174]

- Weekly:
  - Leaking containers
  - Deterioration of containers
  - LQGs – containment systems
- Inspections should be documented

Tank Inspections – SQGs

[40 CFR 262.16(b)(3)(iii)]

- Daily (unless tank has secondary containment):
  - Discharge controls
  - Monitoring data
  - Tank level
- Weekly
  - Construction materials of the tank
- Inspections should be documented

Tank Inspections – LQGs

[22 CCR 66265.195]

- At least once each operating day:
  - Overfill / spill control equipment
  - Aboveground portions of tank
  - Monitoring & leak detection equipment
  - Area surrounding externally accessible portion of tank system (secondary containment)
- Inspections must be documented
- Inspection records maintained for three years

Satellite Accumulation Areas

[22 CCR 66262.34(e)]

- Satellite Accumulation Area requirements:
  - At or near where the waste is generated
  - Under the control of operator of the process generating waste
  - Only containers can be used
  - One container per waste stream (unless generator determines using one container is not practical or safe – subject to DTSC review and approval)
  - *[Continued…]*

Satellite Accumulation Areas

- Limit of 55 gallons per waste stream
- Must meet all container management standards (weekly inspections not required)
- Container can be stored on-site for up to one year
- Container must be dated within three days of when it reaches capacity

General Housekeeping Practices

- Poor housekeeping can result in an increase in the amount of hazardous waste generated
  - Container closure
    - Protects workers from the waste & potential for releases
  - Spills must be cleaned up in a timely manner
  - Labeling must be legible and visible
  - Accumulation
    - Do not exceed time limits or volumes
  - Fines can be up to $70,000 per violation per day

Potential Compliance Issue

Potential Compliance Issue

Potential Compliance Issue

Miscellaneous Requirements

- Contaminated containers
- Drained oil filters
- Drained fuel filters
- Spent lead-acid batteries
- Universal wastes

Contaminated Containers (> 5 Gallons & ≤ 119 Gallons)

- Containers must be:
  - Empty – no continuous stream for liquids
  - Marked "EMPTY" (BMP)
  - Marked with the date they became empty
  - Stored on-site no more than one year (365 days)
  - Recycled
    - Recycle records are to be kept for three years

Contaminated Containers (≤ 5 Gallons)

- Containers that are 5 gallons or less **and** empty can be managed as municipal waste (trash)
  - Does not include containers that contained pesticides or acutely hazardous waste
- **Do not** dry containers; this may be considered treatment

Drained Used Oil Filters

- Oil filters must be:
  - Drained (no free-flowing liquid)
  - Stored in a rainproof and closed container
  - Labeled "Drained Used Oil Filters" with an accumulation start date
  - Stored on-site no more than one year (365 days; 180 days if > a ton)
- Recycle records are to be kept for three years

Drained Used Fuel Filters

- If oil and fuel filters are commingled:
  - Filters must be drained (no free-flowing liquid)
  - Stored in a rainproof and closed container, can be commingled with oil filters
  - Labeled "DRAINED USED OIL AND FUEL FILTERS" along with the accumulation start date
  - Stored on-site no more than one year (365 days – 180 days for more than a ton)
  - Recycle records kept for three years

Spent Lead-Acid Storage Batteries

- Management of batteries:
  - Stored upright on a pallet on a sealed surface
  - Stored to prevent the terminals from short circuiting
  - Stored on-site no more than one year (365 days; 180 days if > a ton) and marked with out-of-service date
- Recycle records are to be kept for three years

Universal Waste

- Examples of universal waste:
  - Aerosol cans (non-empty)
  - Batteries
  - Electronic devices (e-waste)
  - Lamps
  - Mercury-containing devices
  - Photovoltaic modules (solar panels)

Universal Waste

- Must be kept in a closed container that is compatible with the waste
- Labeled with:
  - "Universal Waste"
  - Type of waste (e.g., "Waste Lamps", "Used Batteries", "Waste Aerosols")
  - Accumulation start date
- Stored on-site for no more than one year (365 days)
- Tracking records maintained for three years

Shipping Requirements

Shipping Requirements

- Hazardous waste must be profiled for disposal and transported:
  - By a registered hazardous waste transporter
  - Using a Uniform Hazardous Waste Manifest
  - To a permitted facility
- RCRA hazardous wastes are subject to DOT regulations and land disposal restrictions

