



BASICS OF HAZARDOUS WASTE MANAGEMENT FOR INDUSTRY

Student Packet



2022

24th Annual
California CUPA Conference



NES Meet Your Instructor



Steve Reichow, CEA, CDGP, CDGT, CIT is Vice President at NES, Inc. (NES). Mr. Reichow has extensive knowledge in characterizing, profiling, manifesting, managing, transporting, and treating hazardous waste. He has over 22 years of experience providing consulting and training services regarding hazardous waste management, treatment, transportation, and disposal on behalf of government and private industry clients and has engaged in hazardous waste management and transportation audits for clients throughout California.

Mr. Reichow is a Certified Environmental Auditor, Certified Dangerous Goods Professional, Certified Dangerous Goods Trainer, and Certified Instructional Trainer. Among his many achievements, Mr. Reichow has developed instructor-led and web-based training programs on behalf of various California utility companies to satisfy California Code of Regulations, Title 22 and Code of Federal Regulations, Title 49 training requirements for employees responsible for managing and transporting hazardous waste. He has contributed to the development of hazardous waste compliance manuals and procedures for large and small quantity generators concerning proper handling, transportation, and disposal procedures for self-generated hazardous waste.

Mr. Reichow has also assisted numerous large and small quantity generators throughout California with the identification, management, packaging, transportation, and disposal of their self-generated hazardous waste. He regularly performs environmental site assessments and prepares guidance documents for organizations looking to maintain compliance with the multitude of regulations to which California businesses are required to adhere. Further experience includes responsibility for identifying, classifying, profiling, and manifesting hazardous waste for various remediation projects.

Mr. Reichow developed his practical proficiency through hands-on experience working as an Environmental Lab Pack Chemist at a local treatment, storage, and disposal facility and while overseeing field operations for a firm specializing in hazardous waste management, transportation, remediation, and emergency response services. He has developed and provided training to satisfy OSHA, EPA, DOT, IMDG, and IATA training requirements for companies and government agencies throughout the United States. He has delivered training presentations at the California CUPA Training Conference, Clandestine Laboratory Investigators Association Conference, and California Nevada Section American Water Works Association Conference.



About NES

NES, Inc. (NES) has been helping businesses and government agencies protect their employees and the environment since 1987. A nationally recognized leader in environmental, health & safety (EH&S) training and consulting, we provide expert industrial hygiene services in the areas of indoor air quality, water damage & mold, asbestos, occupational exposure, OSHA compliance, and other EH&S concerns. We specialize in delivering environmental compliance expertise on numerous issues, including storm water, air quality, and hazardous waste management. NES is now offering businesses access to this expertise with our new **EH&S Partner Program** (see flyer on next page!).

NES regularly performs construction safety observations on a range of projects, supporting safety goals and helping affected personnel work in a culture of heightened safety awareness. We also train first responders across the U.S. and internationally to respond to clandestine drug laboratory sites and handle narcotics, including toxic opioids, safely and effectively.



NES Headquarters
1141 Sibley Street
Folsom, CA 95630



Bay Area Facility
3055 Alvarado Street
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“Employers need to stay compliant with state and federal regulations; without proper training, your business or organization is at increased risk of costly incidents & citations.”

– Jerry Bucklin, NES Founder

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EH&S PARTNER PROGRAM



Multiple Packages Available



The EH&S Partner Program: Common Sense Compliance

This new program assigns a dedicated EH&S professional to your business to provide on-site and off-site compliance support. Our budget-friendly membership includes plan preparation, auditing, training, program review, program development, and project management for critical environmental health & safety issues.

Features & Benefits

- Regular on-site visits
- Operations gap analysis
- Underground storage tank Designated Operator services
- Phone & email consultation
- Compliance peace of mind
- EH&S policy, program, and report development
- Various EH&S training included
- Discounted specialized training
- In-house personnel savings
- Consultation & agency support

HMBP/CERS

PROACTIVE

PROTECTOR

REGULATOR

CHAMPION

CUSTOM

Packages based on **generator status** and **# of employees**



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Contact NES at
partnerprogram@nesglobal.net
or (279) 333-5586
for more information

NES Open Enrollment Training

HAZWOPER

40-Hour HAZWOPER

This training program is required for those involved in hazardous waste operations where the potential for exposure to regulated hazards exists. Topics include chemical & physical hazard recognition, hazard controls,

selection of personal protective equipment, air monitoring, respiratory protection, site control, decontamination, field-specific operations, and an introduction to emergency response. Training includes classroom instruction, workbook activities, and a field exercise incorporating the use of personal protective equipment and monitoring, sampling, and decon practices.

24-Hour HAZWOPER

This course is required for occasional wastesite personnel performing limited hazardous waste remediation and cleanup operations at fully characterized and monitored sites where exposure above established thresholds is not expected and air monitoring or use of respirators is not required.

8-Hour HAZWOPER & Emergency Response Refresher

Required annually to maintain compliance, topics for this training program include the latest in regulatory changes, protective clothing trends, expanded chemical hazards, emergency response procedures, field safety, respiratory protection, and revised hazard assessment techniques. This classroom-based course also satisfies emergency response refresher requirements.

NES also provides 16-Hour HAZWOPER Supplemental, HAZWOPER Management & Supervisor, First Responder Operations, Incident Commander, and Hazardous Materials Technician training.



Transportation

DOT Hazmat Employee (8-Hour)

This course is intended for employees who affect the safe transportation of hazardous materials and hazardous waste and those who prepare and sign Uniform Hazardous Waste Manifests. The course also serves as

the three-year refresher for those who have previously taken initial training.

