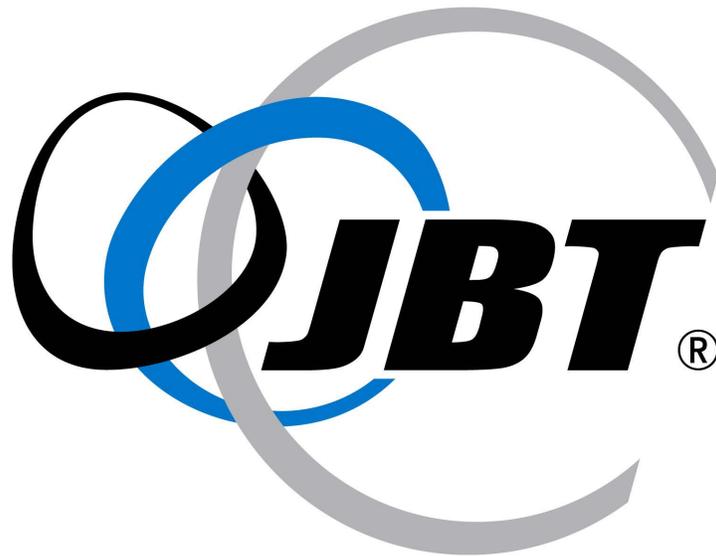


ENVIRONMENTAL MANAGEMENT GUIDELINES



1.0 INTRODUCTION

The Environmental Management Guidance Manual for JBT Corporation, (JBTC) is designed to help facility personnel better understand their responsibility for good environmental management. Its purpose is to improve environmental performance by assisting in the development and implementation of site specific environmental management programs to ensure regulatory requirements and prevent pollution. It is important to understand that for the environmental program to be fully responsive, the information provided here must be supplemented by knowledge of country, state and local regulations.

2.0 OVERVIEW OF ENVIRONMENTAL LAWS AND REGULATIONS

Environmental laws may be divided into the following three (3) general categories:

(1) Pollution Control Laws:

Set limits on the quantity of potentially harmful material that may be released to the environment, and establish requirements regarding the management of hazardous chemicals.

(2) Pollution Cleanup Laws:

Establish procedures to address existing soil and groundwater contamination at active (manufacturing) and inactive (abandoned and/or non-operating) sites.

(3) Damage Assessment Laws:

Create remedies on behalf of the government and private parties who suffer damages from pollution or who incur expenses in response to contamination and/or pollution. These laws basically determine who pays and how much.

3.0 MAJOR POLLUTION CONTROL LAWS

This Environmental Management Guide document is designed to specifically focus on the Pollution Control Laws and their affects on the facility's operations and regulatory requirements. Therefore, Pollution Cleanup and Assessment Laws will no be addressed. The current machinery operations are subject to one or more of the following five (5) Pollution Control Laws.

(1) Resource Conservation Recovery Act (RCRA) --- It regulates the hazardous waste management activities at active facilities relative to generation, storage, transport, treatment and disposal from cradle to grave.

(2) Clean Water Act (CWA) --- It regulates discharge of pollutants into waters of the United States from point sources, storm-water run-off and sewage treatment works.

(3) **Clean Air Act (CAA)** --- It provides a framework for regulating point or fugitive sources of air pollution.

(4) **Emergency Planning and Community Right-to-Know (EPCRA)** --- Its purpose is to improve community access to information concerning chemical hazards and to facilitate the development of chemical emergency response plans by state and local governments.

(5) **Toxic Substance Control Act (TSCA)** --- It regulates any chemical substance whose manufacturing, processing, distribution in commerce, use or disposal may present an unreasonable risk of injury to health or to the environment. Since machinery operations are very seldom impacted by TSCA regulations, it will not be discussed in the following “Pollution Control Laws” summary.

4.0 SUMMARY OF APPLICABLE POLLUTION CONTROL LAWS

4.1 Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA), enacted in 1976, was written to provide “cradle to grave” tracking of hazardous waste. Pursuant to RCRA, the federal Environmental Protection Agency (EPA) developed hazardous waste management regulations for generators and treatment, storage, and disposal facilities. In 1984, Congress expanded the scope of RCRA with passage of the Hazardous and Solid Waste Amendments (HSWA). HSWA directed EPA to adopt regulations governing small quantity hazardous waste generators (SQGs).

EPA has delegated authority to implement and enforce hazardous waste management programs to the states. State regulations are at least as stringent as EPA’s hazardous waste regulations. Still, it is important to keep up with EPA regulations since EPA regularly publishes new hazardous waste management regulations that are enforceable in the states even though they may not yet be included in a given state’s hazardous waste regulations.

Applicability

Facilities that generate hazardous waste are subject to varying requirements depending on how much hazardous waste they generate and accumulate in a calendar month. Under the Federal rules, there are three (3) classes of generators.

(1) Conditionally Exempt Small Quantity Generators (CESQG)

- Generate no more than 100 kg (220 lbs.) of hazardous waste, 1 kg (2.2 lbs.) of acutely hazardous waste, or 100 kg of contaminated waste from an acutely hazardous waste spill in a calendar month.
- Accumulate no more than 1, 000 kg (2,200 lbs.) of hazardous waste at any time.

(2) Small Quantity Generators (SOG)

- Generate between 100 kg and 1,000 kg (202 lbs. and 2,200 lbs.) of hazardous waste and no more than 1 kg (2.2 lbs.) of acutely hazardous waste in one calendar month.
- Accumulate no more than 6,000 kg (13,200 lbs.) of hazardous waste for up to 180 days (270 days if waste is to be transported over 200 miles).

