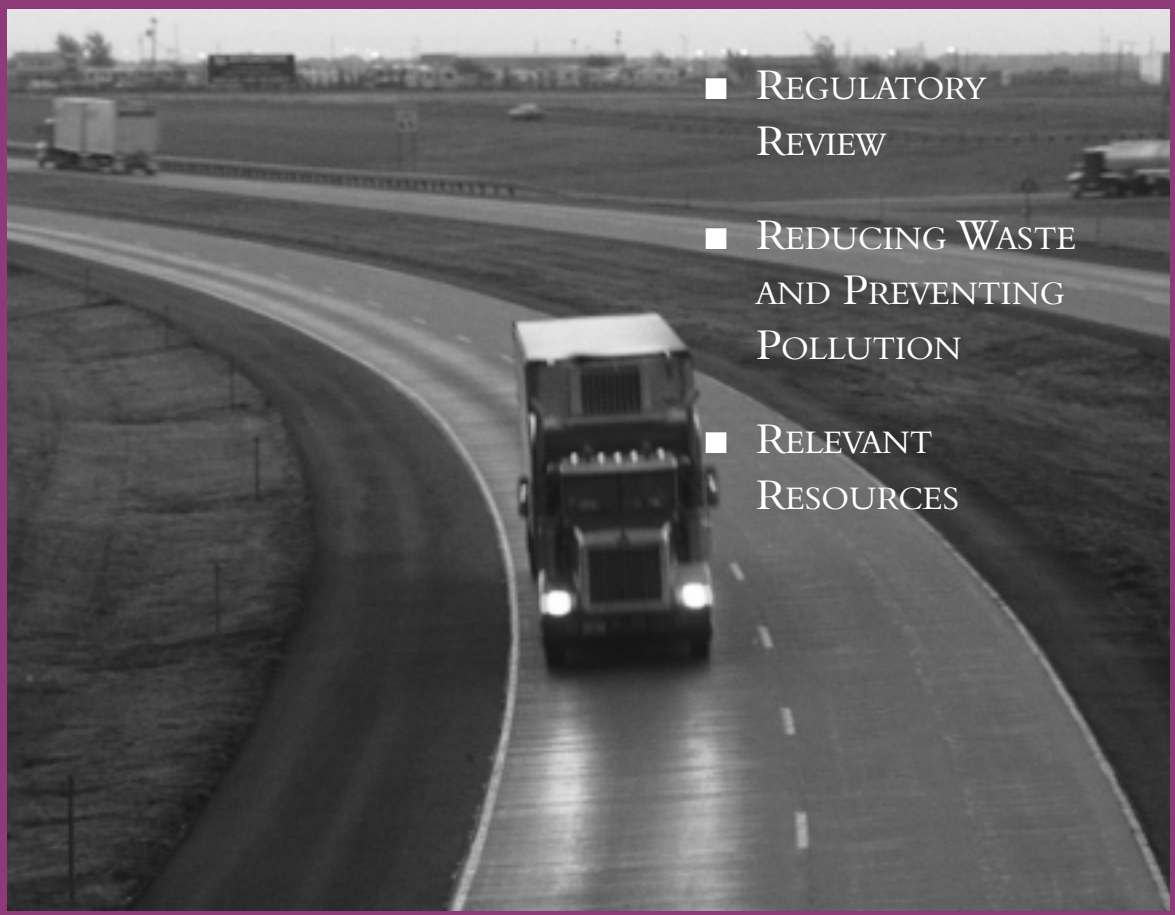
RCRA IN FOCUS

MOTOR FREIGHT & RAILROAD TRANSPORTATION



- Regulatory Review
- Reducing Waste and Preventing Pollution
- Relevant Resources

EPA

United States Environmental Protection Agency

Solid Waste and Emergency Response (5305W)

EPA530-K-00-003
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www.epa.gov/osw

FOR MORE INFORMATION CALL:

RCRA Hotline

U.S. Environmental Protection Agency
800 424-9346 or TDD 800 553-7672.
In the Washington, DC, area: 703 412-9810
or TDD 703 412-3323.

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Foreword

If you are involved with the motor freight and railroad transportation industries, your facility probably generates hazardous waste. That means you are regulated by the U.S. Environmental Protection Agency (EPA) under a federal law called the Resource Conservation and Recovery Act (RCRA). Under RCRA, you are required to follow certain procedures when generating, storing, transporting, treating, or disposing of hazardous waste. *RCRA in Focus* provides an overview of the federal hazardous waste regulations you are required to follow and wastes that are likely to be hazardous in your business. It also provides recycling and pollution prevention options to help you decrease the amount of hazardous waste you generate.

Frequently Asked Questions About RCRA

What Is RCRA?

RCRA is a federal law that encourages environmentally sound methods for managing commercial and industrial waste as well as household and municipal waste. It regulates facilities that generate, transport, treat, store, or dispose of hazardous waste. The vast majority of motor freight and railroad transportation facilities are considered hazardous waste generators, rather than treatment, storage, and disposal facilities (TSDFs), which are subject to more rigorous regulations.

The term "RCRA" is often used interchangeably to refer to the law, the regulations, and EPA policy and guidance. The *law* describes the waste management program mandated by Congress that gave EPA authority to develop the RCRA program. EPA *regulations* carry out the Congressional intent by providing explicit, legally enforceable requirements for waste management. EPA *guidance documents* and *policy directives* clarify issues related to the implementation of the regulations.

All of the RCRA hazardous waste regulations can be found in the *Code of Federal Regulations* (CFR), Title 40, Parts 260 to 279. The CFR can be purchased through the U.S. Government Printing Office (GPO).

Who Is Regulated?

Any motor freight or railroad transportation facility that generates hazardous waste is potentially subject to RCRA. You must conduct tests required by the regulations or use your knowledge of and familiarity with the waste you generate to determine whether it is hazardous waste (as opposed to other types of waste). You might be subject to substantial civil and criminal penalties if you fail to properly or completely identify hazardous waste generated by your business.

What Is Hazardous Waste?

