

SECTION FIVE

Environmental Regulations: A Small Business Primer

5.1 Types of Wastes Which May Be Regulated

As a small business you must be aware of your responsibilities for proper disposal of your waste materials. This section provides background information to help you determine if disposal of your waste materials is regulated by state and/or federal agencies. Understanding and correctly interpreting waste regulations can be difficult and confusing. In Wisconsin, your local Department of Natural Resources district office can help you to understand what regulations and requirements apply to you.

The following list specifies the types of waste which may be subject to federal and/or state regulations. Note that for regulatory purposes these definitions may vary from state to state.

Solid Waste: Solid waste generally refers to any garbage, refuse, sludge, and other discarded or salvageable material, including solid, liquid, semisolid or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities. This does not include solids or dissolved materials in domestic sewage, dissolved or suspended solids in industrial waste water effluent, or other common water pollutants.

Note: Wastes that are "solid" in their physical state are not always considered "solid wastes" from a regulatory standpoint. If a waste conforms to the above definition *and* is not considered to be hazardous (i.e. is not listed by the EPA as hazardous or doesn't have hazardous characteristics, as detailed below), then it can be categorized as a solid waste.

Typical solid wastes include: paper; wood; yard debris; food wastes; plastics; leather; rubber and other combustibles; and noncombustible materials such as glass and rock.

Hazardous Waste: Hazardous waste is any *solid waste* (see above) which is defined as hazardous. A solid waste is defined as hazardous if it is either 1) listed as hazardous by the EPA or a state's regulatory agency; or 2) has hazardous characteristics.

- 1) The EPA-issued hazardous wastes lists include: wastes generated by non-specific sources (e.g. spent halogenated solvents); wastes generated by specific sources (e.g., distillation bottoms from the production of acetaldehyde from ethylene); acutely hazardous commercial chemical products and manufacturing chemical intermediates which may be hazardous under certain conditions; and toxic commercial chemical and manufacturing chemical intermediates which may be hazardous in certain circumstances.
- 2) The criteria for determining whether a solid waste has hazardous characteristics include: ignitability (e.g. flash point less than 140E F); corrosivity (e.g. pH less than 2 or greater than 12.5); reactivity (e.g., reacts violently with water, normally unstable, generates toxic fumes, etc.); and toxicity (e.g. as determined by the "TCLP" laboratory test).

Typical hazardous wastes include: mineral spirits; 1,1,1-Trichloroethane; toluene; xylene; methylene chloride; perchloroethylene; valclene; spent cyanide plating, cleaning and bath solutions; waste treatment sludge; spent cyanide heat treating bath solutions; and metalworking quenching wastewaters.

Mixed/Contaminated Waste: Mixed/contaminated waste refers to (non-hazardous) solid waste which has been mixed with, or contaminated by, a hazardous waste or substance.

Note: If a solid waste is mixed with (or contaminated by) a "characteristic" hazardous waste it is considered hazardous only if the resulting mixture retains the hazardous characteristic. A mixture of a "listed" hazardous waste with a non-hazardous solid waste is generally considered hazardous unless certain specific criteria can be met.

Typical mixed/contaminated wastes: used motor oil, used engine coolant, paint booth filters, and empty containers.

Air Emissions: Air emissions refer to the release or discharge of a pollutant into the ambient air either 1) by means of a stack, or 2) as a fugitive dust, mist or vapor as a result inherent to the manufacturing or formulating process.

Typical air emissions include: overspray and drying from painting or coating operations; evaporating solvents from parts cleaning/degreasing operations; perchloroethylene from dry cleaning operations; and aerosols containing ozone depleting compounds.

Wastewater Discharge: Wastewater discharge refers to any direct discharge of a pollutant from a "point source" (i.e. an identifiable source such as a pipe, ditch, or outfall) to surface waters, groundwaters, such as through septic systems, or to a publicly owned treatment plant (POTW).

Note: The term "pollutant" is very broadly defined and even includes heat from noncontact cooling water. Pollutants are generally characterized as either 1) "conventional," which includes such things as total suspended solids (TSS), biochemical oxygen demand (BOD), phosphorus, oil and grease, or 2) "toxic," which consists of various chemicals or chemical compounds which have toxic effects on human health, wildlife, fish or aquatic life.

Typical wastewater discharges include: wastewater from vehicle washing operations; wastewater from food processing; spent aqueous cleaning solutions; industrial process wastewaters; and boat sewage discharge.