(3) Large Quantity Generators (LOG)

- Generate more than 1,000 kg (2,200 lbs.) of hazardous waste or more than 1 kg (2.2 lbs.) of acutely hazardous waste in one calendar month.
- Accumulate more than 6,000 kg (13,200 lbs.) of hazardous waste up to 90 days.

Remember that states can define generators differently and set more stringent regulations. For example, the state of Maryland does not have a CESQG classification. Always be aware and understand state generator requirements.

4.1.1 Determining Generator Status

Hazardous waste management requirements are dependant on the type and quantity of wastes the facility generates. In order to properly manage hazardous waste, the facility must identify and inventory its waste streams, characterize these wastes, and then determine and track its waste generator status. The following steps will assist in determining the facility's Generator Status.

STEP 1: Identify and Inventory Waste

Identify all waste streams generated within the facility. Examples include unused chemicals, process waste, discarded or spent solvents, used oils, spent coolants, discarded paint reducers, thinners, paints, cleaning solvents, scrap metal and trash. Once the waste streams are identified, determine the volume or quantity of wastes generated in a typical month.

STEP 2: Characterize the Waste

Next, characterize the wastes to determine if they are subject to regulation as hazardous waste.

Is it a Solid Waste?

Because hazardous waste is considered a subset of solid waste, a hazardous waste must first meet the EPA definition of solid waste. The term solid waste is used very broadly in RCRA and refers to both nonhazardous and hazardous waste including solids, liquids, semi-solids, sludges, and compressed gas. A solid waste is defined as a material that has served its originally intended

purpose or is no longer useful and it is destined for disposal. If it is a solid waste, the next step is to determine whether or not it is a hazardous waste.

Is it a Hazardous Waste?

EPA defines hazardous waste in 40 CFR 261. A solid waste is considered hazardous if it:

1. Is listed on one of the hazardous waste lists:

- F- list (40 CFR 261.31) Commonly referred to as the non-specific source list. It contains spent solvents, electroplating wastes, etc.
- K-list (40 CFR 261.32) Commonly referred to as the specific source list. It contains wastes from certain industries.
- P- list and U list (40 CFR 261.33 (e) and (f)); The list applies to unused, discarded, commercial chemical products that are 100% pure.
- State Listed Waste: State hazardous waste regulators often add wastes, such as waste oils, and PCBs, to their state lists of hazardous waste.

2. Demonstrates one of the following characteristics:

- Ignitability (40 CFR 261.21): Ignitable wastes, denoted by D001, are generally liquids with flash points below 140°F.
- Corrosivity (40 CFR 261.22): Corrosive wastes, denoted by D002, are generally aqueous solution with a pH ≤ 2 or ≥ 12.5 .
- Reactivity (40 CFR 261.23): Reactive wastes, denoted by the code D003, are those wastes that are generally unstable, explosive, capable of detonation when heated under confinement, or react violently with water.
- Toxicity (40 CFR 261.24): Toxic wastes, denoted by the codes D004 through D0043, are wastes containing certain regulated constituents. To determine if wastes are toxic, they are subject to the toxicity characteristic leaching procedure (TCLP). See Attachment 4.

3. Is mixed with hazardous waste (mixture rule):

- If a listed hazardous waste is mixed with a nonhazardous waste the resulting mixture will remain regulated as the listed waste regardless of the quantity of the listed waste present in the mixture.
- If a characteristic hazardous waste is mixed with a nonhazardous waste the resulting mixture will be regulated as hazardous only if the resulting mixture still exhibits the characteristic. (Remember, dilution is not allowed as treatment).

4. Subject to the Derived From Rule:

- Materials derived from hazardous waste may still need to be managed as hazardous waste unless the materials have been de-listed.

STEP 3: Determine and Track Generator Status

Facilities that generate hazardous wastes are subject to varying regulatory requirements depending on how much hazardous waste they generate and accumulate in one calendar month. The facility's RCRA (generator) status is based on its waste generation rate. The lowest RCRA status is the CESQG and the highest is LQG. As the RCRA status of a facility increases, it becomes subject to more regulatory requirements. The facility should strive towards the lowest RCRA status.

STEP 4: Follow Hazardous Waste Generator Requirements

Once the generator status is determined, the facility must develop hazardous waste handling storage practices and procedures based on all applicable requirements and regulations. The following describes the regulatory requirements associated with each generator status.

Conditionally Exempt Small Quantity Generators (CESQG) must comply with two basic provisions for managing their hazardous waste:

- Identify all hazardous waste generated; and
- Send all hazardous waste to a hazardous waste management facility, landfill or recycler that is permitted by a state to manage treatment, storage or disposal of hazardous waste.

Small Quantity Generators (SQG) are required to meet registration, collection and storage area, emergency planning, and other requirements. SQGs must:

- Register with appropriate (usually state) environmental regulatory agency using the Notification of Hazardous Waste Generator Activity Form (8700-12);
- Comply with waste container requirements in 40 CFR 265, Subpart I except for air emission standards and a requirement to locate ignitable or reactive waste greater than 50 feet from the property line;
- Meet collection and storage requirements for satellite accumulation and accumulation areas;
- Provide at least one employee on the premises or on-call to respond to any emergency and act as the emergency response coordinator;
- Post the following information next to the telephone area:

- ▶ Name and phone number of the emergency coordinator and backup emergency coordinator,
- ▶ Location of spill control material, fire alarm, and fire extinguishers, and
- ▶ Telephone number of the local fire department unless there is a direct alarm;
- Ensure that all employees are familiar with responding to emergencies and proper waste handling procedures in their work area; and
- Establish and implement recordkeeping procedures for waste characterization, documentation on generator status, registration, manifests, exception reports, container inspection, land disposal restrictions (LDRs), and correspondence with local emergency responders.