To be considered hazardous waste, a material first must be classified as a solid waste. EPA defines solid waste as garbage, refuse, sludge, or other discarded material (including solids, semisolids, liquids, and contained gaseous materials). If your waste is considered solid waste, you must then determine if it is hazardous waste. Wastes are defined as hazardous by EPA if they are specifically named on one of four lists of hazardous wastes (listed wastes) or if they exhibit one of four characteristics (characteristic wastes). Each type of RCRA hazardous waste is given a unique hazardous waste code using the letters D, F, K, P, or U and three digits (e.g., D001, F005, P039). See pages 10 to 14 for additional information on motor freight and railroad transportation waste codes.

Listed Wastes. Wastes are listed as hazardous because they are known to be harmful to human health and the environment when not managed properly, regardless of their concentrations. The lists include the following three types of waste:

- **Non-Specific Source Wastes.** These are material-specific wastes, such as solvents, generated by several different industries. Waste codes range from F001 to F039. Examples include ethyl benzene, methylene chloride, and toluene.
- **Specific Source Wastes.** These are wastes from specifically identified industries. Waste codes range from K001 to K161. Motor freight and railroad transportation facilities typically do not generate specific source wastes.
- **Discarded Commercial Chemical Products.** Off-specification products, container residuals, spill residue runoff, or active ingredients that have spilled or are unused and that have been, or are intended to be, discarded. Waste codes for acutely hazardous chemicals range from P001 to P205 and U001 to U411. An example is U159, unused methyl ethyl ketone.

STATE REQUIREMENTS

You may be regulated both by your state hazardous waste agency and EPA. RCRA allows states to receive legal permission, known as authorization, to implement the RCRA hazardous waste program. You must always contact your state authority to determine which state requirements apply to your business.

To operate a hazardous waste program, a state's regulations must be consistent with, and at least as stringent as, the federal program. Some states adopt more stringent requirements for facilities handling hazardous waste, which are considered part of the authorized program.

MORE QUESTIONS?

Call the RCRA Hotline at 800 424-9346 or TDD 800 553-7672 for additional information about RCRA rules and regulations. In the Washington, DC, area, call 703 412-9810 or TDD 703 412-3323.

AM I REGULATED BY RCRA OR SUPERFUND?

RCRA regulates the treatment, storage, and disposal of hazardous waste being generated now and in the future. Superfund was created to pay for the identification, inspection, investigation, ranking, and cleanup of abandoned or uncontrolled hazardous waste sites that people responsible for contamination are unable or unwilling to clean up. Call the RCRA Hotline for more information.

HOW IS USED OIL HANDLED?

RCRA contains special provisions for the management of used oil destined for recycling. These management standards apply to oil refined from crude oil or any synthetic oil that has become contaminated through use by chemical or physical impurities. Used oil that will be recycled or reused is subject to special management standards, rather than the hazardous waste standards, unless it is treated as a waste (i.e., you decide to send the used oil for treatment and disposal rather than recycling). The used oil regulations can be found in 40 CFR 279.

Frequently

Characteristic Wastes. Even if your waste does not appear on one of the hazardous waste lists, it still might be regulated as hazardous waste if it exhibits one or more of the following characteristics:

- **Ignitability**. Ignitable wastes create fires under certain conditions or are spontaneously combustible, and have a flash point less than 60°C (140°F). One example is spent solvents from motor freight and railroad transportation operations. The waste code for these materials is D001.
- **Corrosivity**. Corrosive wastes are acids or bases that are capable of corroding metal containers, such as storage tanks, drums, and barrels. Acidic waste from motor freight and railroad transportation surface preparation is a good example. The waste code for these materials is D002.
- **Reactivity**. Reactive wastes are unstable under "normal" conditions. They can cause explosions, toxic fumes, gases, or vapors when mixed with water. Examples include lithium-sulfur batteries and explosives. The waste code for these materials is D003.
- **Toxicity**. Toxic wastes are harmful or fatal when ingested or absorbed. When toxic wastes are disposed of on land, contaminated liquid might drain (leach) from the waste and pollute ground water. Toxicity is defined through a laboratory procedure called the Toxicity Characteristic Leaching Procedure (TCLP). Certain chemicals in pigment wastes generated from motor freight and railroad transportation staining and painting are examples of potential toxic wastes. The waste codes for these materials range from D004 to D059.

How Are Generators Regulated?

If your motor freight or railroad transportation business generates hazardous waste, you must manage it according to regulations for your specific generator type. Hazardous waste generators are divided into three categories, according to how much they generate in a calendar month:

- **Large Quantity Generators (LQGs)**. LQGs generate greater than or equal to 1,000 kg (approximately 2,200 lb) of hazardous waste per month or greater than 1 kg (approximately 2.2 lb) of acutely hazardous waste per month.
- **Small Quantity Generators (SQGs).** SQGs generate greater than 100 kg (approximately 220 lb) but less than 1,000 kg (approximately 2,200 lb) of hazardous waste per month.
- **Conditionally Exempt Small Quantity Generators (CESQGs)**. CESQGs generate less than or equal to 100 kg (approximately 220 lb) of hazardous waste per month and less than or equal to 1 kg (approximately 2.2 lb) of acutely hazardous waste per month.

Some states do not recognize the CESQG class. Contact your state environmental agency to find out if the CESQG status is recognized. **To find your appropriate state contact, call the RCRA Hotline at 800 424-9346.**

Under the federal RCRA requirements, your generator status might change from one month to the next as the quantity of waste you generate changes. State requirements vary widely. You must comply with whichever standard is applicable for a given month. In many cases, small businesses that fall into different generator categories at different times choose to always satisfy the more stringent requirements (usually state requirements) to simplify compliance. Generators must "count" the amount of waste generated, which involves adding up the total weight of all quantities of characteristic and listed waste generated at a particular facility. Certain wastes, such as those that are reclaimed or recycled continuously on site, may not be counted for the monthly total calculation under the federal regulations.

Do Exclusions Exist?

The RCRA regulations contain many exclusions for wastes and waste management practices that are not considered to be hazardous. Several exclusions and exemptions pertain specifically to the motor freight and railroad transportation industry. Some states, however, do not recognize the federal exclusions.