Uniform Hazardous Waste Manifest (8-Hour)

This course is strongly recommended for personnel who prepare manifests or sign manifests and/or shipping papers prepared by others. The program satisfies function-specific 49 CFR 172.704 and 22 CCR 66262.23 training requirements.

IATA Dangerous Goods (8-Hour)

This 8-hour program satisfies the initial and recurrent (2-year) training requirements mandated by IATA Dangerous Goods Regulations applicable to ground handling agencies, freight forwarders, shippers of dangerous goods by air, and agencies engaged in security screening.

NES also provides IMDG transportation training.



Hazardous Waste

Hazardous Waste Management (8-Hour)

This training meets both federal and State initial and annual refresher requirements for facility and generator personnel who generate hazardous waste as part of their job

duties. Topics include fundamental practices of recordkeeping, tiered permitting, container & tank management, hazardous waste shipping (including EPA's e-Manifest system), land disposal restrictions, and on-site treatment.

Advanced Hazardous Waste Management (16-Hour)

This two-day course is our most thorough hazardous waste management compliance program. Training provides an in-depth understanding of applicable California and federal hazardous waste management requirements for small and large quantity generators. The program covers determining generator status, recordkeeping & general management requirements, EPA's e-Manifest system, hazardous waste identification & classification, facility standards, container & tank management, land disposal restrictions, tiered permitting, California's waste minimization program (SB 14), the Unified Program, and an overview of DOT regulations.

Visit nesglobal.net to view our training calendar & explore our services!



Cannabis

Cal/OSHA 30-Hour General Industry – Cannabis Edition

California cannabis businesses are now required by licensing agencies to have at least one supervisor and one employee complete Cal/OSHA 30-Hour General Industry training.

This program is required by Cal/OSHA to cover certain topics, but we tailor the program so that it fits the context of cannabis industry operations; however, anyone seeking Cal/OSHA 30-Hour General Industry training can attend this program and become certified. Participants will receive training on the recognition, avoidance, abatement, and prevention of safety and health hazards in the workplace.

Cannabis Industry for Regulators (16-Hour)

This valuable two-day training program is intended for regulatory personnel who may be visiting cannabis businesses in California for the purpose of performing site audits. The course covers the hazards inherent to cannabis operations, the protocols for performing inspections, and the continually evolving practices and regulations that apply to this young industry. Participants will leave class with a greater understanding of the California cannabis industry and their role within it.

California CUPA Overview

Enforcing the CalEPA Unified Program



History of California CUPAs

The California Environmental Protection Agency (CalEPA) was established in 1991 to oversee environmental protection programs statewide. The agency's general mission is, "to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality." In order to achieve this, CalEPA oversees the implementation of what is known as the Unified Program through Certified Unified Program Agencies (CUPAs).

The Unified Program ensures consistency regarding hazardous waste and hazardous materials handling in California by consolidating six environmental programs. Local agencies, commonly environmental health departments or other public health-related organizations, are certified by CalEPA as CUPAs to manage and enforce the Unified Program within their jurisdictions.

There are currently 81 CUPAs in the State, including Fresno County Department of Public Health, Merced County Department of Public Health, San Mateo County Environmental Health Department, Yolo County Environmental Health Department, and San Joaquin County Environmental Health Department.

In addition to CUPAs, there are 24 Participating Agencies (PAs) in California. PAs, typically small- to medium-sized fire departments, work in conjunction with the regional CUPA(s). PAs enforce one or more of the programs included in the Unified Program in place of a CUPA. For example, the Pasadena Fire Department operates as a PA within the jurisdiction of the Los Angeles County Fire Department CUPA. Through the PAs and CUPAs, California can maintain a more unified and efficient process for protecting public health and safety and the environment.

The California CUPA Forum was established to continually improve the Unified Program. The California CUPA Forum provides videos, documents, and frameworks to support CUPAs. Additionally, the forum holds a conference each year that provides training in subjects related to enhancing Unified Program implementation.

The Six Programs of California CUPAs

California CUPAs are an integral part of the CalEPA Unified Program. CUPAs consolidate, coordinate, and make consistent the enforcement activities of *six environmental and emergency response programs* in California. State agency partners that are associated with the enactment of the Unified Program are responsible for setting program standards, working with CalEPA to ensure program consistency, and providing technical assistance to CUPAs.

Through the PAs and CUPAs, California can maintain a more unified and efficient process for protecting public health and safety and the environment.

Visit our blog to see the original June 20, 2019 article, including source references:

nesglobal.net/blog

The NES blog provides regular, accessible content relating to workplace safety, regulatory compliance, permitting issues, and more.



The Six Programs of California CUPAs

Hazardous Materials Business Plans Program



The *Hazardous Materials Business Plans (HMBPs) program*, first established in 1986 by the California Governor's Office of Emergency Services (CalOES), was instituted primarily as a response to the 1984 Bhopal, India chemical disaster, in which a toxic gas was released, resulting in approximately 15,000 deaths. The purpose of the program is to, "prevent or minimize the damage to public health and safety and the environment from a release or threatened release of hazardous materials." HMBPs provide a reference source of businesses' chemical inventories for use by responders in the case of an emergency.