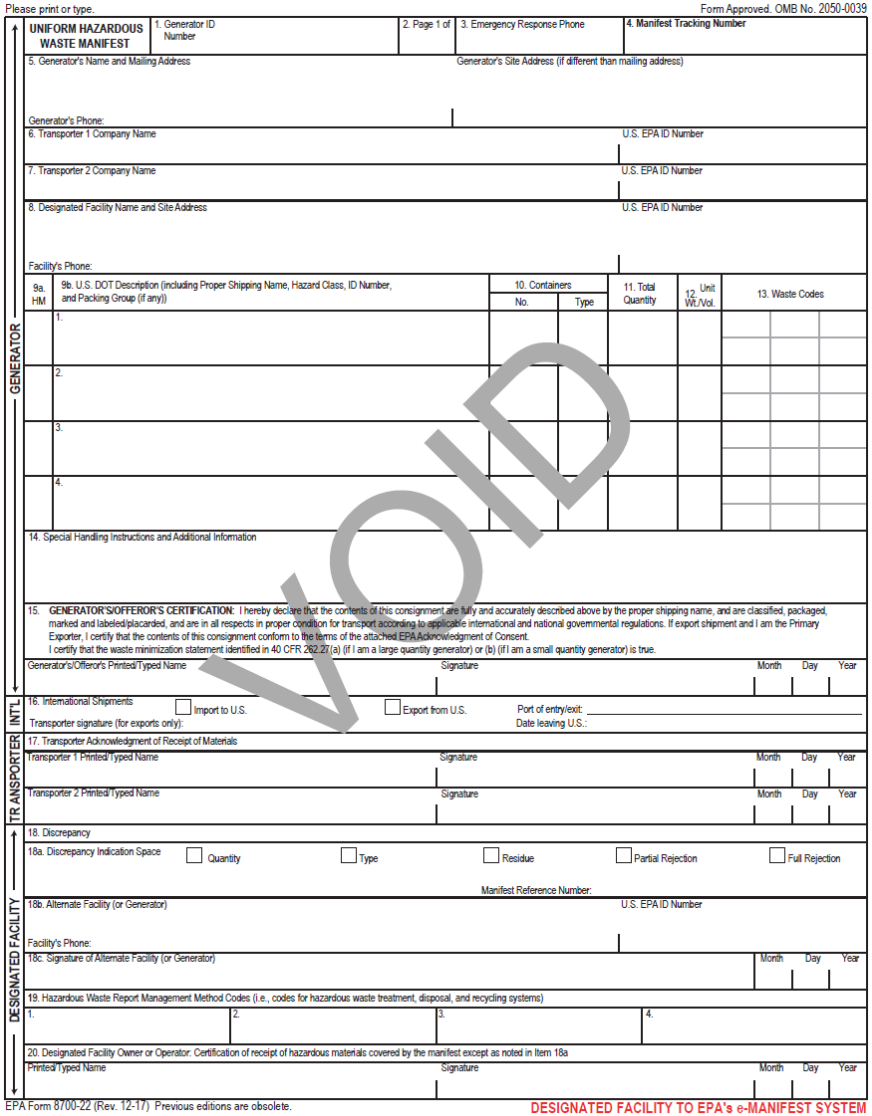
Shipping Requirements

[HSC 25218.4 & 25250.11-12]

- Exceptions:
  - VSQGs can self-transport hazardous waste to permitted HHW facility
  - Used oil transported to recycling facility (55-gallon limit)
  - Used oil generated during maintenance activities (55-gallon limit)
- These shipments do not require a hazardous waste transporter or Uniform Hazardous Waste Manifest

Shipping Requirements

- e-Manifest system implemented by EPA on June 30, 2018
  - Generators still allowed to use paper manifests
  - EPA form 8700-22 is the only manifest that can be used
  - Must be used for all RCRA (federal) and non-RCRA (California) hazardous wastes



Please print or type. Form Approved. OMB No. 2050-0039

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

GENERATOR

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

Generator's Phone:

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

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

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

Facility's Phone:

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

14. Special Handling Instructions and Additional Information

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

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

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

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

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

DESIGNATED FACILITY

18. Discrepancy

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

Manifest Reference Number:

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

Facility's Phone:

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

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

1. | 2. | 3. | 4.