Exclusions and Exemptions	Description
Domestic Sewage Exclusion	Mixtures of domestic sewage and other wastes that pass through a sewer system to a publicly owned treatment works (POTW) for treatment are excluded. Generators are encouraged to contact their local POTW to find out what regulations apply.
"Closed Loop" Recycling Exclusion	Wastes that are reclaimed and returned for use to the original process in which they were generated are generally excluded as long as: 1) only tank storage is used; 2) the process is enclosed (e.g., hard piped); 3) controlled flame combustion is not used; and 4) the wastes are not stored for more than 12 months prior to reclamation.
Scrap Metal Recycling Exclusion	Scrap metals being recycled are generally exempt from the hazardous waste management regulations.

How Is Antifreeze Handled?

While no special federal requirements exist at present for the management and disposal of used antifreeze, generators are required to determine whether used atifreeze from vehicles is hazardous or nonhazardous. Used antifreeze has the potential to be hazardous due to potentially high pH or lead levels. Generators must test their waste or rely upon their knowledge of the waste to make a determination about whether it meets the definition of a hazardous waste. If it is hazardous, it must be handled like any other hazardous waste.

The Life Cycle of a Typical Motor Freight & Railroad Transportation Waste

You've just finished cleaning engine parts and are left with solvent wastes that must be managed according to RCRA. You generate a small quantity of this type of waste each month. You have decided to reclaim solvents onsite using a distillation unit.

This example details a typical waste life cycle at a motor freight, railroad transportation, or tank cleaning facility. This life cycle presents the hazardous waste management requirements for the generator from generation to shipment off site.

The example given is of an SQG motor freight terminal generating hazardous waste spent solvent solutions. Other waste life cycles could be different depending on the waste, whether onsite treatment will occur, the type of waste management units used, and the facility generator status.

1 IDENTIFY WASTE
By running tests or using your knowledge of the waste, identify whether your solvent waste is hazardous. Based on these analyses, determine the appropriate waste code for your solvents; in this case, for example, it could be D001, D035, D037, D039, D040, and F001 through F005. Keep all records of test results, waste analyses, and other determinations made in the hazardous waste identification process for 3 years.

2 COUNT WASTE
Next, determine how much hazardouse waste you have produced in a calender month. Do not count solvent placed directly into a solvent recovery still. Count the solvent still bottoms when they are removed from the still, however.

10 PREPARE HAZARDOUS WASTE MANIFEST
Send a manifest along with all hazardous waste sent off site to a TSDF. Be sure to receive a completed copy of the manifest from the TSDF, and keep a copy on site for 3 years. The manifest contains a certification stating that you have a program in place to reduce the volume and toxicity of waste generated to the degree economically practicable, and that you have selected a treatment, storage, and disposal method currently available that minimizes current and future threats from the waste.

11 PREPARE APPROPRIATE NOTIFICATION AND CERTIFICATION
Ensure that all hazardous waste sent off site for treatment, storage, and disposal is accompanied by appropriate notifications and certifications (initial shipments only).

12 SEND WASTE OFF SITE FOR TREATMENT, STORAGE, OR DISPOSAL
Using a registered hazardous waste transporter, send the waste to a RCRA hazardous waste TSDF accompanied by the appropriate manifest. You can choose from any permitted or interim status TSDF. Options for solvents include a hazardous waste incinerator that will landfill the incinerator ash, a hazardous waste fuel blender who will blend the solvents with other wastes and then burn them for energy recovery in a boiler or industrial furnace, or a facility that will recycle the solvents.

DETERMINE GENERATOR STATUS

Add together all hazardous wastes to determine your generator status. In this case, you have produced less than 1,000 kg (2,200 lb) but greater than 100 kg (220 lb) of still bottoms from your solvent recovery unit, which means you are an SQG in this calender month period. If the amount of waste you generate fluctuates from month to month, you may wish to satisfy the more stringent requirements each month to simplify compliance.

OBTAIN EPA IDENTIFICATION NUMBER

To identify your business as a hazardous waste generator, obtain an EPA identification number by submitting Form 8700-12 (Notification of Regulated Waste Activity), which is obtained from your state hazardous waste agency. Remember, your state requirements might be different.

PLACE WASTE IN ACCUMULATION UNIT

When the waste is generated, place it in an appropriate accumulation unit (e.g., a tank or container) that meets the design and management requirements for that type of unit. Mark accumulation containers with the date the waste was placed in the unit; mark accumulation tanks and containers with the words "Hazardous Waste." Do not accumulate wastes onsite for longer than the allowed accumulation times (180 days, or 270 days if wastes must be shipped more than 200 miles).

IMPLEMENT SQG EMERGENCY PROCEDURES REQUIREMENTS

Check to be sure that emergency preparedness and prevention requirements are met. These include identifying an emergency response coordinator and notifying local emergency response authorities. Post emergency response information near the telephone.

IMPLEMENT PERSONNEL TRAINING

Be sure that your personnel are familiar with hazardous waste handling and emergency procedures.

CONTRACT WITH HAZARDOUS WASTE TRANSPORTER

To send waste off site to a TSDF, contract with a registered hazardous waste transporter. To locate a reliable transporter, contact a colleague to obtain a reference.

FOLLOW U.S. DEPARTMENT OF TRANSPORTATION (DOT) PACKAGING STANDARDS

Before shipping waste off site for treatment, storage, or disposal, package, label, and mark waste containers in accordance with all applicable DOT requirements. For more information, call the DOT Hotline at 800 467-4922.

Requirements for Regulated Motor Freight & Railroad Transportation Facilities

The following table presents an overview of the federal RCRA regulatory requirements for motor freight and railroad transportation facilities that are either LQGs, SQGs, or CESQGs. As noted, your state might have different or more stringent requirements.