Stormwater Runoff/Discharge: Stormwater runoff refers to water from rainfall and snow melt that runs off buildings, sidewalks, etc., and flows over the ground surface returning to a water body, potentially collecting pollutants from air and/or land along the way. As the runoff "leaves" a particular site it is considered (for regulatory purposes) "stormwater discharge." Stormwater discharge is usually considered a "point source" pollution as it actually originates from a particular

site, or a discreet point source. Stormwater discharges are sometimes referred to collectively as "urban runoff" which is generally considered "nonpoint" source pollution.

Typical stormwater runoff /discharge pollutants include: oil and grease from vehicle maintenance; sediments from construction sites; pesticides from groundskeeping activities; detergents from vehicle washing; and hazardous liquids from leaking above-ground storage tanks.

Other (non-waste) Regulatory Concerns:

Hazardous Substances: The term "hazardous substance" usually means any substance or combination of substances which may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration, physical, chemical, or infectious characteristics. This term includes, but is not limited to, substances which are toxic, corrosive, flammable, irritants, strong sensitizers, or explosives as determined by a regulatory agency.

Underground Storage Tanks (USTs): An underground tank is generally defined as a tank and any associated pipes having 10 percent of its volume or more beneath the surface of the ground. USTs containing petroleum products or hazardous substances, or (in some states, including Wisconsin) any flammable or combustible liquids, are generally subject to regulation. Exceptions often include: farm or residential tanks of 1,100 gallons or less used for storing motor fuel for noncommercial purposes; tanks used for the storage of heating oil for consumptive use on the premises where stored; certain pipeline facilities; surface impoundments, pits, ponds or lagoons; stormwater or wastewater collection systems; liquid traps or gathering lines related to oil or gas production; and storage tanks situated in an enclosed underground area such as a basement.

Sources:

Business Waste Reduction & Recycling Portfolio, Wisconsin Department of Natural Resources, Madison, WI, PUBL-IE-171 93.

The Environmental Dictionary, compiled by James J. King, Executive Enterprises Publications Co., Inc., New York, NY, 1989.

Managing Your Hazardous Wastes: A Guide for Wisconsin Small Quantity Generators (Third Edition Revised), Wisconsin Department of Natural Resources, Madison, WI, 1993, PUBL-SW-071 93REV.

Wisconsin Environmental Law Handbook (Third Edition), DeWitt Ross & Stevens, S.C., Government Institutes, Inc., Rockville, MD, 1995.

5.2 Types of Environmental Regulations in Wisconsin

The following list contains brief summaries of the regulations governing waste generation in Wisconsin. You should consult your state, regional, or local regulatory agency for more complete information as well as for any changes that might occur in the regulations.

Solid Waste Regulations: Wisconsin state regulation of solid waste generators states that "a person generating solid waste shall be responsible for collection and transportation of the waste to a (licensed) solid waste disposal facility unless the person contracts with a (licensed) collection and transportation service..." (*Wisconsin Environmental Law Handbook*; p. 146)

The (Wisconsin) Waste Reduction and Recycling Law also affects solid waste generators. It requires every local unit of government responsible for recycling to pass its own recycling ordinance. **Businesses** should contact their local governments for details of the specific recycling requirements in their area as they may be required to recycle certain solid wastes which they generate. **Building** (commercial, retail, industrial and governmental) and **multi-family dwelling property owners** are also responsible for recycling activities on their property. They must either (1) provide occupants with a collection system and adequate storage containers for recyclables, notify occupants how and what to recycle, and ensure that recyclables are transported to a recycling center; or (2) ensure that all trash generated (including recyclables) is collected and transported to a processing facility that separates and recycles banned items.

Additionally, many solid waste items have been banned from state landfills and licensed incinerators and thus must be managed in an alternative manner. These include: major appliances; used oil (except when burning for energy recovery); lead-acid vehicle batteries; grass clippings; leaves; sticks, brush and other lawn and garden resources (except when burning for energy recovery); office paper; newspapers; magazines; corrugated cardboard and other container board; aluminum containers; steel containers; bi-metal (steel/aluminum) containers; glass containers; plastic containers; foam polystyrene packaging; and tires (except when burning for energy recovery). Other wastes, including used refrigerants from appliances and automobiles, must first be removed from their "host materials" and then reclaimed or otherwise properly managed.