Large Quantity Generators (LQG) are required to meet registration, collection and storage area, emergency planning, and other requirements. LQGs must:

- Register with appropriate (usually state) environmental regulatory agency using the Notification of Hazardous Waste Generator Activity Form (8700-12);
- Comply with waste container requirements in 40 CFR 265, Subpart I including air emission standards and a requirement to locate ignitable or reactive waste greater than 50 feet from the property line;
- Meet collection and storage requirements for satellite accumulation and accumulation areas;
- Prepare a Contingency Plan that documents the facility's preparedness and prevention measures in accordance with 40 CFR 265, Subpart D;
- Develop and implement a formal training program, and
- Establish and implement the same recordkeeping procedures as for SQGs as well as training records, contingency plan and a biennial report.

4.1.2 Drum Storage and Satellite Accumulation Areas

Federal regulations allow for two (2) types of hazardous waste storage areas for SQGs and LQGs, satellite accumulation and accumulation areas. The following describes the two types of container storage areas and the regulatory requirements associated with each area.

(1) Satellite Accumulation Areas -- They allow the temporary storage of gradually accumulated hazardous waste at or near the point of generation provided:

- ◆ The container is under the control of the operator of the process generating the waste.
- ◆ The operator does not accumulate more than one 55-gallon container of waste or (1) one quart of acutely hazardous waste at any given time.
- ◆ The container is labeled with the words “Hazardous Waste” or with other words that identify the contents of the container.
- ◆ The container is closed during storage, except when it is necessary to add or remove waste.
- ◆ When the container has reached its maximum storage capacity, it must be dated (fill date) and relocated to the Hazardous Waste Storage Area within 3 days.

(2) Drum/Container Accumulation (Storage) Areas -- The hazardous waste storage area must be separated from other storage areas and be marked to denote “Hazardous Waste Storage Area” and must further comply with the following requirements:

- ◆ The storage area’s floor/base must be sufficiently impervious to contain leaks and be free of cracks or gaps.
- ◆ “No Smoking” signs must be posted if ignitable and/or reactive hazardous waste are stored.
- ◆ Ignitable or reactive hazardous waste(s) must be stored at least fifty (50) feet from the facility’s boundary line.
- ◆ They must maintain adequate aisle space (no less than three (3) feet) between the stored drums/containers.
- ◆ Labels on the containers must be facing out (towards the aisle) and be legible.
- ◆ Drums should not be stacked more than three (3) levels high.
- ◆ Drums/Containers may not be stored for more than ninety (90) days for LQGs, and 180 days for SQGs.
- ◆ The Drum/Container Storage Area and stored containers must be inspected weekly and noted deficiencies must be addressed immediately.

4.1.3 Management of Waste Drums and Containers:

- ◆ Containers must be in good condition.
- ◆ The waste must be compatible with the container.
- ◆ The container holding the waste must always be closed during storage, except when it is necessary to add or remove waste.

- ◆ The date upon which each period of accumulation begins must be clearly marked on each container.
- ◆ Each container must be labeled or marked clearly with the words, “Hazardous Waste” or with other words that identify the contents of the container.
- ◆ Do not overfill waste containers; provide void space to allow for liquid expansion.
- ◆ Avoid contaminating the outside of the containers during filling or loading.
- ◆ Do not mix and/or place waste material in the container that is not consistent with the disposal site’s approval for that waste stream. (Including paper cups, etc.).

4.1.4 Shipping of Hazardous Waste -- Before transporting or offering hazardous waste for transportation off-site, the following requirements must be met:

- ◆ The containers must be labeled with an appropriate D.O.T. label in addition to the (yellow) Hazardous Waste label.
- ◆ Appropriate copies of the “Uniform Hazardous Waste Manifest form” and the “Land Disposal Restriction form” must accompany the waste shipment.
- ◆ The containers must be securely closed and must not be leaking.

4.1.5 Hazardous Waste Manifests – Make sure that:

- ◆ The manifest is signed, dated, and the signature and date are legible on all attached copies.
- ◆ All waste descriptions are correct.
- ◆ All weights are correct.
- ◆ It contains the proper shipping name.
- ◆ Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest.
- ◆ Retain the required appropriate copy (page) of the manifest at the Site.
- ◆ Give the transporter the remaining copies of the manifest that will accompany the shipment of hazardous waste.
- ◆ Upon the receipt of the waste shipment, the disposal site signs the remaining copies of the manifest and returns the appropriate copy back to the generator.

- ◆ Verify that the transporter or the disposal site does not make changes to the manifest without your approval.
- ◆ Confirm that the disposal site has returned the appropriate signed copy of the manifest in a timely manner.
- ◆ If the generator has not received a signed copy of the manifest from the waste disposal site within 30 days from the date the waste was accepted by the initial transporter, the generator must immediately contact the transporter and/or operator of the designated facility to determine the disposal status of the shipped hazardous waste.
- ◆ If the generator has not received a copy of the signed manifest from the disposal site within 35 days for LQGs and 45 days for SQGs, an Exception Report must be filed with the US EPA by the generator.
- ◆ Verify that the Exception Report contains the following information:
 - a legible copy of the manifest for which the generator does not have confirmation of delivery.
 - a cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the shipped waste and the results of those efforts.
- ◆ Retain copies of manifests for at least three (3) years.