RCRA REGULATORY REQUIREMENTS

REGULATORY REQUIREMENT	LQGS	SQGS	CESQGS	IMPLEMENTATION EXPLANATION
EPA Identification Number	✓	✓		• Obtain an EPA identification number for each facility within your company. EPA and states use this 12-character identification number to track hazardous waste activities. • Obtain an EPA identification number by submitting Form 8700-12 (Notification of Regulated Waste Activity), which is provided by your state hazardous waste agency. This is a one-time notification. Contact your state regarding the need for renotification if circumstances at your facility change.
Hazardous Waste Identification	✓	✓	✓	• Identify whether you generate hazardous waste to determine if you are subject to the RCRA hazardous waste regulations. Test procedures are described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, SW-846" or tests can be performed by a local laboratory.
Used Oil Standards	✓	✓	✓	• If you generate used oil, you are subject to a separate set of management standards from the hazardous waste management standards if the used oil will be recycled. If the used oil is to be treated and disposed of, perform the hazardous waste identification step listed above.
Waste Counting	✓	✓	✓	• Determine how much hazardous waste you generate to determine your generator status.
Accumulation Area	✓	✓		• You can accumulate waste in a "satellite accumulation area" with minimal regulatory burden. This area must be at or near the point of generation and under the control of the operator of the process generating the waste. • There is no time limit on accumulation in the satellite accumulation area for waste under 55 gallons. • There is a 55-gallon accumulation limit in the satellite accumulation area. Excess waste beyond the 55-gallon limit must be moved from the satellite accumulation area within 3 days. • You must accumulate the waste in containers. • Waste containers must be marked with the words "Hazardous Waste" or other words that identify their contents. • This waste is exempt from other accumulation provisions while in the satellite accumulation area.
Other Accumulation Areas (Time and Quantity Limits)	✓	✓	✓	• If waste accumulation does not meet the requirements for satellite accumulation, it is subject to more stringent requirements. LQGs can accumulate waste on site for up to 90 days without a permit. SQGs can accumulate waste for 180 days, or 270 days if the SQG must transport the waste more than 200 miles to a destination facility. • Begin counting accumulation time when waste is first placed in the accumulation unit. • Waste must be put in an exempt unit, recycled, or sent off site within the proper time period stated above. • If an LQG accumulates wastes beyond the allotted time period, the facility is fully subject to the requirements of a hazardous waste storage facility unless granted an exemption. SQGs cannot accumulate more than 6,000 kg of hazardous waste at any time. • CESQGs cannot accumulate more than 1,000 kg of hazardous waste, more than 1 kg of acutely hazardous waste, or 100 kg of spill residue from acutely hazardous waste at any time.
Storage Unit Requirements	✓	✓		• Accumulate waste only in units that are in good condition, remain closed except when adding or removing waste, are inspected at least weekly, are compatible with the types of waste, and meet special standards for ignitable waste and incompatible waste. • LQGs can use accumulation tanks and containers that have been assessed for integrity, have a secondary containment system, and are inspected each operating day. SQGs can use certain accumulation tanks as well. • LQGs can use containment buildings as well. • For all units, the date that the accumulation period begins must be clearly marked and visible on each container. All containers and tanks must be clearly marked or labeled with the words "Hazardous Waste" and accumulation units must be shut down and closed permanently in accordance with standards at the end of the unit life. • LQGs and SQGs can treat their waste without a RCRA storage permit in accumulation units that meet standards.
Air Emissions	✓			• LQGs must comply with organic air emissions requirements.
Preparedness and Prevention	✓	✓		• LQGs and SQGs must comply with preparedness and prevention requirements, including the following: - An adequate internal alarm or communications system. - A device capable of summoning emergency personnel

				- Portable fire control equipment. - Adequate water pressure to operate fire control systems. - Adequate testing and maintenance of all emergency systems. - Access to communication or alarm systems during waste handling activities. - Adequate aisle space for emergency response. - An arrangement with local emergency response authorities.
Contingency Plan	✓	✓		• LQG facilities must prepare a facility contingency plan in accordance with regulations. • The contingency plan must be designed to minimize hazards from fires, explosions, or any unplanned release of hazardous waste or constituents. • A copy of the contingency plan must be kept on site and an additional copy must be submitted to all local emergency services providers. • LQGs and SQGs must have an emergency coordinator on site or on call at all times to respond to emergencies. • Emergency response information must be posted next to the telephone. • In the event of a fire, explosion, or release that could threaten human health outside the facility, or when a spill has reached surface water, the emergency coordinator must notify the National Response Center at 800 424-8802.
Personnel Training	✓	✓		• LQGs must have a personnel training program in accordance with regulatory standards. - Training must instruct facility personnel about hazardous waste management procedures and emergency response. - Training must be completed within 6 months from the applicability of requirements. - The facility must undertake an annual review of initial training. • SQGs must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relevant to their responsibilities.
DOT Packaging	✓	✓	✓	• Before being transported, waste must be packaged, labeled, and marked in accordance with applicable DOT requirements. Call the DOT hazardous materials information line at 202 366-4488 for information.
Offsite Management of Waste	✓	✓	✓	• Hazardous waste sent off site for handling may only be sent to a hazardous waste TSDF or recycling facility unless otherwise exempt. • CESQGs: See onsite management of waste below.
Onsite Management of Waste			✓	• CESQGs may either treat waste on site, if it qualifies as one of the following types of facilities, or ensure delivery of waste to one of the following types of facilities: permitted RCRA TSDF; interim status TSDF; state-authorized to handle hazardous waste; permitted, licensed, or registered by state to handle municipal solid waste according to standards; permitted, licensed, or registered by state to handle nonmunicipal waste; if managed after January 12, 1998, facility is permitted, licensed, or registered by state to handle nonhazardous waste in accordance with standards; facility beneficially uses or reuses, or legitimately recycles or reclaims its waste; facility treats its waste prior to beneficial use, reuse, or legitimate recycling or reclamation; or a universal waste handler in accordance with standards.
Manifest	✓	✓		• Hazardous waste sent off site must be accompanied by a manifest, a multipage form that documents the waste's progress through treatment, storage, and disposal. It can usually be obtained from your state agency. • The manifest must have enough copies to provide the generator, each transporter, and the destination facility with one copy for their records and a second copy to be returned to the generator after completion by the destination facility operator. • SQGs that have a contractual agreement with a waste reclaimer that specifies the types and frequencies of shipments do not need to manifest the wastes if they retain a copy of the agreement in their files.
Land Disposal Restrictions Notification	✓	✓		• Waste must meet certain treatment standards under the Land Disposal Restrictions program when waste is land disposed. Waste must be treated to reduce the hazardous constituents to levels set by EPA or the waste must be treated using a specified technology. All waste sent off site for treatment, storage, and disposal must be accompanied by appropriate LDR program notifications and certifications. There are no required forms, but these papers must indicate whether or not wastes meet treatment standards or whether the waste is excluded from the definition of hazardous or solid waste, or is otherwise exempt.
Hazardous Waste Minimization	✓	✓		• To encourage generators to produce less hazardous waste, LQGs are required to have a program in place to reduce the volume and toxicity of waste generated to the degree economically practicable, and must select a currently available treatment, storage, or disposal method that minimizes present and future threats. • LQGs and SQGs must sign a certification of hazardous waste minimization on the manifest. • SQGs must make a good faith effort to minimize waste generation and to select the best available waste management method that they can afford.
Biennial Report	✓			• LQGs must submit biennial reports of waste generation and management activity by March 1 of every even-numbered year. EPA, other agencies, and the public use this information to track trends in hazardous waste management.
Recordkeeping	✓	✓		• LQGs must maintain personnel training records until the facility closes. • LQGs must keep copies of each biennial report for 3 years. • LQGs and SQGs must keep a copy of each manifest for 3 years. • LQGs and SQGs must keep records of test results, waste analyses, and other hazardous waste determinations for 3 years.