Hazardous Waste Generators Program



California CUPAs are charged with overseeing the *Hazardous Waste Generators program*, which ensures that hazardous wastes generated by businesses are properly handled, recycled, treated, stored, and disposed. There are specific procedures for determining how hazardous waste is classified and handled. The program, which originates from the California Department of Toxic Substances Control (DTSC), also covers Emergency Response Plans, spill and release reporting, and hazardous waste minimization.

California Accidental Release Prevention Program



According to the California CUPA Forum, the goal of the *California Accidental Release Prevention (CalARP) program* is to, "reduce the likelihood and severity of consequences of extremely hazardous materials releases." Under the program, facilities that handle specific chemicals are required to take steps to prevent and prepare for accidental releases of substances that can cause serious harm to the public and the environment. The program, which is overseen by CalOES, requires the development of Risk Management Plans. California CUPAs are responsible for reviewing these plans before implementation.

Aboveground Storage Tanks



Adopted in 1989, the *Aboveground Petroleum Storage Act (APSA) program* regulates facilities with large (greater than 1,320 gallons) aggregate petroleum tank storage, aboveground fuel tank stations, and vehicle repair shops. APSA does not regulate non-petroleum products, and all regulated facilities must meet federal EPA Spill Prevention, Control, and Countermeasure (SPCC) rule requirements. SPCC Plans are intended to prevent, prepare for, and execute responses to petroleum releases from aboveground storage tanks.

Underground Storage Tanks



While the APSA program specifically regulates petroleum storage, the *Underground Storage Tank (UST) program* covers tanks located partially or completely beneath the surface of the ground that store any type of hazardous chemical. According to federal EPA, most USTs were made of bare steel until the mid-1980s and were likely to corrode and leak over time. The UST program, which is overseen by the California State Water Resources Control Board, protects against hazardous substance releases by regulating leak prevention, cleanup, enforcement, and tank test licensing procedures.

California Fire Code



There are two sections of the *California Fire Code (CFC)* that are included in CalEPA's Unified Program. These CFC sections deal with Hazardous Materials Management Plans and Hazardous Materials Inventory Statements (equivalent of HMBPs). According to the overseeing agency, CAL FIRE, these sections of the CFC are designed to, "enhance coordination and communication among the CUPA, participating agencies, fire agencies, and business stakeholders." This is achieved by strengthening communication, coordination, consistency, and consolidation through the California CUPAs.

NES & California CUPAs



NES maintains a solid reputation for providing expert environmental, health & safety training on behalf of various California CUPAs. We are contracted with CUPAs throughout California to deliver training programs to regulated businesses within those CUPAs' jurisdictions to help businesses protect their employees, their assets, and the environment. Inspectors routinely attend our open enrollment OSHA and hazardous waste management training programs at our Folsom, CA & San Leandro, CA training centers. Additionally, to further assist regulatory personnel in light of the recent emergence of the legal cannabis industry in California, NES has developed a specialized *Cannabis Industry for Regulators* training program (described below).



Commonly Provided NES CUPA Training Programs

SPCC Plans for APSA Sites

This course covers APSA statutes, SPCC Plans, regulatory requirements, and releases for facilities with aboveground storage tanks.

Universal Waste Management

This training program covers hazards associated with universal waste, responding to releases of universal waste, and proper packaging, labeling, accumulation, and shipping requirements for universal waste.

Hazardous Waste Management for the Auto Industry

This program provides an outline of waste management requirements for hazardous waste commonly generated in the auto industry (repair and paint shops) and includes pollution prevention methods.

Hazardous Materials Business Plans / CERS

This course provides a breakdown of HMBP requirements, completion and submittal of the HMBP via CERS, Contingency Plan requirements, and emergency response procedures.

UST Owner/Operator

Training covers the responsibilities of owners and operators of facilities with underground storage tanks.

Basic Hazardous Waste Management

Training outlines hazardous waste recordkeeping and management requirements, hazardous waste identification and classification, container and tank management requirements, and shipping requirements.

Advanced Hazardous Waste Management

This training program covers generator status determination, hazardous waste recordkeeping and management requirements, hazardous waste identification and classification, hazardous waste exemptions and recycling exceptions, container and tank management, facility standards, land disposal restrictions, and tiered permitting.

DOT & Hazardous Waste Manifest

Training topics for this course include identification of DOT-regulated hazardous materials and hazardous waste, proper packaging, marking, and labeling, and completion and submittal of the Uniform Hazardous Waste Manifest form.



Cannabis Industry for Regulators Training



The regulated cannabis industry continues to increase its presence in California and across the country. City, county, and State regulatory agencies are required to inspect cannabis businesses and enforce the current regulations, but regulatory applications can be difficult to determine. *Cannabis Industry for Regulators* is a valuable training program intended for regulatory personnel (or those overseeing such personnel) who may be visiting cannabis businesses in California for the purpose of performing site audits. The course covers the continually evolving industry practices and regulations that apply to this burgeoning industry, the protocols for performing inspections, and the hazards inherent to cannabis operations. Course participants will gain a greater understanding of the California cannabis industry, its rules and regulations, their role within the industry, and how to professionally and safely conduct a cannabis site inspection.

Are you an REHS? As a CDPH-accredited firm, NES course hours convert 1:1 to contact hours!

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Basics of Hazardous Waste Management for Industry

40 CFR 262.16(b)(9)(iii) & 22 CCR 66265.16

24th California Unified Program Annual Training Conference

www.NESglobal.net

Thank you to all our 2022 **SPONSORS** and **EXHIBITORS!**



Objectives



Provide an overview of federal and State regulations regarding the classification, management, transportation, and disposal of hazardous waste for California hazardous waste generators



Cover standards for both small quantity generators (SQGs) and large quantity generators (LQGs)

Course Outline

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, OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL.