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

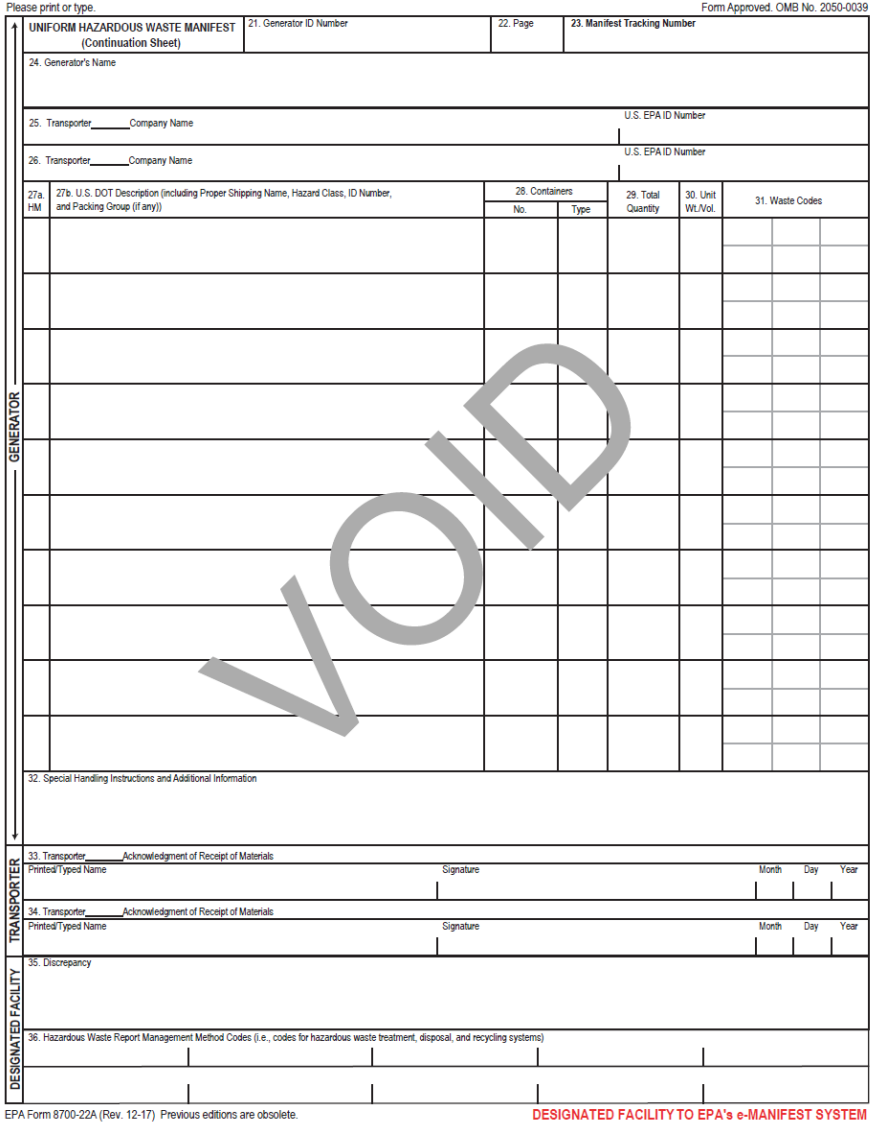
Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

VOID

Shipping Requirements

- EPA form 8700-22A is the only continuation sheet that can be used
  - Continuation sheet to be used when shipping more than four waste streams; OR
  - When using more than two registered hazardous waste transporters



Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet) | 21. Generator ID Number | 22. Page | 23. Manifest Tracking Number

24. Generator's Name

25. Transporter_____Company Name | U.S. EPA ID Number

26. Transporter_____Company Name | U.S. EPA ID Number

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

GENERATOR

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter_____Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