Reduce or Minimize the Hazardous Wastes You Generate

The following examples show hazardous wastes typically generated by the motor freight and railroad transportation industry, including shipping and leasing companies that own and clean tank cars, and the tank car cleaning industry. The examples provide suggestions for how to recycle, treat, or dispose of hazardous waste according to federal regulations.

Recycling and pollution prevention measures can significantly reduce your regulatory burden and might save your facility considerable money. This section presents information on hazardous wastes typically generated by various motor freight and railroad transportation processes and provides suggestions for how to recycle them or implement pollution prevention measures. Some tank cleaning operations, for example, have self-contained small parts washing systems that do not drain to the sewer. These systems might include a solvent dispenser, wash basin, and waste solvent collection system. Hazardous waste generated by these commercial operations may be returned to the supplier who redistills the cleaning fluid and disposes of the remaining hazardous waste. Switching to nonhazardous aqueous-based solvents for small scale cleaning operations, however, will reduce the amount of hazardous waste you generate. Solvent recycling can also decrease hazardous waste production from small parts cleaning.

Only the federal hazardous waste codes are provided here. Your state might have different codes for some waste streams. You should check with your state hazardous waste authority for additional waste codes and requirements.

PROCESS	Unloading and Cleaning Tank Trucks and Rail Cars
Wastes Generated	Acid or alkaline cleaners, ethyl benzene, residuals (heels) from shipment of product or hazardous waste, residues from wastewater treatment, spent solvents, volatile organic emissions, and wastewater.
Possible RCRA Waste Codes	D001 (residuals, solvent wastes), D002 (cleaners, residuals, wastewaters), F003 (ethyl benzene), F and K waste codes (residuals from shipment of F- and K-listed waste), and P and U waste codes (residuals from shipment of commercial chemical products).
Potential Recycling, Treatment, and Disposal Methods	■ Reclaim solvents in an onsite distillation unit for reuse or send for reclamation. ■ Reuse wastewater solutions as the first rinse of highly contaminated tanks or cars. ■ Sell heels/residuals of commercial chemical products (CCPs) to a reclamation facility. ■ Use alkaline heels/residuals to neutralize acid wastes. ■ Use detergent CCP heels/residuals in future cleaning operations. ■ Treat aqueous heels/residuals and wastewaters in a wastewater treatment unit regulated by the Clean Water Act. ■ Package and label hazardous wastes for shipment using a hazardous waste transporter to a hazardous waste TSDF.
Potential Pollution Prevention Methods	■ Manage heels/residuals separately from each other to facilitate recycling. ■ Switch from washing processes using solvents or caustic solutions to steam cleaning methods, nonhazardous detergents, or aqueous solvents. ■ Install a closed washing and rinsing system to recycle wastewaters, reduce water usage, and limit volatile organic air emissions. ■ Use suction or vacuum pumps and squeegee the walls of tanks or cars to remove heels/residuals more efficiently and reduce contamination of wastewaters. ■ Wash trucks or rail cars more frequently to prevent residue accumulation that could make wash waters hazardous.

	■ Minimize the amount of water used in washing operations. ■ Keep solvent containers covered to prevent product volatilization. ■ Use a first in, first out policy in storage areas and computerize inventory control to prevent materials from expiring.
PROCESS	**Degreasing, Parts Washing, Rust Removal**
Wastes Generated	Ammonium hydroxide, benzene, chromic acid, hydrobromic acid, hydrochloric acid, hydrofluoric acid, methylene chloride, mineral spirits, nitric acid, oil or grease, petroleum distillates, phosphoric acid, potassium hydroxide, rags containing solvents or grease, sodium hydroxide, sulfuric acid, toluene, toxic metals, volatile organic constituents, wastewaters, and sludges.
Possible RCRA Waste Codes	D001 (benzene, methylene chloride, mineral spirits, oil or grease, petroleum distillates, toluene, used rags), D002 (ammonium hydroxide, chromic acid, hydrobromic acid, hydrochloric acid, hydrofluoric acid, nitric acid, phosphoric acid, potassium hydroxide, sodium hydroxide, sulfuric acid, wastewaters), D007 (wastewaters, rags, contaminated solvents), D008 (contaminated solvents, rags, wastewaters), D018 (contaminated solvents, wastewaters), F001 or F002 (methylene chloride), and F005 (benzene, toluene).
Potential Recycling, Treatment, and Disposal Methods	■ Reclaim solvents in an onsite distillation unit for reuse or contract to have the solvents shipped off site for recycling. ■ Contact state or regional EPA office to determine the status of rags in your state. ■ Treat wastewaters in a wastewater treatment unit regulated by the Clean Water Act. ■ Package and label hazardous wastes for shipment using a hazardous waste transporter to a hazardous waste TSDF.
Potential Pollution Prevention Methods	■ Replace solvent- and caustic-using parts washers with ultrasonic part washing systems, bake-off ovens, or detergent baths. ■ Substitute aqueous solutions for organic solvents. ■ Keep vehicles in good repair to prevent oil leaks. ■ Install drip racks over solvent sinks and increase drip time to reduce air emissions. ■ Apply solvents with a method other than spraying to avoid air emissions. ■ Close solvent containers and keep solvent sinks covered to prevent product volatilization. ■ Use dry precleaning methods such as wire brushing. ■ Use contaminated washing solutions as prerinse for dirty parts.
PROCESS	**Painting**
Wastes Generated	Alcohols, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, mineral spirits, paint pigments, petroleum distillates, volatile organic compounds, wastewater, and xylene.
Possible RCRA Waste Codes	D001 (alcohols, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, mineral spirits, petroleum distillates, xylene), D007 (pigments), D008 (pigments), D035 (methyl ethyl