4.1.6 Pollution Prevention and Waste Minimization

Pollution prevention and waste minimization are terms that refer to practices that reduce or eliminate the amount and/or toxicity of pollutants that would have been released into the environment prior to recycling, treatment, or disposal. Pollution prevention applies to all types of waste, releases to air, water, and land.

Some common pollution prevention practices include equipment or process modification, preventive maintenance, substitution with less toxic materials, inventory control procedures, and improved housekeeping.

EPA has developed a hierarchy for waste management alternatives, which lists source reduction as the preferred option, followed by on-site and off-site recycling, treatment, and land disposal.

Regulatory Requirements

- (1) On hazardous waste manifests copies, the Generator's Certification Statement (item 16) requires large quantity generators (LQG) of hazardous waste to certify that they have a program in place to reduce the volume and toxicity of waste generated.
- (2) SARA 313 Form R (under EPCRA) includes information submittal requirements concerning the facility's annual pollution prevention activities.

Applicability

Facilities that are Large Quantity Generators (LQG) of hazardous waste and/or subject to SARA 313 Form R reporting requirements must have a pollution prevention program in place. Implementing a pollution prevention program can benefit manufacturing facilities in a number of ways.

It may cut expenses by reducing waste treatment and disposal costs, raw material purchases, and other operating costs, and it may also reduce potential environmental liabilities.

In order for the Pollution Prevention/Waste Minimization program to be effective, it should include the following key elements:

- (1) Management support,
- (2) Waste stream assessment,
- (3) Feasibility analysis (priority selection),
- (4) Implementation of selected waste minimization options, and
- (5) Periodic evaluation of the program.

4.1.7 Non-Hazardous Solid Waste

Machinery facilities generate a variety of non-hazardous solid wastes. These wastes (commonly referred to as solid waste) include office trash, used packing materials, garbage from cafeterias, used filters and empty chemical containers, discarded tubing and wiring, discarded equipment and other materials.

Regulatory Considerations

RCRA Subtitle D encourages facilities to implement solid waste management practices that maximize the reuse of recoverable materials. Although solid waste is predominantly regulated by the state and local governments, EPA has promulgated some regulations governing solid waste management. Certain materials are prohibited from disposal as solid waste in regular trash. For example:

- Hazardous wastes and Polychlorinated Biphenyl (PCB) wastes;
- Liquid wastes (including rainwater); and
- Other prohibited wastes.

4.1.8 Special Wastes (Used Oil/Universal)

Special considerations have been made for the recycling and disposal of several commonly generated wastes. These special wastes include used oil, spent batteries, thermostats and fluorescent lights. Regulatory requirements and management issues related to these “special wastes” are as follows:

Used Oil Management

Used oil is regulated under 40 CFR Part 279. The EPA defines “used oil” as any oil that has been refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities. EPA utilizes a three tiered approach to determine if a substance meets the definition of used oil. The three criteria are listed below:

- (1) ORIGIN: used oil must have been refined from crude oil or made from synthetic.
- (2) USE: used oil must have been used as a lubricant, heat transfer fluid or hydraulic fluid to name a few. (Unused oil does not meet the EPA definition, also excluded are oils used as solvents or cleaning agents as well as antifreeze and kerosene.)
- (3) CONTAMINANTS: used oil must have been contaminated during use.

Regulatory Requirements

(1) Used oil is exempted from the hazardous waste program if it is managed through a used oil recycler and is not mixed with listed hazardous waste and the oil contains less than 1,000 ppm of total halogens. Used oil containers and fill pipes must be clearly labeled with the words “USED OIL.” The same containers should be marked with “Flammable” and “No Smoking” signs.

(2) Used oil generators are subject to all applicable Spill Prevention Control and Countermeasure (SPCC) 40 CFR Part 112 requirements and the transporter and recyclers of used oil must be registered by the EPA and state to manage used oil.

(3) Used “oil filters” that have been properly drained and crushed are exempted from hazardous waste regulations, provided the filters are non-terne plated. Terne is described as an alloy of tin and lead and may have been used on filters found in heavy trucks or equipment. To meet the exemption, the filter may be punctured and hot-drained, hot-drained and crushed, or hot-drained and dismantled. If one of these three methods is followed, the filter may be disposed of as non-hazardous.

Universal Waste Management

On May 11, 1995, the EPA promulgated regulations for streamlining the universal waste management requirements. It allows the facilities to accumulate universal waste on site for up to one year.

The Universal Waste Rule does not affect facilities that generate less than 100 kg (220 lbs.) of universal waste per calendar month. Universal wastes include batteries, agricultural pesticides, thermostats, and lamps.

The two most common types of universal waste found in machinery operations are:

- Batteries (40 CFR 273.2): Includes nickel-cadmium (Ni-Cd) batteries and the small sealed lead-acid (SSLA) batteries found in common item as electronic equipment. Non-Hazardous batteries (alkaline and spent lead acid batteries that are reclaimed) are excluded.
- Lamps (40 CFR 273.5): Includes fluorescent, high intensity discharge, neon, mercury vapor, high-pressure sodium, and metal halide lamps.