GENERATOR INFORMATION:
NAME _____
ADDRESS _____ PHONE _____
CITY _____ STATE _____ ZIP _____
EPA IDENTIFICATION NO. / MANIFEST TRACKING NO. _____
EPA WASTE NO. _____ CA WASTE NO. _____ ACCUMULATION START DATE _____
CONTENTS, COMPOSITION: _____

PHYSICAL STATE: SOLID LIQUID HAZARDOUS PROPERTIES: FLAMMABLE TOXIC
 CORROSIVE REACTIVITY OTHER _____

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

HANDLE WITH CARE!

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

Regulatory Overview & Recordkeeping Requirements



Regulatory Overview & Recordkeeping Requirements

Hazardous Waste Regulations

Resource Conservation and Recovery Act (RCRA):
40 CFR 260 – 268, 273 (universal waste)

California Statutes: HSC Division 20, Chapter 6.5

California Regulations: 22 CCR 66260 – 66268,
66273 (universal waste)

Regulatory Overview & Recordkeeping Requirements

Hazardous Waste Regulations

CUPA will inspect hazardous waste generators

Facilities that have an HMBP will be inspected at least once every three years

CUPA directory:
<https://cersapps.calepa.ca.gov/Public/Directory/>

Generator or Producer

A generator or producer 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.



Regulatory Overview & Recordkeeping Requirements

Hazardous waste management requirements dictated by generator category

Large quantity generator (LQG)



Small quantity generator (SQG)



Very small quantity generator (VSQG)

This is federal category, which is not recognized in California

Regulatory Overview & Recordkeeping Requirements

Hazardous waste generator category is determined by amount and type of hazardous waste generated in a calendar month

RCRA: acute or non-acute



Non-RCRA: extremely or non-extremely

Generator Category

Generator Status	Acute / Extremely Haz Waste	Non-Acute / Non-Extremely Haz Waste	Spill Cleanup of Acute / Extremely Haz Waste
Large quantity generator (LQG)	≥ 1 kg	≥ 1,000 kg	≥ 100 kg
Small quantity generator (SQG)	≤ 1 kg	> 100 kg and < 1,000 kg	≤ 100 kg
Very small quantity generator (VSQG)	≤ 1 kg	≤ 100 kg	≤ 100 kg

EPA Identification Numbers

- 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

Contingency Plans – LQGs

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

[22 CCR 66265.50-56](#)

Contingency Plans – LQGs

- Contents:
 - Emergency Coordinator
 - Emergency procedures
 - Emergency services and arrangements to coordinate response actions
 - Emergency equipment
 - Evacuation Plan
 - Cal OES contact
- Reviewed and updated when:
 - Regulations change;
 - Plan fails;
 - Facility changes design or response operations;
 - Emergency Coordinator changes; OR
 - Emergency equipment changes
- Copy maintained on-site

[22 CCR 66265.52– 54](#)

Emergency Procedures – SQGs

- 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 & 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

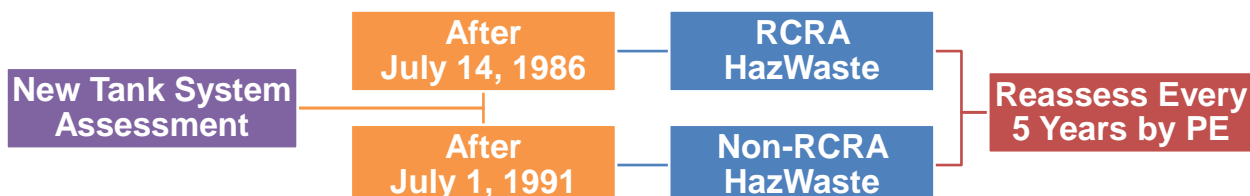
Locations of fire extinguishers, fire alarms (if any), and equipment for controlling chemical spills are shown on the facility site plan posted with this notice.

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

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

Hazardous Waste Tank Assessments

- 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 reassessed every five years



[22 CCR 66265.192](#)

Hazardous Waste Tank Assessments

Assessment of the tank must include:

- Tank configuration, material of construction, and 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, and containment
- Evaluation of corrosion protection
- Characteristics of the waste accumulated in tank
- Remaining service life of tank

[22 CCR 66265.192](#)

Biennial Report

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

RCRAInfo Sign In

User Id

Password

Sign in

Register Forgot User Id? Forgot Password?

Warning Notice and Privacy Policy

Warning Notice

In proceeding and accessing U.S. Government information and information systems, you acknowledge that you fully understand and consent to all of the following:

1. you are accessing U.S. Government information and information systems that are provided for official U.S. Government purposes only;
2. unauthorized access to or unauthorized use of U.S. Government information or information systems is subject to criminal, civil, administrative, or other lawful action;
3. the term U.S. Government information system includes systems operated on behalf of the U.S. Government.

[22 CCR 66262.41](#) & [66265.75](#)

Disposal & Recycle Records

- Uniform Hazardous Waste Manifests
- Consolidated manifests
 - Maintained for three years from date of shipment
- Land Disposal Restriction (LDR) forms
 - Maintained for three years from date waste last shipped off-site

The image shows a Uniform Hazardous Waste Manifest form, which is used for tracking hazardous waste from the point of generation to the point of disposal or recycling. The form includes sections for waste identification, tracking, and disposal. A large 'VOID' watermark is overlaid on the form.