34. Transporter_____Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

35. Discrepancy

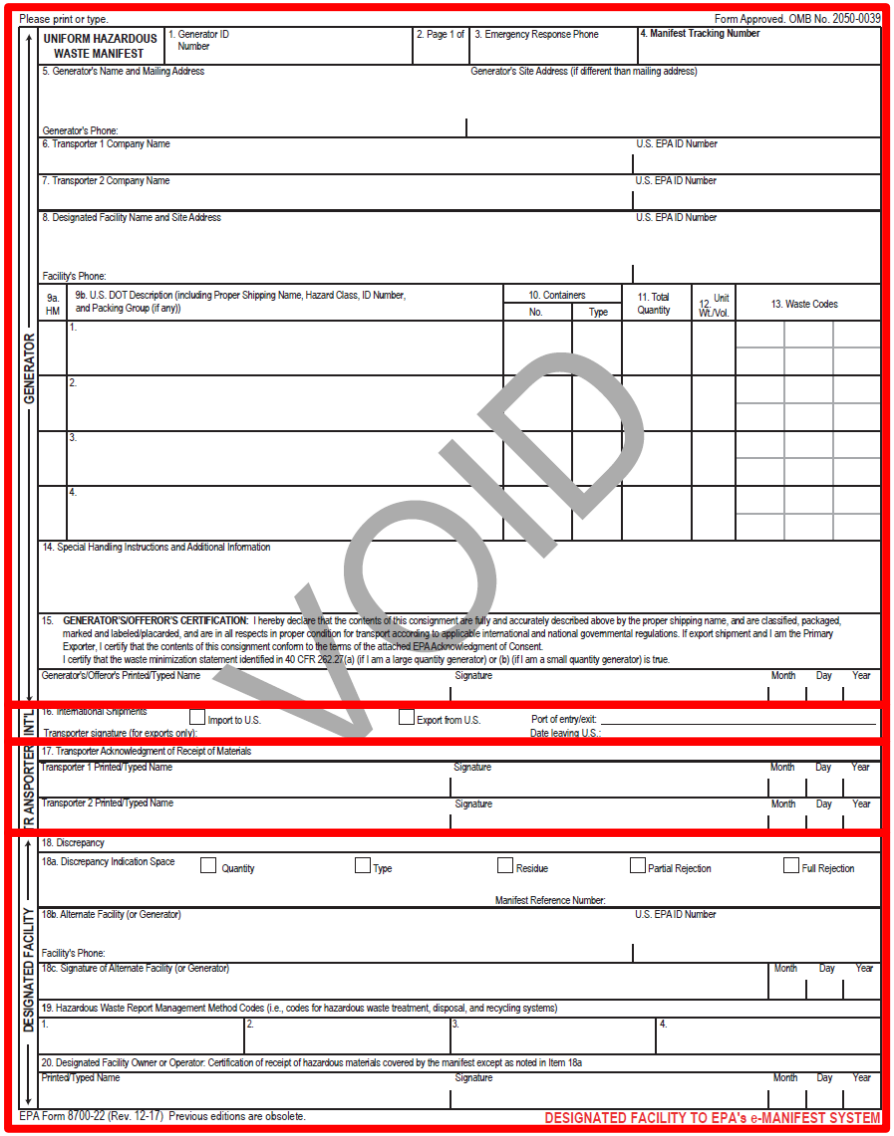
36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

VOID

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Shipping Requirements

- Generator is responsible for info in boxes 1 – 15
- Box 16 is for international shipments
- Box 17 is for transporter's acknowledgement of receipt
- Boxes 18 – 20 are to be completed by designated facility (TSDF)



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

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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.					
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GENERATOR

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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 | Signature | Month Day Year

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

DESIGNATED FACILITY

18. Discrepancy

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

Manifest Reference Number:

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

Facility's Phone:

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

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1. | 2. | 3. | 4.