Hazardous Waste Regulations: Wisconsin's regulatory framework for hazardous waste management is substantially patterned after the federal Resource Conservation and Recovery Act (RCRA).

Generators of hazardous waste in the state are required by statute to:

- 1) conduct testing programs to determine whether any material generated by them is hazardous;
- 2) keep records that accurately identify the quantities of hazardous waste generated, the hazardous constituents of the waste, and the disposition of hazardous waste;

- 3) label any container used for the storage, transport, or disposal of hazardous waste;
- 4) use appropriate containers for hazardous waste;
- 5) furnish information on the general chemical composition of hazardous waste to persons transporting, treating, storing or disposing of hazardous wastes;
- 6) comply with rules relating to use of a manifest system;
- 7) submit all reports required under state statutes;
- 8) comply with rules relating to (waste generation) notification; and,
- 9) arrange to have all their hazardous wastes transported, treated, stored, or disposed of at licensed facilities.

The manifest and reporting requirements (nos. 6, 7, and 8 above) may not be applicable to businesses which generate "very small quantities" of hazardous waste. (See Section 5.3 for information on Generator Status). Large- and small-quantity generators, however, are required to record detailed hazardous waste-related information and report it to the DNR, which then makes the information available to the public. Additionally, the premises, vehicles, and or records of any person who generates, stores, treats, transports or disposes of hazardous waste are subject to inspection by the DNR. Both civil and criminal penalties may be imposed and citizen suits may be filed for hazardous waste compliance violations.

Mixed/Contaminated Waste Regulations: Mixed/contaminated wastes that are deemed hazardous are subject to Hazardous Waste Regulations (as outlined above). A treatment license may be necessary if mixing wastes. Mixed/contaminated wastes that are deemed non-hazardous are subject to Solid Waste Regulations (as also outlined above).

Air Emissions Regulations: Wisconsin's air pollution regulations are based on the federal Clean Air Act and the 1990 Clean Air Act Amendments. The specific requirements that apply to a particular business/facility are dependent on several factors, including (1) where the business is located (i.e., whether the business/facility is located in a "nonattainment" or an "attainment" area), (2) the kinds of pollutants the business/facility emits into the air, and (3) the amount/quantities released.

Businesses located in Wisconsin's "ozone nonattainment area," face additional regulations, requiring them to reduce the VOCs released into the air through their processes. (The nonattainment area includes the counties of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha.) VOCs are a common cause of ozone. Lithographic printers, users of industrial adhesives, motor vehicle refinishers, companies using solvents to clean metal parts, and wood finishers are examples of affected business types.

Several federal air regulations apply to specific industry types, requiring them to reduce their use of hazardous air pollutants (HAPs). HAPs are known to cause harmful health effects to humans as well as damage to the environment. Dry cleaners, chromium electroplaters, users of halogenated solvent cleaning products, and wood furniture manufacturers currently face these air pollution regulations.

In addition to these state and federal regulations, the Wisconsin Department of Natural Resources regulates emissions from process lines, visible emission (particulate matter), internal combustion engines, and mobile sources.

Some businesses/facilities may be required to obtain construction or operating permits which include enforceable emission limitations, compliance schedules, monitoring and reporting requirements, and payment of annual fees based on emission quantities. Businesses which do not need a permit may still be subject to certain regulations, including emission limitations and reporting requirements. As with hazardous waste generators, air emission generators may be subject to inspection by the DNR, and both civil and criminal penalties may be imposed for compliance violations. (Specific reporting information pertaining to air emissions is made available to the public by the DNR.)

Wastewater Discharge Regulations: Wisconsin regulations governing wastewater discharge are based on the federal Clean Water Act and Water Quality Act. State law regulates two types of wastewater discharges: (1) a direct discharge of a pollutant from a "point source" to water; and (2) discharge to a publicly owned treatment works (POTW).

- 1) The Wisconsin Pollutant Discharge Elimination System (WPDES) program specifies that all direct wastewater discharges from a point-source to water (including natural or artificial surface water and/or groundwater) require a WPDES permit. The permit sets the limit on the amount of wastewater that the permit holder may discharge. The particular limit is based on (a) the industry type (and accordingly the available pollution control technology for that industry and the particular facility's production rate), and (b) the impact of the discharge on the quality of the receiving water. Because the WPDES program applies to groundwater discharges as well as surface waters, permits are generally required where liquid waste is discharged onto land or land spread.