[22 CCR 66262.40](#) & [66268.7](#); [HSC 25160.2](#)

Record Retention

- Waste analytical test analyses
 - Three years from date waste was last shipped off-site
- Container and tank inspections
 - Best management practice (BMP) three years from date of inspection
- Tank inspections
 - Three years from date of inspection
- Emergency equipment inspections
 - Three years from date of inspection

LQGs: Required to keep tank & emergency equipment inspection records for three years

SQGs: Not required to keep inspection records but recommended as a BMP

Training Requirements – SQGs



Employees must be familiar with proper waste handling and emergency response procedures relevant to their responsibilities



Annual training is not required for SQG under hazardous waste law

If an SQG has a Hazardous Materials Business Plan (HMBP), then annual training on the elements of the HMBP, including handling and spill response, is required



Annual training is a best management practice (BMP)

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

Training Requirements – LQGs



Personnel must successfully complete a program of either:

Classroom or electronic (computer-based, etc.) 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

[22 CCR 66265.16](#)

Training Requirements – LQGs

Personnel involved in shipping hazardous waste must receive [DOT Hazmat Employee](#) training.



[49 CFR 172.704](#); [22 CCR 66265.16](#)

Training Requirements – 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
- 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
 - Three years for former employees

[22 CCR 66265.16](#)

Hazardous Waste Determination



Hazardous Waste Determination

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

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
- M-listed waste
- Characteristic
 - Ignitable
 - Corrosive
 - Reactive
 - Toxic

F-Listed Wastes

- Spent 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

Spent 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

- 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

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

EPA HAZARDOUS WASTE NO.	SUBSTANCE
P023	Acetaldehyde, chloro-
P002	Acetamide, N-(aminothioxomethyl)-
P002	Acetamide, (aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P203	Aldicarb sulfone
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide (R,T)
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-Aminopyridine
P009	Ammonium picrate (R)
P119	Ammonium varadate
P099	Argentate (1-), bis (cyano-O), potassium
P010	Arsenic acid H ₃ AsO ₄
P012	Arsenic oxide As ₂ O ₃

EPA HAZARDOUS WASTE NO.	SUBSTANCE
U001	Acetaldehyde (I)
U034	Acetaldehyde, trichloro-
U187	Acetamide, N-(4-ethoxyphenyl)-
U005	Acetamide, N-9H-fluoren-2-yl
U240	Acetic acid, (2,4-dichlorophenoxy)- salts and esters
U112	Acetic acid, ethyl ester (I)
U144	Acetic acid, lead (2+) salt
U214	Acetic acid, thallium (1+) salt
See F027	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	Acetone (I)
U003	Acetonitrile (LT)
U004	Acetophenone
U005	2-Acetylaminofluorene
U006	Acetyl chloride (C,R,T)
U007	Acrylamide
U008	Acrylic acid (I)
U009	Acrylonitrile
U011	Amfrole
U012	Aniline (LT)

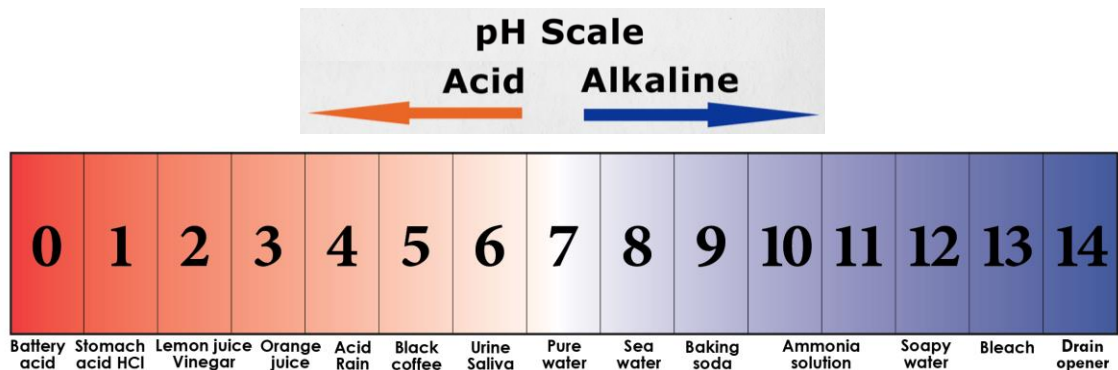
RCRA Ignitable Characteristic – D001

- 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, when ignited, burns vigorously and persistently
- Is an ignitable compressed gas
- Is an oxidizer



RCRA Corrosive Characteristic – D002

- Aqueous with $\text{pH} \leq 2.0$ or ≥ 12.5 ; OR
- Liquid that corrodes steel at $\frac{1}{4}$ inch (6.35 mm) per year



[22 CCR 66261.22](#)

RCRA Reactive Characteristic – D003

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 @ $\text{pH} 2 - 12.5$;

Capable of detonation or an explosive reaction; OR

Forbidden explosive (49 CFR 173.51)

[22 CCR 66261.23](#)