The handlers (generators) of universal waste must comply with the following requirements:

- All universal waste must be managed in a way that will prevent a release to the surrounding environment. Storage containers must be in good shape.
- The collection/storage container or the individual item must be labeled with the type of universal waste (batteries, lamps, etc.) and the words “Universal Waste”;
- All employees who are associated with the management of universal waste must receive appropriate be training;
- The facility receiving the universal waste must be authorized; and
- Shipments of universal wastes must be documented the records be kept for 3 years.

4.2 Clean Water Act (CWA)

The Clean Water Act (CWA), otherwise known as the Federal Water Pollution Control Act, was established to restore and maintain the chemical, physical, and biological quality of the waters of the United States. It addresses the release of pollutants to surface waters, such as lakes, rivers, and streams and wetlands. The Clean Water Act regulates several sources of water pollution, including point sources, storm water runoff, and spills of oil or other hazardous substances. (Storm water will be addressed in its own separate section).

Under the CWA, EPA is required to set effluent (discharge) standards on an industry basis (technology-based) and continue the requirements to set water quality standards for all contaminants in surface waters. The CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under the Act. The CWA provisions for the delegation by EPA of many permitting, administrative, and enforcement aspects of the law to state governments. In states with the authority to implement CWA programs, EPA still retains oversight responsibilities.

Applicability

This legislation specifically addresses the establishment of effluent limitations from point sources. Both direct and indirect discharges of pollutants are regulated. Direct discharges are

those that go immediately to a U.S. body of water, while indirect discharges are those waste streams that are sent to a public treatment facility before entering a water of the U.S. Pollutants regulated under the CWA fall into several categories including priority pollutants, toxic pollutants, and conventional and non-conventional pollutants.

4.2.1 Surface Water Discharge

Facilities that discharge wastewater (process water) to surface water are likely to require a National Pollutant Discharge Elimination System (NPDES) permit. Even effluents such as non-contact cooling water are often subject to NPDES requirements. Facilities with their own wastewater treatment system that discharges to a nearby lake or stream are subject to NPDES requirements.

Facilities with effluent discharges may be subject to the following:

- An inventory of wastewater discharges;
- Programs and practices for preventing, controlling and minimizing wastewater;
- Operating and maintenance procedures for wastewater discharge systems;
- Monitoring to check operations;
- Recordkeeping to document compliance with permits;
- Procedures to respond to emergencies; and
- Personnel training program.

4.2.2 Discharges to Sewer (POTW)

Regulations governing wastewater discharges to a Publicly Owned Treatment Works (POTW) are sometimes referred to as “pretreatment standards” meaning that some wastes must be treated before being discharged to comply with the standards. The National Pretreatment Standards found in 40 CFR Part 403.5 contain specific standards prohibiting all users from discharging the following pollutants into a sewer system.

- Flammable or explosive pollutants.
- Pollutants that will cause corrosive structural damage to the POTW.
- Solid or viscous pollutants that may cause an obstruction of flow in the POTW.
- Pollutants capable of releasing fumes or vapors in sufficient quantities.
- Wastewater with sufficient heat to inhibit biological activity in the POTW.

- Petroleum, oil, non-biodegradable cutting oil or products of mineral oil origin in amounts that will cause interference or pass through.

Several states have imposed pretreatment standards that are more stringent than the Federal standards. Additionally, most POTWs have local sewer ordinances typically set discharge limits for metals, biological oxygen demand (BOD), and various organic pollutants. Also, local ordinances often require “industrial users,” as defined in the ordinance, to obtain discharge permits from the local wastewater authority.

4.2.3 Discharges to Septic Systems

Where public sewer systems are available, septic systems may be prohibited. Facility managers in facilities that discharge wastewater to a septic system should caution all personnel that any pollutant discharged down the drain has the potential to contaminate the environment. Facilities which discharge to septic systems may be required to obtain a permit for discharge to groundwater.

4.2.4 Storm Water Regulations

Storm water discharges are generated by runoff from land and impervious areas such as paved streets, parking lots, outside material storage areas, and building rooftops during rainfall and snow events that often contain pollutants in quantities that could adversely affect water quality. Most storm water discharges are considered point sources.

In the early 1990s, EPA implemented a program requiring NPDES permits for storm water runoff. The storm water regulations address runoff from construction activities, industrial activities, and municipal separate storm sewer systems.

In general, offices and associated parking areas are not included by the NPDES storm water requirements. However, some industrial activities, such as outside storage of materials, may cause NPDES storm water runoff requirements to apply. The primary method to control storm water discharges is through the use of best management practices.

Applicability

Storm water discharges associated with the following industrial activity may be require to obtain an NPDES storm water permit:

- Construction sites where five or more acres are disturbed;
- Plant yards;
- Access roads and rail lines used for transport of raw materials, manufactured products, wastes or by-products;
- Material handling sites;

- Refuse and wastewater management areas;
- Material handling equipment storage sites;
- Shipping and receiving areas;
- Storage areas (including tank farms) for raw materials, manufactured materials, wastes and by-products; and
- Areas where previous industrial activities may have exposed significant materials to storm water.

If feasible, the above activities should be conducted inside a building or under a roof to eliminate the need for a permit.

The regulations identify 11 categories of “storm water discharges associated with industrial activity” regulated by the industrial component of the NPDES Storm Water Program. Either the facility’s Standard Industrial Classification (SIC) code or a description of facility industrial activities identifies these 11 categories.