The permit system relies largely on self-reporting to assure compliance, which requires the submission of a monthly discharge monitoring report (DNR) providing information on the discharge of each of the permitted pollutants. Failure to submit these reports or falsification of the reports can lead to civil or criminal prosecution. These monitoring reports are available to the public by the DNR.

- 2) Discharges to a publicly-owned treatment works (POTW) require that first a discharger notify the DNR and the POTW as to the types of pollutants to be discharged to the POTW. Second, dischargers are subject to *pretreatment standards*, which means reducing the amount of pollutants, or altering the pollutants' properties to a less harmful state, before discharging to a POTW. General pretreatment standards require industrial dischargers to do the following: (a) prevent the introduction into a POTW of pollutants that will interfere with POTW operations or sludge disposal; (b) prevent the introduction into a POTW of pollutants that will pass through untreated or interfere with treatment operations; and (c) improve opportunities for recycling and reclamation of industrial

wastewaters and sludge. Industrial dischargers that fail to comply with applicable requirements could face an enforcement action brought by its municipality (i.e. POTW), the DNR, or the EPA.

Stormwater Runoff/Discharge Regulations: The federal Water Quality Act of 1987 provides the basis for Wisconsin regulations on stormwater discharge. In Wisconsin, virtually any stormwater discharge associated with (1) "designated" industrial activities, or (2) construction sites is subject to regulation under the Wisconsin stormwater discharge permit program.

- 1) Regulatory requirements for industrial activities differ depending on industry type, with heavy manufacturers ("Tier 1 facilities") being more tightly regulated than light manufacturers and service industries ("Tier 2 facilities"). Both Tier 1 and Tier 2 facilities must apply for a stormwater permit which sets forth monitoring and reporting requirements for each of the respective industry categories. In most cases a "general" permit will be issued to the facility. In some cases, however, an "individual" permit will instead be issued, which in addition to monitoring and reporting requirements may also set forth effluent limitations for stormwater discharges.

Everyone seeking a general or individual stormwater permit must also prepare and implement a "stormwater pollution prevention plan" (SWPPP). The requirements for the plan are quite comprehensive and include, among other things: summary of major on-site activities; drainage basin map; identification of all potential stormwater contamination sources; identification of significant polluting materials, etc. The plan must also include specific pollution control measures and monitoring procedures. All permitted facilities must conduct an annual site inspection to verify that various elements described in the SWPPP remain accurate and that the pollution control and monitoring procedures are being implemented. Site inspection reports must either be submitted to the DNR or made available for DNR inspection at their request.

- 2) Landowners who will create a point source discharge of stormwater associated with construction sites of five acres or more must file a notice of intent with the DNR before commencing construction, on forms prescribed by the DNR. Each site must also have and follow an erosion control plan which addresses soil erosion and sedimentation problems from initial construction through final stabilization of the site. The plan must include, among other things, site maps, drainage patterns, areas of soil disturbance, etc. Pollution caused by stormwater discharges (e.g., from rooftops, parking lots, etc.) after construction is completed must also be addressed. The DNR may also require the submission of plans and specifications for stormwater treatment practices, or may require the submission of an individual stormwater discharge permit application if the discharge is determined to be a significant source of pollution.

Stormwater discharge permits are enforceable through civil or criminal actions by the EPA, the state regulatory agency, or by citizens. It is the responsibility of the permit applicant to assure that the proposed stormwater provisions, as set forth in their submitted plans, are appropriate.

Other (non-waste) Regulations:

Hazardous Substances: Based on the federal 1986 Emergency Planning and Community Right to Know Act (EPCRA), Wisconsin regulation requires disclosure of information and reporting obligations concerning the use and release of hazardous materials. (Note: This relates to the normal manufacture, management, and use of hazardous substances. When such substances become wastes they are subject to hazardous waste regulations, and when they are spilled in significant quantities they are subject to hazardous remediation regulations.)

Depending on the industry type, number of employees at the facility, and the nature of the hazardous substances, specific regulatory requirements may include:

- 1) notifying state and local emergency planning committees about "extremely hazardous" substances which the facility has on-site, appointing a representative to the local emergency planning committee, and reporting releases to these and other national emergency organizations;
- 2) submitting lists or material safety data sheets (MSDSs) for chemicals which the facility has on site in excess of a specified quantity;
- 3) submitting annual inventory forms containing estimates of the maximum- and daily-average amount of chemicals present at the facility, and the locations of these chemicals at the facility; and
- 4) submitting a "Form R" release report specifying chemicals used at the facility and releases of these chemicals to the environment. In addition, emergency release notification must be made to 24-hour spill hotline at the Wisconsin Division of Emergency Government and to the DNR. Wisconsin also has an "employee right to know" provision which provides employees the right to obtain chemical lists and training with respect to chemical substances used within a facility. Any person violating any of these regulations may be subject to civil or criminal penalties.