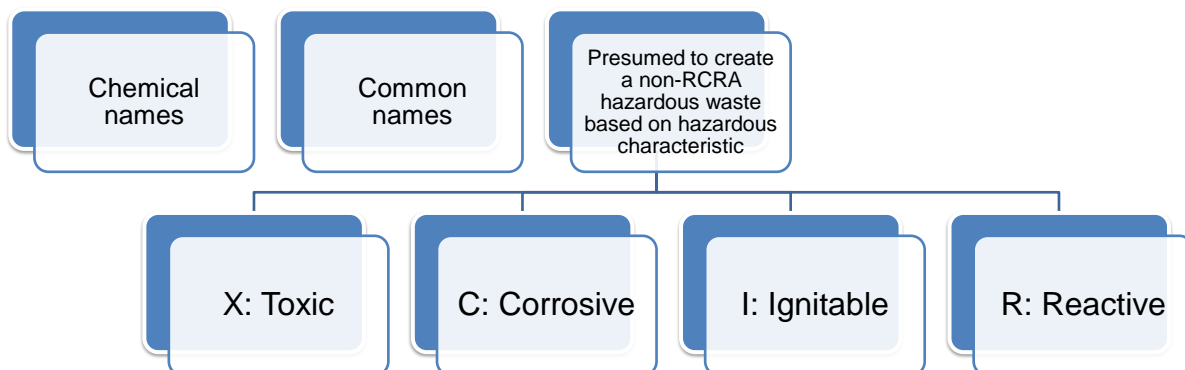
RCRA Toxic Characteristic – D004 – D043

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



[22 CCR 66261.24\(a\)\(1\)](#)

California Presumptive Lists



[22 CCR, Div. 4.5, Chap. 11, Article 5, Appendix X](#)

Non-RCRA Ignitable Characteristic

(Same as RCRA)

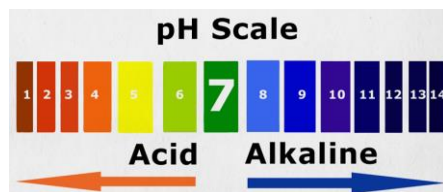
- Liquid (other than < 24% alcohol by volume) with a flash point < 140°F (60°C)
- A solid that can cause fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns vigorously and persistently
- Is an ignitable compressed gas
- Is an oxidizer



[22 CCR 66261.21](#)

Non-RCRA Corrosive Characteristic

- Aqueous with $\text{pH} \leq 2.0$ or ≥ 12.5
- Liquid that corrodes steel at $\frac{1}{4}$ inch (6.35 mm) per year
- Non-aqueous wastes that yield $\text{pH} \leq 2.0$ or ≥ 12.5 when mixed with an equivalent weight of water
- Non-liquids that corrode steel at $\frac{1}{4}$ inch (6.35 mm) per year when mixed with an equivalent weight of water



[22 CCR 66261.22](#)

Non-RCRA Reactive Characteristic

(Same as RCRA)

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)

[22 CCR 66261.23](#)

Non-RCRA Toxic

- Exceeds WET thresholds (TTLC or STLC for 20 inorganics [Table II] or 18 organics [Table III] – State's test to depict municipal landfill conditions);
- Oral LD₅₀ < 2,500 mg/kg;
- Dermal LD₅₀ < 4,300 mg/kg;
- Inhalation LC₅₀ < 10,000 ppm;
- Aquatic 96-hour LC₅₀ < 500 mg/L; OR
- Contains a listed carcinogen (16) ≥ 0.001% by weight

[22 CCR 66261.24\(a\)\(2-7\)](#)

Used Oil

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.



[HSC 25250.1](#)

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 with a flash point $< 100^{\circ}\text{F}$
- Oil with ≥ 5 ppm PCBs
- Oil with $> 1,000$ ppm halogens

[HSC 25250.1](#)

California Waste Codes

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

[22 CCR Appendix XII](#)

Exemptions

Contaminated containers [22 CCR 66261.7]

Spent lead-acid storage batteries [22 CCR 66266.80-81]

Universal wastes [22 CCR 66273]

Used oil filters & fuel filters [22 CCR 66266.130; HSC 25250.22]

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.



[22 CCR 66260.10](#)

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 present
- Facility must be maintained & operated to minimize possibility of a fire, explosion, or release



[40 CFR 262.16\(8\)\(i\)](#); [22 CCR 66265.176](#) & [66265.31](#)

Container Accumulation Areas

Accumulation Time Limits & Volumes

LQG	90 days; no limit for hazardous waste stored on-site
SQG	180 days (270 days if shipped \geq 200 miles); maximum 6,000 kg hazardous waste stored on-site
VSQG (previously CESQG)	No time limit until 100 kg of non-acute or non-extremely hazardous waste (180 days) or 1 kg of acute or extremely hazardous waste is reached (then 90 days)

[22 CCR 66262.34\(b\)\(1\)](#)

Container Accumulation Areas – Security LQGs

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



[22 CCR 66265.14](#)

Central Accumulation Areas

- Emergency equipment:
 - Internal communication devices
 - Fire extinguishers
 - Spill control equipment
- Equipment must be tested and maintained
- LQGs – inspection schedule must be implemented, records maintained



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

Container Management

- Hazardous waste containers must be marked with the following:
 - The words “Hazardous Waste”
 - Generator’s name and address
 - Contents
 - Physical state
 - Accumulation start date
 - Hazardous properties
- Labels must be legible and visible!

1 → **HAZARDOUS WASTE**

2 → **STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL.**
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY, OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL.

3 → **GENERATOR INFORMATION:**
NAME _____
ADDRESS _____ PHONE _____
CITY _____ STATE _____ ZIP _____
EPA IDENTIFICATION NO. / MANIFEST TRACKING NO. _____ / _____
EPA WASTE NO. _____ CA WASTE NO. _____ ACCUMULATION START DATE _____

4 → **CONTENTS, COMPOSITION:** _____

5 → _____

6 → **PHYSICAL STATE:** SOLID LIQUID **HAZARDOUS PROPERTIES:** CORROSIVE REACTIVITY OTHER _____

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

HANDLE WITH CARE!