The need to obtain an NPDES storm water permit is based on the following criteria:

Step 1.

Determine whether the facility or site discharges storm water associated with industrial activity. Discharge is defined by 40 CFR 122.26 (b) (14) as the discharge from any conveyance which used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw material storage areas at an industrial plant.

Step 2.

Determine if the facility’s industrial activities are listed among the eleven Categories of Industrial Activities, as defined by the federal regulations. (Industrial activities associated with JBTC ’s machinery manufacturing facilities are listed in Category Two.)

If the facility discharges storm water to a municipal sewer system or to the waters of the United States and its activities are listed, a permit is required. Prior to obtaining a permit, determine if the listed facility or site may qualify for an exemption or waiver under the federal regulations.

Storm Water Permits

There are two types of NPDES industrial storm water permits, general and individual permits, which are available to operators of industrial facilities.

(1) General Permits

Most industrial facilities have permit coverage under a general permit because it is the most efficient permit option. General permits contain requirements for numerous types of industrial activity, allowing the facility operator to quickly obtain permit coverage. Where EPA is the NPDES permitting authority, the Multi-Sector General Permit is the general permit currently available to facility operators.

EPA's Multi-Sector General Permit (MSGP) normally requires visual, analytical, and/or compliance monitoring requirements associate with the storm water runoff from outside raw material storage areas. Additionally, the facility must prepare a Storm Water Pollution Prevention Plan.

(2) Individual Permits

There are certain circumstances where a general permit is either not available or not applicable to a specific facility. In this type of situation, a facility operator must obtain coverage under an individual permit that the NPDES permitting authority will develop with requirements specific to the facility.

4.2.5 Spill Prevention Control and Countermeasure (SPCC) Plan

The Clean Water Act regulates several sources of water pollution, including oil spills or other hazardous substances. Under the SPCC rule, facilities using or storing oil in excess of specified quantities are required to implement measures that will prevent and control oil spills due to human operational errors or equipment failure.

Applicability

In accordance with 40 CFR 112, an SPCC plan is required of facilities storing oil, which is due to their location, and could reasonably be expected to discharge oil in harmful quantities to navigable waters. SPCC requirements apply to facilities that store or have the capacity to store:

- More than 42,000 gallons of oil underground; or
- 1,320 gallons total above ground (e.g., twenty-four (24) 55-gallon drums of oil); or
- Any single container above ground exceeding 660 gallons.

Regulatory Requirements

Discharges of oil to a navigable waterway that cause a sheen or discoloration to the surface of the water must be reported to the National Response Center (NRC: 800/424-8802) or the U.S. Coast Guard.

Facilities that are subject to SPCC requirements must have a written SPCC plan certified by a manager with the authority to commit the necessary resources and by a Registered Professional Engineer (PE).

The SPCC Plan must be reviewed at least every three years, and if no changes, dated and re-certified by facility management. Inspection, integrity testing, and personnel training records must be retained for 3 years.

4.3 Clean Air Act (CAA)

The Clean Air Act (CAA) is a comprehensive Federal law that regulates air emissions from stationary, and mobile sources. The Clean Air Act Amendments of 1990 (CAAA) established broad-reaching programs dealing with issues such as acid rain, ground level ozone, stratospheric ozone depletion, and air toxics.

Under the CAA, EPA is required to establish national ambient air quality standards (NAAQS), designate attainment and non-attainment areas relative to NAAQS, achieve NAAQS through State Implementation Plans (SIP), set specific technology based emission limits, and establish performance standards for new stationary sources.

The primary responsibility for implementing and enforcing the provisions of the CAA rests with the states. This is accomplished through state implementation plans (SIPs) which must be submitted to the U.S. EPA for review and approval. State programs must be at least as stringent as the federal program, but they can also be more stringent.

Applicability

The provisions of the Clean Air Act (CAA) addresses the following pollutants and emission sources:

(1) Criteria Air Pollutants. It includes the following six criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂). Such sources including boilers, dust and particles outside the facility, raw material storage areas, and fugitive emissions.

(2) Emissions of volatile organic compounds (VOCs) and oxides of nitrogen (Nox) in ozone non-attainment areas. Such sources including painting (paint booth), surface coating operations, metal finishing operations, organic and solvent degreasing.

(3) Hazardous Air Pollutants (HAPs). Currently, 190 pollutants are listed as hazardous air pollutants (HAPs) under Section 112 of the CAAA. Some of the common chemicals included on the list are chromium & compounds, methylene chloride, trichloroethylene, toluene, xylenes (o, m, p), methyl ethyl ketone (MEK), glycol ethers etc.

(4) Chemical Accident Prevention. In response to the CAAA, EPA developed regulations that establish requirements to prevent or respond to accidental releases of extremely hazardous air pollutants (40 CFR 68). Facilities storing above threshold quantities (TQs) of designated toxic or flammable substances in one process area will have to identify the possible risk hazards and develop a Risk Management Plan (RMP). For example, the threshold quantity (TQ) for propane gas is 10, 000 pounds per individual tank.

4.3.1 Construction and/or Operating Permits

The primary mechanism for regulating air pollutant emissions are state and local air quality regulations. These regulations normally follow the Federal guidelines and have similar features. However, depending on the type of air pollutant issues within the state or local air quality district, individual regulations will vary. The state may require the emission generating facility to obtain one of the following permits.