Underground Storage Tanks (USTs): Wisconsin regulations ("ILHR 10") for underground storage tanks are guided by the federal Resource Conservation and Recovery Act (RCRA), with some notable differences. In Wisconsin, regulations apply to all underground storage tanks containing flammable and combustible liquids, which includes almost all petroleum products (fuel oil, diesel fuel, etc.). Thus, certain underground storage tanks otherwise exempt under federal law (e.g., farm and residential motor fuel tanks less than 1100 gallons, heating oil tanks, etc.) are not exempt under Wisconsin law.

The specific requirements for Wisconsin are as follows:

- 1) all tanks (new, existing, abandoned, or removed) must be registered with the Wisconsin Dept. of Commerce (Commerce), any new tank installation must first be approved by Commerce, and permits must be obtained for all USTs other than farm, residential, or heating oil tanks;
- 2) all new tanks must meet "performance standards" (i.e. technical specifications for tank and pipe design and construction), while existing tanks must be upgraded to meet the standards for new tanks or an "alternative" set of standards as determined by Commerce;
- 3) all new and existing tanks must meet general operating requirements (e.g., spill and overfill control, corrosion protection systems, tank/substance compatibility assurance, standard repairs, reporting and recordkeeping requirements, etc.);
- 4) all tanks, depending on their size and use, must meet specific "release detection compliance options" (e.g., tank tightness testing, automatic tank gauging, vapor monitoring, etc.);
- 5) all suspected tank releases must be investigated, and if confirmed, reported to the DNR, and corrective action undertaken; and
- 6) all "temporary" tank closures must follow certain corrosion protection and release detection measures and (in some cases) vent line, cap, and pump measures, while "permanent" tank closures require notification to Commerce and a site assessment, as well as tank emptying, cleaning and removal, possibly followed by site remediation.

Property Contamination and Liability: Under the Wisconsin Spill Statute and/or the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), current owners of contaminated property/facilities may be held liable for cleanup/remediation (and other) costs even if they did not own the property/facilities when they became contaminated — by improper hazardous waste disposal, leaking underground storage tanks, accidental hazardous substance releases, etc. Additional liability provisions for underground storage tanks are covered under the federal RCRA program. Past owners may also be held liable for these costs. Environmental site assessments should be undertaken before purchasing any property which is suspected of present, or past, contamination.

Sources:

Business Waste Reduction & Recycling Portfolio, Wisconsin Department of Natural Resources, Madison, WI, PUBL-IE-171 93.

Managing Your Hazardous Wastes: A Guide for Wisconsin Small Quantity Generators (Third Edition Revised), Wisconsin Department of Natural Resources, Madison, WI, 1993, PUBL-SW-071 93REV.

Wisconsin Environmental Law Handbook (Third Edition), DeWitt Ross & Stevens, S.C., Government Institutes, Inc., Rockville, MD, 1995.

5.3 Determining Your Generator Status

Hazardous waste is a by-product of many large and small businesses. From a public perspective, it is most often associated with medium- to large-size manufacturers, but in reality many small, non-manufacturing businesses produce some hazardous waste. At the larger end of the spectrum, a metal fabrication plant may have hazardous waste associated with cleaning and painting its products, or a large printer may have ink wastes classified as hazardous. On the other hand, a small auto service shop, a hardware store, a small copy shop, or even a general merchandise store may generate small quantities of hazardous waste.

From a regulatory view, the business is responsible for determining if it is generating any hazardous waste. Generators fall into one of three categories (i.e. very small quantity generator, small quantity generator, and large quantity generator or VSQG, SQG, and LQG, respectively). The generator status is determined by three factors:

- 1. amount of hazardous waste generated per calendar month**
- 2. amount of hazardous waste accumulated on site at any one time**
- 3. whether the waste is hazardous or acute hazardous**

Very Small Quantity Generator

A VSQG has a monthly generation limit of 100 kg (220 pounds) or less of hazardous waste, and 1 kg (2.2 pounds) or less of acute hazardous waste (consisting of EPA listed pesticides). A VSQG cannot accumulate more than 1,000 kg (2,205 pounds) of hazardous waste, or 1 kg (2.2 pounds) of acute hazardous waste.