[22 CCR 66262.34\(f\)](#)

Container Management



- 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

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

Container Management



- Aisle space between containers must allow for unimpeded access to containers
- Incompatible hazardous wastes cannot be placed in the same container

[40 CFR 262.16\(b\)\(8\)\(v\)](#); [22 CCR 66265.35](#)

Tank Management

- Hazardous waste tanks must be labeled with the following:
 - “Hazardous Waste”
 - Accumulation start date
 - Hazardous property(ies) of the waste



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

Tank Management – LQGs

- 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



[22 CCR 66265.193](#)

Used Oil

- Containers and tanks used to accumulate 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”



[22 CCR 66279.1\(b\)](#)

Container & Tank Management

Inspections

Containers (LQGs & SQGs) – weekly



Tanks (LQGs) – daily



Tanks (SQGs) – daily (no secondary containment) / weekly (secondary containment)

Satellite Accumulation Areas

- Satellite Accumulation Area requirements:
 - At or near any point of generation
 - Under the control of operator of 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...]*

[22 CCR 66262.34\(e\)](#)

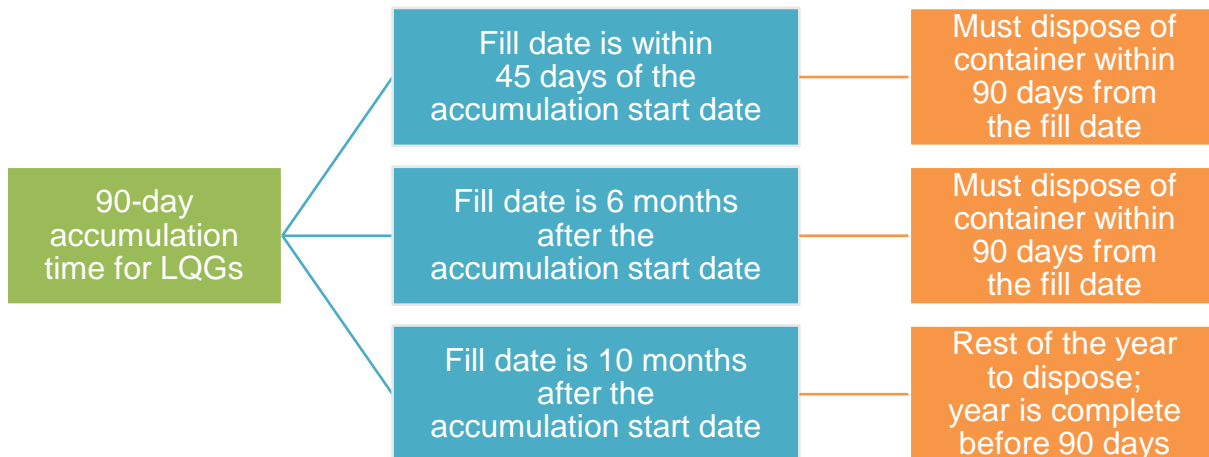
Satellite Accumulation Areas

- Limit of 55 gallons (1 qt for acute or extremely hazardous waste) per waste stream
- Must meet all container management standards (weekly inspections not required)
- Container can be stored on-site for no more than one year
- Container must be dated within three days of when it reaches capacity

A yellow label for a Workplace Accumulation Container. The label features a decorative border and contains the following text: 'WORKPLACE ACCUMULATION CONTAINER' at the top, 'HAZARDOUS WASTE' in large bold letters, 'FEDERAL LAW PROHIBITS IMPROPER DISPOSAL', 'IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY', and 'HANDLE WITH CARE!' at the bottom. There are also fields for 'Workplace Accumulation Area Name' and 'Date'.

[22 CCR 66262.34\(e\)](#)

Satellite Accumulation Areas



Exempt Wastes

Contaminated containers

Spent lead-acid storage batteries

Universal wastes

Used oil filters & fuel filters



Contaminated Containers (> 5 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 kept for three years



[22 CCR 66261.7](#)

Contaminated Containers (\leq 5 gallons)

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



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 for more than a ton) and marked with out-of-service date
 - Recycle records kept for three years



[22 CCR 66266.80-81](#)

Universal Waste

- Examples of universal waste:
 - Spent batteries
 - Spent lamps
 - Electronic devices (e-waste)
 - Mercury-containing devices
 - Aerosol cans (non-empty)
 - End-of-life solar panels

UNIVERSAL WASTE
CONTENTS _____
ACCUMULATION START DATE _____
SHIPPER _____
ADDRESS _____
CITY, STATE, ZIP _____

Universal Waste

Must be kept in a closed container that is compatible with the waste

Containers must be labeled: "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

[22 CCR 66273](#)

Drained Used Oil Filters & Fuel Filters

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



[22 CCR 66266.130](#); [HSC 25250.22](#)

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

Shipping Requirements

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)

[HSC 25218.4](#) & [25250.11-12](#)

Shipping Requirements

- e-Manifest system implemented on June 30, 2018
- Generators can still use paper manifest
- EPA form 8700-22 is the only manifest form that can be used

Shipping Requirements

- Generator is responsible for information 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)

The image shows a hazardous waste manifest form with a large 'VOID' watermark. The form is divided into several sections:

- Section 1 (Boxes 1-5):** Generator Information, including Name, Address, and EPA ID Number.
- Section 2 (Boxes 6-8):** Shipper/Carrier Information, including Name, Address, and EPA ID Number.
- Section 3 (Boxes 9-15):** Manifest Details, including Date, Quantity, and Description of waste.
- Section 4 (Boxes 16-17):** Manifest Acknowledgment, including Date and Signature of the transporter.
- Section 5 (Boxes 18-20):** Designated Facility Information, including Name, Address, and EPA ID Number.