	ketone), F001 or F002 (methylene chloride), F003 (methyl isobutyl ketone, xylene), and F005 (methyl ethyl ketone, toluene).
Potential Recycling, Treatment, and Disposal Methods	■ Reclaim solvents in an onsite distillation unit for reuse or send for reclamation. ■ Treat wastewaters in a wastewater treatment unit regulated by the Clean Water Act. ■ Dispose of paint sludges and cleaning wastes from paint stripping operations properly if hazardous solvents or other hazardous stripping materials are used. ■ Package and label hazardous wastes for shipment using a hazardous waste transporter to a hazardous waste TSDF.
Potential Pollution Prevention Methods	■ Prepare smaller test batches of coatings. ■ Use tarps or cloths to prevent paint mists from contaminating air, water, or soil when painting outside. ■ Do not allow paint or paint wastes into your facility's drainage system, unless the system is designed and permitted to treat such wastes. ■ Switch from hazardous organic-based paints to aqueous-based paints. ■ Use all of the paint in a container. Use leftovers as undercoatings or primers. ■ Replace finishes needing solvents with less hazardous products, such as water-borne coatings. ■ Install biofiltration systems to filter exhaust from spray areas. ■ Provide training for spray gun operators in overspray-reduction techniques. ■ Install high-volume, low-pressure, or electrostatic sprayers to decrease overspray. ■ Replace solvent-based stripping with mechanical methods such as plastic blast media systems. ■ Cover solvent containers to prevent product volatilization. ■ Clean spray guns and equipment frequently for efficient paint transfer. ■ Use solvent-based coatings with high levels of solids to reduce air emissions. ■ Purchase paint in recyclable or returnable containers to reduce disposal costs. ■ Contact a waste exchange program. ■ Follow label directions for shelf-life and storage conditions to avoid having to dispose of unused product.
PROCESS	**Spray Gun, Spray Booth, and Brush Cleaning**
Wastes Generated	Acetone, alcohols, isopropanol, methanol, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, mineral spirits, paint pigments, petroleum distillates, toluene, and volatile organic constituents.
Possible RCRA Waste Codes	D001 (acetone, alcohols, isopropanol, methanol, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, mineral spirits, petroleum distillates, toluene), D007 (pigments), D008 (pigments), D035 (methyl ethyl ketone), F001 or F002 (methylene chloride), F003 (acetone, methanol, methyl isobutyl ketone), and F005 (methyl ethyl ketone, toluene).
Potential Recycling, Treatment, and Disposal Methods	■ Reuse cleanup solvent until it is spent, then recycle on site or send out for reclamation. ■ Collect paint containers and residues for recycling. ■ Package and label hazardous wastes for shipment using a hazardous waste transporter to a hazardous waste TSDF.

Potential Pollution Prevention Methods	■ Spray paint in large batches to reduce the number of times the gun must be cleaned. ■ To minimize spills, clean spray guns by immersing only the front end in solvent. ■ Clean spray guns by passing solvent through gun and into a container, rather than spraying cleaning solvent into the air. ■ Cover solvent containers to prevent product volatilization. ■ Filter spray booths using washable metal filters instead of disposable filters. ■ Wash spray booth filters for reuse. ■ Catch overspray in a trough for collection and distillation rather than using disposable absorbent material. ■ Use a first in, first out policy in storage areas and computerize inventory control to prevent materials from expiring.
PROCESS	**Parts Replacement**
Wastes Generated	Batteries (lead acid, nickel cadmium, nickel, iron, carbonaite), scrap metal, and used tires.
Possible RCRA Waste Codes	D002 (battery acid), D006 (cadmium), and D008 (lead).
Potential Recycling, Treatment, and Disposal Methods	■ Sell scrap metal to a recycling facility. ■ Collect batteries for reclamation. ■ Have scrap tires retreaded or send for recycling. ■ Recycle batteries on site, through the supplier, or at a local recycling facility. ■ Package and label hazardous wastes for shipment using a hazardous waste transporter to a hazardous waste TSDF.
Potential Pollution Prevention Methods	■ To facilitate battery recycling, sort and label batteries, store in a manner that protects the batteries and prevents leaks, and inspect for leaking batteries. ■ Protect batteries from the weather with tarp, roof, or other means. ■ Store batteries in an open rack or water-tight secondary containment unit to prevent leaks. ■ Neutralize acid spills and dispose of resulting waste as hazardous waste if it still exhibits a characteristic of hazardous waste. ■ Use longer-life batteries. ■ Store scrap metal under cover to prevent run-off of oil and grease during outdoor storage. ■ Rebuild scrap parts for reuse.
PROCESS	**Maintenance and Fluid Replacement**
Wastes Generated	Fluids contaminated with heavy metals, radiator flushing solutions, used oil, and used oil filters.
Possible RCRA Waste Codes	D002 (flushing solution), D008 (contaminated fluids), and D018 (contaminated fluids).
Potential Recycling, Treatment, and Disposal Methods	■ Drain oil filters carefully and collect and dispose of the oil properly. ■ Manage used oils that have been mixed with listed hazardous waste as a hazardous waste. ■ Reuse radiator flushing fluid.

- Collect used oil and automotive fluids for recycling.
- Package and label hazardous wastes for shipment using a hazardous waste transporter to a hazardous waste TSDF.