Title V Operating Permit. Title V of the CAAA establishes a permitting program for “major sources” of air emissions and for sources subject to certain New Source Performance Standards (NSPS) or National Emissions Standards for Hazardous Air Pollutants (NESHAPs). Implementation of the programs are delegated to authorized states.

A “major source” is defined as having the potential to emit:

- 10 tons per year of any single HAP or 25 tons per year of a combination of HAPs from all sources at the facility combined;
- A threshold quantity of a criteria pollutant and is in a non-attainment area for NAAQS; or
- 100 tons per year of any “air pollutant.”

State Permits to Construct and Operate. State air pollution control regulations may mandate that individual air pollution sources and control devices (e.g. individual boilers, paint spray booths, incinerators, baghouse, etc.) have permits to “construct” and permits to “operate.”

Facilities with air emission sources may be required to:

- Obtain Permits (Installation, Operating);
- Conduct Source Monitoring – to confirm compliance with applicable standards;
- Report noncompliance, or equipment failure;
- Install Pollution Control Equipment (scrubbers, baghouse, etc.);

- Implement Management Procedures; or
- Initiate Immediate Response Actions to Releases.

Permit or permit modification may be required if:

- Pollution abatement equipment is modified or changed;
- Process equipment is modified;
- Production throughput/volume changes (increase or decrease);
- Installation of new process equipment;
- Manufacturing process change – emission rate change;
- Process material change – solvents, paints (VOCs); or
- Use of ozone-depleting substances (freon).

4.3.2 Air Conditioning and Refrigeration Systems (Ozone-Depleting Substances)

Pursuant to the CAAA, EPA developed regulations that limit emissions of ozone-depleting substances (ODSs) such as chlorofluorocarbons (CFCs) (i.e. R-12) and hydrochlorofluorocarbons (HCFCs) (i.e. R-123) used in air conditioning and refrigeration equipment and halons used in fire suppressant systems.

EPA regulations prohibit venting and requiring recycling of these materials during equipment (HVAC) servicing, repair and disposal. Service personnel must be trained and certified by EPA or an EPA-approved organization. Also, the facility must comply with the following recordkeeping requirements:

- An inventory of all CFC containing equipment including quantity of CFC in each.
- Records of handling, certification, repair, recycling equipment usage, quantities of CFC.
- Also require service technicians to provide records.

4.4 Emergency Planning and Community Right-to-Know Act (EPCRA)

The Federal Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) establish requirements to encourage and better support emergency planning efforts at the state and local levels, and requires industrial facilities to provide community right-to-know information concerning potential chemical hazards to state and local authorities, as well as the public. The emergency planners include the Local Emergency Planning Committee (LEPC), the State Emergency Response Commission (SERC), and the local fire department.

The Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) is actually Title III of the Superfund Amendments and Reauthorization Act (SARA). This Act requires emergency planning and notification, inventory and material safety data sheet (MSDS) reporting, hazardous chemical inventory form reporting, and toxic chemical release inventory reporting.

Applicability

Facilities storing chemicals, manufacture, import, process, or otherwise use toxic chemicals on-site may be subject to the EPCRA requirements. The toxic materials are not limited to chemicals; it also includes metal compounds that are contained in stainless steel, brass, and other metals. The facilities should review the following sections and determine its applicability.

Emergency Planning and Notification (Sections 302/303) --- In 40 CFR 355, EPA codified a list of extremely hazardous substances and associated threshold-planning quantities (TPQs). Facilities storing extremely hazardous substances in amounts exceeding the TPQs must notify state or local emergency response authorities.

Inventory and Material Safety Data Sheet (MSDS) Reporting (Section 311)---

In accordance with 40 CFR 370, facilities storing chemicals may be required to submit material safety data sheets (MSDS) and inventories of the chemicals on site. Submission are only required for OSHA hazardous substances present in amounts exceeding 10,000 lbs., and extremely hazardous substances present in amounts exceeding their TPQs or 500 lbs. (whichever is less).

Hazardous Chemical Inventory Form Reporting (Section 312) --- If the facility meets EPCRA reporting threshold, it is required to submit a Hazardous Chemical Inventory Form to the LEPC, SERC and the local fire department (40 CFR 370.20). A TIER I form requires a certification statement, information on maximum amounts of chemicals in the facility, number of days materials are on site, and hazard type and storage locations for chemicals. The TIER II form contains more detailed hazard information.

Toxic Release Inventory Reporting (Section 313) --- The facility is subject to TRI reporting if it meets the following operational criteria established in 40 CFR 372.22 for the last calendar year:

- It has ten or more employees (or the total hours worked by all employees is greater than 20, 000 hours); and
- It is in Standard Industrial Classification (SIC) major group codes 10, 12, or 20 through 39; industry codes 4911, 4931, 4939, 4953, 5169, 5171, or 7389; and
- It manufactured, imported, processed, or otherwise used a toxic chemical in excess of TRI threshold quantities.

In January 2001, EPA designated lead and lead compounds, mercury and mercury compounds as Persistent, Bio-accumulative, and Toxic (PBT) chemicals. This designation requires facilities that manufacture, process, and otherwise use lead and lead compounds in excess of 100 pounds

and/or mercury and mercury compounds in excess of 10 pounds per year to submit the first report (Form R) by July 1, 2002, for the 2001 calendar year.

4.4.1 Reporting Requirements

The following provides the submission requirements for facilities subject to SARA Sections 311, 312, and/or 313 reporting requirements.