A VSQG must determine if its waste is hazardous and comply with generation and storage limits. It must properly manage or dispose of hazardous waste at an approved hazardous waste facility. In Wisconsin it is legal to send hazardous waste to approved solid waste landfills, but no landfills currently have such authorization. When the wastes are transported, they must be properly marked and labeled according to U.S. Department of Transportation rules, and a licensed transporter is to be used. VSQGs are allowed to self transport only to a local household hazardous waste and VSQG collection facility. If the transporter requires a manifest, then the VSQG must get an EPA identification number.

Small Quantity Generator

A SQG has monthly generation limits of less than a 1,000 kg (2,205 pounds), and an accumulation limit of 6,000 kg, or 13,230 pounds. The maximum accumulation cannot be stored more than 180 days (270 days if the hazardous waste facility is over 200 miles away).

The regulatory burden is greater for a SQG. In this case an EPA identification number is required, proper storage regulations apply, recordkeeping and reporting requirements apply, an

annual report must be given to the Wisconsin DNR, and emergency procedures must be established for leaks, spills, or fires involving hazardous waste.

Large Quantity Generator

A LQG generates over 1,000 kg (2,205 pounds) per month and may not store hazardous waste more than 90 days. With acute hazardous waste, any generator exceeding the VSQG limit of 1 kg (or 100 kg spill) becomes a LQG. Any business falling in this category should contact the Department of Natural Resources for information on additional requirements.

Source:

Managing Your Hazardous Wastes: A Guide for Wisconsin Small Quantity Generators, 3rd edition, Wisconsin Department of Natural Resources, 1993.

5.4 Resource List for Wisconsin Regulatory Questions/Concerns

For specific questions or concerns regarding waste regulations in Wisconsin contact your regional DNR field office.

NORTHERN REGION

Department of Natural Resources
P. O. Box 309
Spooner, WI 54801
(715) 635-2101

SOUTH CENTRAL REGION

Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3266

Department of Natural Resources
P. O. Box 818
Rhineland, WI 54501
(715) 365-8900

NORTHEASTERN REGION

Department of Natural Resources
1125 N. Military Avenue, Box 10448
Green Bay, WI 54307
(414) 492-5800

WEST CENTRAL REGION

Department of Natural Resources
1300 W. Clairemont Avenue, Box 4001
Eau Claire, WI 54702
(715) 839-3700

SOUTHEASTERN REGION

Department of Natural Resources
2300 N. Dr. Martin Luther King, Jr. Drive
P. O. Box 12436
Milwaukee, WI 53212
(414) 263-8500

DNR, Richards Street Annex
4041 N. Richards Street
P. O. Box 12436
Milwaukee, WI 53212
(414) 229-0800

5.5 Working Glossary of Solid and Hazardous Waste Terminology

This glossary is intended as a quick reference to the basic terminology of solid and hazardous waste issues.

Acute - Severe, often dangerous, conditions in which rapid changes occur over a brief period of time as a result of exposure to a toxic material. Acute reactions can be reversed more easily than chronic effects. See also: toxic, chronic.

Acutely Hazardous Waste - Waste designated by the U.S. EPA to present such a danger to human health and/or the environment so as to require regulation of small amounts (1 kilogram, or 2.2 pounds). Examples of these wastes include pesticides and dioxin-containing wastes.

Catalyst - A substance that increases or decreases the speed of a chemical reaction without undergoing a chemical change itself.

Caustic - Something that strongly irritates, burns, corrodes, or destroys living tissues. See also: corrosive.

Chemical Additive - Substances used in product formulations to provide certain characteristics to the product. These characteristics might include color, elasticity, durability, viscosity, and others.

Chemical Substitution - Replacement of hazardous chemicals with nonhazardous or less hazardous ones in both production and non-production processes.

Chemical Specific - Applying to individual chemicals, versus broad classes of chemicals.

Chronic - An adverse condition that results from repeated exposure to a substance over a prolonged period of time.

Code of Federal Regulations (CFR) - The general and permanent rules promulgated under U.S. law, published in the Federal Register and actually in force at the end of a calendar year. The Code is divided into 50 titles which represent broad areas subject to federal regulation. Each title is divided into chapters according to the issuing agency and subdivided into parts covering specific regulatory areas. See also: Federal Register.