Potential Pollution Prevention Methods

- Avoid mixing used oil with hazardous waste or material that would prevent recycling of the oil.
- Use a drip pan when dealing with used oil.
- Transfer drip pan contents to containers as soon as practical to prevent air emissions and spills.
- Avoid allowing used oil or oil drips to enter your drainage system unless an oil-water separation system is in place or specific arrangements have been made with the local sewer utility.
- Use absorbent materials (e.g., pigmat) to catch drips or spills during activities where oil drips might occur.
- Use track pans, absorbent materials, or other collection devices under an idling locomotive.
- Label and cover all drums or containers with used oil or oil filters that are exposed to storm water.
- Discharge coolant when the locomotive has stopped and is at a location where the coolant can be collected and managed, when possible, to minimize contamination of soil and water. Avoid discharging coolant when locomotive is crossing open water or traveling adjacent to open water, to minimize aesthetic degradation of water.
- Switch to a radiator fluid that is amenable to recycling.
- Avoid mixing locomotive coolant with antifreeze that will be recycled.
- Use brake fluid, transmission fluid, and other fluids that do not contain chlorinated hydrocarbons.
- Use a first in, first out policy in storage areas and computerize inventory control to prevent materials from expiring.

PROCESS **Storage of Cleaning Chemicals**

Wastes Generated

Acetone, hydrofluoric acid, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, mineral spirits, toluene, and xylene.

Possible RCRA Waste Codes

D001 (acetone, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, mineral spirits, toluene, xylene), U002 (unused acetone), U080 (unused methylene chloride), U134 (unused hydrofluoric acid), U154 (unused methanol), U159 (unused methyl ethyl ketone), U161 (unused methyl isobutyl ketone), U220 (unused toluene), and U239 (unused xylene).

Potential Recycling, Treatment, and Disposal Methods

- Collect spilled or off-specification commercial chemical products for reclamation.
- Package and label hazardous wastes for shipment using a hazardous waste transporter to a hazardous waste TSDF.

Potential Pollution Prevention Methods

- Install curbs around hazardous product storage areas to contain leaks.
- Minimize storage quantities.
- Inspect storage areas to catch leaks while manageable.
- Use a first in, first out policy in storage areas and computerize inventory control to prevent materials from expiring.

Other Environmental Laws Affecting the Motor Freight & Railroad Transportation Industry

THE CLEAN WATER ACT

The Water Pollution Control Act, commonly known as the Clean Water Act (CWA), is the federal program designed to restore and maintain the integrity of the nation's surface waters. CWA controls direct discharges to surface waters (e.g., through a pipe) from industrial processes or stormwater systems associated with an industrial activity. It also regulates indirect discharges, or discharges to POTWs, through a public sewer system, by requiring industrial facilities to pretreat their waste before discharging to a public sewer. Industrial pollutants from the motor freight and railroad transportation industry that might be regulated by CWA include solvents. For parts cleaning, for instance, if washing stations drain to local sewers or oil-water separator systems, any hazardous wastes used or generated during parts washing that go down the drain may need to be permitted under CWA. While most railroad wastewater treatment systems are designed to remove oils from wastewater, other hazardous materials (e.g., solvents) might not be removed in the process. As a result, many POTWs have requirements, called pretreatment standards, in place. These standards govern the types and amounts of hazardous wastes you are allowed to discharge to the sewers.

CWA Resources:

- 40 CFR Parts 100 to 129 and 400 to 503
- Internet access: www.epa.gov/OW/
- EPA Office of Water: 202 260-5700
- Your state water authority, regional EPA office, and local POTW

Oil Pollution Prevention Under the CWA

The Oil Pollution Prevention regulations were promulgated under the authority of the CWA. These regulations establish requirements for facilities to prevent oil spills from reaching the navigable waters of the United States or adjoining shorelines. The regulations apply to non-transportation-related facilities with a specific aboveground or underground oil storage capacity that, because of their location, can reasonably be expected to discharge oil into the navigable waters of the United States.

Oil Pollution Prevention Regulation Resources:

- 40 CFR Part 112
- Internet access: www.epa.gov/

THE CLEAN AIR ACT

The Clean Air Act (CAA) regulates air pollution. It includes national emission standards for new stationary sources within particular industrial categories. It also includes national emission standards, which are designed to control the emissions of particular hazardous air pollutants (HAPs). Motor freight and railroad transportation facilities generate some HAPs such as volatile organic compounds in organic solvents and paints. The use of volatile solvents in small parts cleaning may require CAA permitting in some poor air quality regions. Also, CAA permits may be required for discharge of process air associated with certain large-scale painting operations. The CAA also seeks to prevent the accidental release of certain hazardous chemicals and to minimize the consequences of such releases.

CAA Resources:

- 40 CFR Parts 50 to 99
- Control Technology Center, Office of Air Quality, Planning and Standards, EPA, general information: 919 541-0800; publications: 919 541-2777
- Internet access: www.epa.gov/ttn/catc

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA OR SUPERFUND)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly known as Superfund, authorizes EPA to respond to releases, or threatened

CFR GUIDE TO HAZARDOUS WASTE REGULATIONS

To review the RCRA regulations referred to in this document, consult the following citations in 40 CFR:

Part 260—Hazardous waste management system: general.

Part 261—Identification and listing of hazardous waste.

Part 262—Standards applicable to generators of hazardous waste.

Part 263—Standards applicable to transporters of hazardous waste.

Part 264—Standards for owners and operators of hazardous waste and specific types of hazardous waste management facilities.

Part 265—Interim status standards for owners and operators of TSDFs.

Part 266—Standards for the management of specific hazardous wastes and specific types of hazardous waste management facilities.

continued

CFR GUIDE *continued*

Part 268—Land disposal restrictions.

Part 270—EPA administered permit programs: the Hazardous Waste Permit Program.

Part 271—Requirements for authorization of state hazardous waste programs.

Part 272—Approved state hazardous waste management programs.

Part 273—Standards for universal waste management.

Part 279—Standards for the management of used oil.

releases, of hazardous substances that might endanger public health, welfare, or the environment, that might come from any source. Superfund also grants EPA the authority to force parties responsible for environmental contamination to clean it up or to reimburse response costs incurred by EPA.

The most important part of this act applicable to motor freight and railroad transportation facilities is the hazardous substance release reporting requirement. The person in charge at your business must report to the National Response Center (phone: 800 424-8802) any release of a hazardous substance that exceeds a designated "reportable quantity" for that substance within a 24-hour period.