Section 311

One time submission of a copy of the MSDS or list of hazardous chemicals must be made to the LEPC, SERC, and local fire department.

If significant new information concerning previously submitted MSDS becomes available or chemical brought on site that exceed the chemical's TPQ, the facility must submit a revised MSDS or a new list within 3 months.

Section 312

TIER I or TIER II form must be submitted, annually, to the LEPC, SERC, and the local fire department by March 1.

SARA 313 (Form R)

The Form R consists of five pages. It includes specific information on the facility, reported chemicals (including PBTs), and pollution prevention activities.

One report must be submitted, annually, for each chemical or chemical category. The report must be submitted by July 1.

5.0 ADDITIONAL ENVIRONMENTAL MANAGEMENT ISSUES

5.1 Underground Storage Tanks

The 1984 amendments to RCRA included provisions concerning underground storage tanks (USTs) that store petroleum, petroleum byproducts or substances defined as hazardous under CERCLA Section 101. EPA regulations for USTs are contained in 40 CFR 280. These regulations contain requirements for tank design, construction and installation, general operations, release detection, release reporting and corrective action and closure.

EPA defines an (UST) as any tank, including the underground piping associated with the tank, that has at least 10 percent of its volume underground.

5.2 Polychlorinated Biphenyls (PCBs)

The EPA regulates waste containing PCBs under 40 CFR Part 761. Wastes containing 50 ppm of PCBs or greater are regulated under Toxic Substances Control Act (TSCA). Common PCB containing electrical equipment at the facilities are transformers, and fluorescent light ballast.

Facilities that have PCBs containing equipment are subject to stringent inspection, record keeping, storage, and labeling requirements.

5.3 Asbestos

Asbestos is regulated under TSCA, CAAA (40 CFR 61, Subpart M), and OSHA. TSCA regulates the abatement of asbestos from various facilities. The CAAA details the reporting and recordkeeping requirements for disposal under NESHAP, and OSHA regulates protection against asbestos exposure (PPE, PEL, medical exams, etc.)

Older manufacturing facilities may have asbestos containing materials in pipe insulation, floor and ceiling tile, wallboard and other building materials.

5.4 Radioactive Materials (sealed/NORM)

The EPA does not have a large role in regulation of radiation safety. However, there are a number of federal, state, and local standards and regulations that pertain to radiation safety and the possession of radioactive sources.

Sealed radioactive sources used to calibrate measuring devices, radiation-producing devices such as X-ray equipment or electron microscopes are regulated by the Nuclear Regulatory Commission (NRC).

Naturally Occurring Radioactive Material (NORM) is regulated under the authority of the state agencies. Radionuclides are known to be associated with the organic materials in nature such as oil and gas production facilities. Therefore, oil, gas, and oil brines frequently contain radioactive materials. These radioactive materials accumulate in piping, valves, and flow meters that are used in the removing and processing petroleum and natural gas. Wellhead equipment returned from the field for repairs and service may be contaminated with NORM.

5.5 Used Computers

The rapid turnover in computer technology is annually generating millions of obsolete computers which end up in landfills or incinerators. Computer monitors, central processing units (CPUs), keyboards and printers all have printed circuit boards that contain metals and are likely to exceed toxicity characteristic levels (TCLP). It includes lead, cadmium and other metals from the monitors and chromium, beryllium, mercury, lead, cadmium, nickel, zinc, silver and gold from printed circuit boards.

In many states, businesses and institutions that do not recycle their used computers are subject to applicable solid and hazardous waste rules. The local and state regulations concerning computer disposal should be consulted prior to discarding of any computer related hardware.

6.0 EMERGENCY RESPONSE, SPILLS, RELEASES

Environmental laws and regulations require facilities to report noncompliance conditions, spills, and accidental releases to the environment. The more common accidental release reporting requirements are summarized in Table 1.

Table 1. Accidental Release Reporting Requirements

Substance Released	Description of Release	Notification Summary
Hazardous Substance & Extremely Hazardous Substances	RQ enters the environment and/or release to water.	Immediately notify NRC (800-424-8802)
	Any amount extends beyond facility boundary.	Immediately notify the LEPC, SERC
Oil	Release to the water that causes sheen on water, discoloration of surface water or sludge or emulsion beneath surface.	Immediately notify NRC (800-424-8802)
Pollutant discharged from source point	Release to the water caused by violation of permit limit.	- Within 24 hrs. Notify EPA - See permit for additional requirements
Any pollutants discharged to POTW	- Pollutant not authorized in discharge agreement. - Quantity that exceeds limits set in agreement.	- Within 24 hrs. Notify POTW - See agreement for additional requirements
Hazardous substances or Petroleum	Suspected leak of underground storage tank.	Notify state UST Agency within 24 hrs.
Hazardous Waste	Amount that causes off-site threat.	Immediately notify NRC (800-424-8802)

Note: Multiple reports are necessary if release meets multiple criteria.

The above table provides a general summary of the regulatory requirements. The local and state accidental release reporting requirements may be more stringent.

Note:

Any and all incident reporting to regulatory agencies must be conducted in accordance with JBT Corporation (JBTC's) internal incident communication procedures.

7.0 ATTACHMENTS

1. List of Acronyms

2. Flow Chart for SARA 311/312 Applicability Determination
3. Flow Chart for SARA 313 Applicability Determination
4. EPA Toxicity Characteristic Constituent Table
5. RCRA Requirements Summary as a Function of Generator Status