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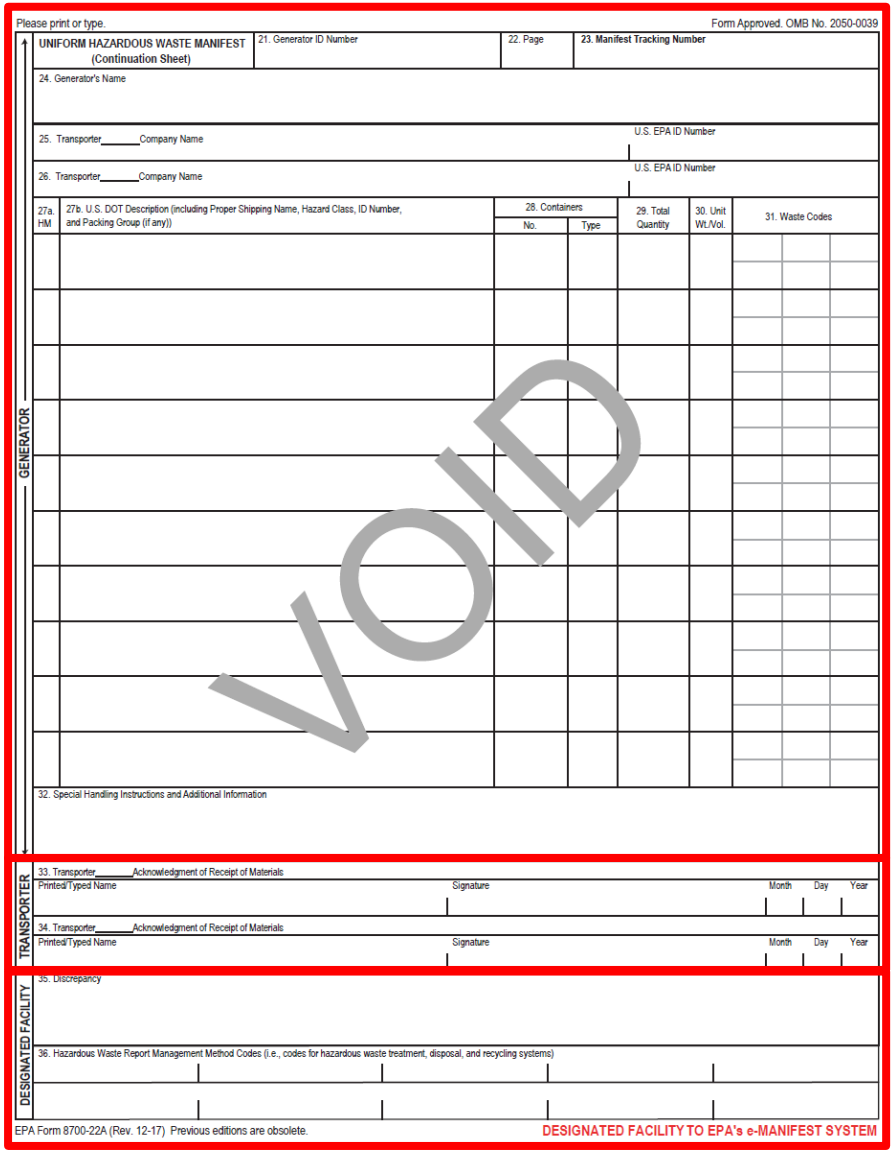
Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

VOID

Shipping Requirements

- Continuation sheet, EPA form 8700-22A
  - Generator is responsible for information in boxes 21 – 32
  - Transporter (other than transporter one or two) is responsible for information in boxes 33 – 34
  - Boxes 35 – 36 are to be completed by designated facility (TSDF)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UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet) | 21. Generator ID Number | 22. Page | 23. Manifest Tracking Number

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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

VOID

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter_____Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