Superfund Resource:
- Internet access: www.epa.gov/superfund

THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

The Superfund Amendments and Reauthorization Act (SARA) of 1986 created the Emergency Planning and Community Right-to-Know Act (EPCRA). This law was designed to improve community access to information about potential chemical hazards and to facilitate the development of chemical emergency response plans by state and local governments. The EPCRA regulations establish several types of reporting obligations for facilities that store or manage specified chemicals such as hydrofluoric acid and methylene chloride in the motor freight and railroad transportation industry. Also, many of the chemicals used by motor freight and railroad transportation facilities, such as solvents and pigments, may be considered hazardous chemicals as defined by the Occupational Safety and Health Act (OSHA). Contact your local OSHA office if you have questions about whether the chemicals used in your motor freight and railroad transportation business are considered hazardous under OSHA.

EPCRA Resources:
- 40 CFR Parts 350 to 372
- The State Emergency Response Commission (contact available from RCRA Hotline)
- Internet access: www.epa.gov/opptintr/tri/index.htm *and* www.epa.gov/swercepp/

SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) mandates that EPA establish regulations to protect human health from contaminants present in drinking water. Under the authority of SDWA, EPA developed national drinking water standards and created a joint federal-state system to ensure compliance with these standards. EPA also regulates underground injection of liquid wastes under the SDWA to protect underground sources of drinking water.

SDWA Resources:
- 40 CFR Parts 141 to 148
- SDWA Hotline: 800 426-4791
- Internet access: www.epa.gov/ogwdw

TOXIC SUBSTANCES CONTROL ACT

The Toxic Substances Control Act (TSCA) allows EPA to collect data on chemicals to evaluate, assess, mitigate, and control risks that might be posed by their manufacture, processing, and use. Motor freight terminals and railroad transportation sites may be affected by some of the TSCA requirements. Electrical equipment, such as transformers, capacitors, and lighting ballasts, for example, that were manufactured before 1978 generally have insulating fluids that contain polychlorinated byphenyls (PCBs). PCBs are suspected carcinogens and are regulated under TSCA. PCB containing equipment must be properly managed to prevent PCB releases to the environment.

TSCA Resources:
- 40 CFR Parts 702 to 799
- TSCA Hotline: 202 554-1404
- Internet access: www.epa.gov/internet/oppts/

FOR MORE INFORMATION

For additional information on any of these laws, contact the RCRA Hotline at 800 424-9346 or 703 412-9810 in the Washington, DC, area. TDD (hearing impaired): 800 553-7672 or 703 412-3323 in the Washington, DC, area.

Contacts and Resources

HOTLINES AND INFORMATION CENTERS

RCRA Hotline
U.S. Environmental Protection Agency
Phone: 800 424-9346
or TDD 800 553-7672
In the Washington, DC, area:
703 412-9810, or TDD 703 412-3323
Home page: www.epa.gov/epaoswer/hotline

Answers questions on matters related to RCRA solid waste, hazardous waste, and underground storage tanks, EPCRA, and CERCLA.

RCRA Information Center
U.S. Environmental Protection Agency
RCRA Information Center (5305W)
401 M Street, SW.
Washington, DC 20460
Phone: 703 603-9230
Fax: 703 603-9234
E-mail: rcra-docket@epa.gov

Holds and provides public access to all regulatory materials on RCRA and distributes technical and nontechnical information on RCRA issues.

Small Business Ombudsman Clearinghouse/Hotline
U.S. Environmental Protection Agency
Small Business Ombudsman (2131)
401 M Street, SW.
Washington, DC 20460
Phone: 800 368-5888
Fax: 703 305-6462
Home page: www.smallbiz-enviroweb.org

Helps private citizens, small businesses, and smaller communities with questions on all program aspects within EPA.

EPA Headquarters Library
U.S. Environmental Protection Agency
Headquarters Library
401 M Street, SW., Room 2904
Washington, DC 20460
Phone: 202 260-5921 or 5922
Fax: 202 260-6257
E-mail: library-HQ@epa.gov
Home page: www.epa.gov/natlibra/liblists.html

Maintains environmental reference materials for EPA staff and the general public, including books, journals, abstracts, newsletters, and audiovisual materials generated by government agencies and the private sector. Also provides access to online computer service bulletin boards and CD-ROM systems.

Pollution Prevention Information Clearinghouse (PPIC)
U. S. Environmental Protection Agency
Pollution Prevention Clearinghouse (PPIC)
401 M Street, SW. (7409)
Washington, DC 20460
Phone: 202 260-1023
Fax: 202 260-4659
E-mail: ppic@epa.gov

Transportation Assistance Compliance Center
U. S. Environmental Protection Agency
Office of Enforcement and Compliance Assurance (OECA)
401 M Street, SW.
Washington, DC 20460
Phone: 202 564-2405
Fax: 202 264-0050
Home page: <es.epa.gov/oeca/tcac/tcac.html>

Provides assistance in complying with environmental regulations to the transportation industry.

U.S. Department of Transportation
Hazardous Materials Information Center
Phone: 800 467-4922

Provides information about DOT's hazardous materials regulations.

U.S. Government Printing Office
Superintendent of Documents
P.O. Box 371954
Pittsburgh, PA 15250-7954
Phone: 202 512-1800
Fax: 202 512-2250

Prints and distributes the *Code of Federal Regulations.* Title 40, Parts 260 to 299, contains most of the RCRA requirements.

ADDITIONAL INTERNET ADDRESSES

EPA Home Page
www.epa.gov

EPA RCRA Hazardous Waste Resources
www.epa.gov/osw/topics.htm

Code of Federal Regulations
www.epa.gov/docs/epacfr40/

Envirosense
es.inel.gov

Contains technical, policy, and general information on pollution prevention topics.

EPA's Transportation Team Home Page
es.epa.gov/oeca/medt/transp.html

Provides information including industry sector notebooks, for the transportation industry.

ADDITIONAL RESOURCES

Environmental Compliance Handbook for Short Line Railroads (forthcoming) is a plain-English guide to short line environmental responsibilities for freight and rail companies. Published by the U.S. Environmental Protection Agency and the Federal Railroad Administration. Check the OECA home page for availability at <es.epa.gov/oeca/>.

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Washington, DC 20460

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