Shipping Requirements

- 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)

The image shows a hazardous waste manifest form with a large 'VOID' watermark. The form is divided into several sections:

- Section 1 (Boxes 1-5):** Generator Information, including Name, Address, and EPA ID Number.
- Section 2 (Boxes 6-8):** Shipper/Carrier Information, including Name, Address, and EPA ID Number.
- Section 3 (Boxes 9-15):** Manifest Details, including Date, Quantity, and Description of waste.
- Section 4 (Boxes 16-17):** Manifest Acknowledgment, including Date and Signature of the transporter.
- Section 5 (Boxes 18-20):** Designated Facility Information, including Name, Address, and EPA ID Number.

Shipping Requirements

- Consolidated shipments:
 - 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 generated for three years from date of shipment

[HSC 25160.2](#)

Consolidated Manifest – Authorized Waste Streams

- Used oil
- Contents of an oil/water separator
- Solids contaminated with used oil
- Brake fluid
- Antifreeze
- Antifreeze sludge
- Parts-cleaning solvents
- Asbestos & asbestos-containing materials
- Inks from the printing industry
- Chemicals and laboratory packs collected from K-12 schools
- Filters from dispensing pumps for diesel and gasoline fuels
- Hydroxide sludge (contaminated solely with metal from 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
- Retail hazardous waste collected from retailers
- Absorbents contaminated with wastes on this list

[HSC 25160.2](#)

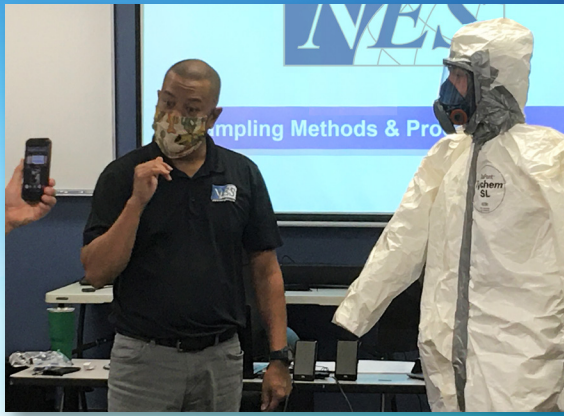
Thank You

Questions? Contact us at:

NES, Inc.
1141 Sibley Street
Folsom, CA 95630



NESglobal.net
916-353-2360
800-637-2384



NES VIRTUAL TRAINING

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We have all learned how challenging and disruptive it can be to live and work through a pandemic. As a proud leader in environmental health & safety compliance, *we immediately recognized the importance of adapting our services to protect employees* who attend NES training classes as well as our own staff.

We transitioned programs that had traditionally only been presented in person to *webinars consisting of a live PowerPoint display and instructor-led video feed to facilitate interactivity and demonstrations*, and we set to work improving upon and adding to our existing library of self-paced online training courses. Program materials are provided as electronic downloads, and physical materials can be mailed to participants for no extra charge.

For many, *virtual training has come to be the preferred format over traditional in-person classes*, offering participants the opportunity to learn from the comfort of their homes or office workspaces. As such, we will continue to offer virtual training as a staple training delivery format into the indefinite future!

Many open enrollment NES programs, and those that have historically been customized to clients' individual needs and provided on-site at their facilities, are now being presented as webinars. These programs include, but are not limited to:

- 40- & 24-Hour HAZWOPER
- 8-Hour HAZWOPER Refresher
- Hazardous Waste Management
- Hazardous Materials Management
- DOT Hazmat Employee
- Uniform Hazardous Waste Manifest
- IMDG & IATA Dangerous Goods
- Cal/OSHA 30-Hour General Industry
- Bloodborne Pathogens
- Globally Harmonized System
- Hazard Communication
- Respiratory Protection
- Heat Illness Prevention
- Fall Protection
- Hearing Protection
- & More!

Are you an REHS?

As a CDPH-accredited firm, NES course hours convert 1:1 to contact hours – even virtual training!



NES Self-Paced Online Training

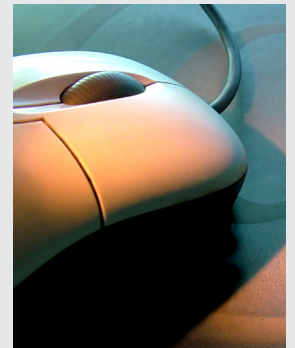
Self-paced online programs offered through our Learning Management System (LMS) allow for progression through the course content at the learner's own pace. Student materials are available to download directly from the program, and students can email an NES instructor with questions at any time!

To view our catalog of web-based courses (both self-paced online programs and live webinars), check out our program listings at nesglobal.net/online-courses.

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- Hazardous Waste Management
- Universal Waste Management
- UST Owner/Operator
- DOT Hazmat Employee
- Uniform Hazardous Waste Manifest
- Respiratory Protection
- Hazardous Materials Business Plans / CERS
- Confined Space Awareness
- Bloodborne Pathogens
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