34. Transporter_____Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

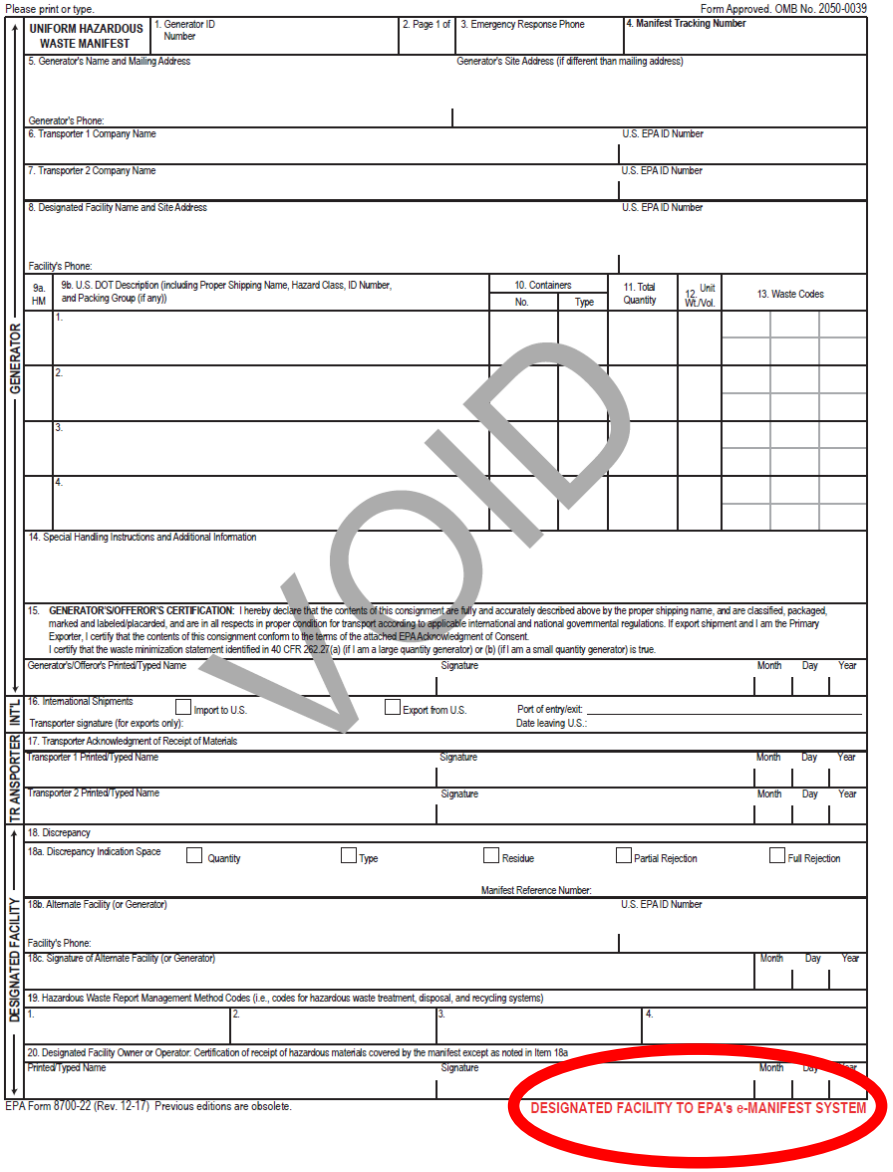
35. Discrepancy

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

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Shipping Requirements

- Paper manifest consists of five parts:
  - Page 1 – TSDF to EPA's e-Manifest system
  - Page 2 – TSDF to generator
  - Page 3 – TSDF copy
  - Page 4 – Transporter copy
  - Page 5 – Generator initial copy (legible copy must be mailed to DTSC within 30 days of shipment)



Shipping Requirements

- The generator must submit a legible manifest copy to DTSC within 30 days from the date of shipment to:

DTSC Generator Manifests
P.O. Box 400
Sacramento, CA 95812-0400

Shipping Requirements

- The TSDF must submit a manifest to EPA's e-Manifest system within 30 days of receiving shipment
- TSDF is responsible for paying fees for submit manifest to the e-Manifest system
  - Fees range from $4.00 – $20.00 per manifest

Shipping Requirements

- Generators must receive a signed copy of the manifest from the TSDF within 35 days from the date of shipment
- The generator is responsible for contacting the transporter and TSDF if the signed copy is not received by the 35th day

Shipping Requirements

- If the signed manifest copy is not received, the generator must submit an exception report to DTSC within:
  - 45 days for LQGs
  - 60 days for SQGs
- Exception report must include a legible copy of the manifest and efforts generator made to locate hazardous waste

Shipping Requirements

- Exception reports sent to:

DTSC Report Repository
Generator Information Services Section
P.O. Box 806
Sacramento, CA 95812-0806

Shipping Requirements

[HSC 25160.2]

- Consolidated manifests:
  - Authorized hazardous waste streams consolidated into a single shipment from multiple generators
  - Transported by a consolidated transporter
  - Generator and transporter section of manifest completed by transporter
  - Generator provided a receipt (signed by transporter and generator) for shipment
  - Receipt retained by generator for three years from date of shipment

Shipping Requirements

- Generators eligible to use consolidated manifest:
  - SQGs
  - LQGs for used oil and contents of oil/water separators
  - LQGs if they would qualify as an SQG when used oil and oil/water sludge volumes are excluded in waste quantity count

Shipping Requirements

- Used oil
- Contents of an oil/water separator
- Solids contaminated with used oil
- Brake fluid
- Antifreeze
- Antifreeze sludge
- Parts-cleaning solvents
- Asbestos and asbestos-containing materials
- Inks from the printing industry
- Chemicals and laboratory packs collected from K-12 school
- Filters from dispensing pumps for diesel and gasoline fuels
- Hydroxide sludge (contaminated solely with metal from a wastewater treatment process)
- Paint-related wastes including paints, thinners, filters, and sludge
- Spent photographic solution
- Dry cleaning solvents including perchloroethylene, naphtha, and silicone-based solvents
- Filters, lint, and sludge contaminated with dry cleaning solvent

Any Questions?

Presented by Steve Reichow, NES, Inc., sreichow@nesglobal.net, (916) 353-2360