Compaction - A reduction in volume. This waste management technique uses mechanical pressure to physically reduce the volume of waste after generation.

Compatibility - The ability of two or more materials to exist in close association for long periods with no adverse affect of one on the other.

Compressed Gas - Any material or mixture having in the container an absolute pressure exceeding 40 psi at 70EF or, regardless of the pressure at 70EF, having an absolute pressure exceeding 104 psi at 130EF; or any liquid flammable material having a vapor pressure exceeding 40 psi at 100EF.

Conditionally Exempt Generators - Generators of less than 100 kilograms (220 pounds) per month of non-acutely hazardous waste or less than 1 kilogram (2.2 pounds) per month of acutely hazardous waste. See also: Very Small Quantity Generator (VSQG).

Consolidation (of waste) - Packaging technique used to minimize the volume of waste.

Contingency Plan - Management tool that projects potential emergency situations and outlines the appropriate

response actions to ensure the health and safety of employees, response personnel, and the environment.

Cooperative Waste Shipments - Arrangement between businesses generating similar wastes and a transport firm to provide a coordinated pickup of waste from each participating business. This arrangement can be formal or informal and usually results in a decrease in the transportation costs for each business. (See Milk Runs)

Corrosivity - A solid waste characterized as either an aqueous material with a pH less than or equal 2.0, or greater than or equal to 12.5, or a liquid that corrodes steel at a rate greater than 6.35 mm per year at a test temperature of 55E C (130EF).

Dewatering - A reduction in waste volume through evaporation or separation processes that remove aqueous components.

Discharge - A release or flow of stormwater or other substance from a conveyance or storage container.

Distillation - A separation process in which a liquid is converted to vapor and the vapor then condenses back to a liquid.

Emergency Planning and Community Right-to-Know Act (EPCRA) - Title III of the Superfund Amendments and reauthorization Act (SARA), passed by Congress in 1986. This major law gave the public significant new rights to find out about the dangerous chemicals stored, used, and released throughout the country. In particular, Section 313 of Title III created the Toxics Release Inventory (TRI) to provide public data on "routine" chemical releases from industries across the nation. See also: Toxic Release Inventory.

Emission - Pollution discharges into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities and from motor vehicle, locomotive, or aircraft exhausts.

Equipment Changes - Modifications of and additions to equipment used in any stage of the manufacturing process (e.g., equipment used for storing, moving, mixing, or reacting chemicals) in order to reduce the amount of waste generated.

EPA Identification Number - A 12-character, site specific identification number used by the U.S. EPA and states to maintain a national data base on hazardous waste activities. Generators of more than 100 kilograms (2200 pounds) of hazardous waste in any calendar month and transporters and facilities that treat, store or dispose of regulated quantities of hazardous waste are required, by law, to have an EPA Identification Number.

Explosive - Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion, i.e., with a substantially instantaneous release of gas and heat.

Federal Register - Publication of U.S. government documents officially promulgated under the law, documents required to be published by an act of Congress and other federal agency documents of public interest. It is published each day following a government work day. In effect, it is a daily supplement to the Code of Federal Regulations.

Flammable - Any solid, liquid or gaseous material that will ignite easily and burn rapidly. Flammable liquids are defined by the National Fire Protection Association and the Department of Transportation of having a flash point of 100EF (37.7EC) and a vapor pressure of not over 40 psi at 100EF. The most common flammable gases are hydrogen, carbon monoxide, acetylene, and other hydrocarbon gases.

Fugitive Air Emissions - Air pollution releases through leaky valves, evaporation from tanks, and other *unintentional* release points.

Full Cost Accounting - An accounting process that identifies all costs with a process or product.

Hazardous Waste - Any solid waste that is characterized as ignitable, corrosive, reactive or toxic and/or has been listed in the RCRA regulations.

Heavy Metal - Metallic elements such as mercury, chromium, copper, zinc, lead, and cadmium having high molecular weights. These elements tend to be associated with negative health effects in humans above certain dose levels.

Housekeeping - General management and operational practices that can greatly impact worker safety and hazardous waste management. Examples of good housekeeping practices include recycling waste, reducing the amount of waste you generate, and strict use of appropriate personal protection equipment.

Ignitability - A solid waste characterized as a non-aqueous liquid having a flash point less than 140EF (60EC), or a non-liquid capable under standard temperature and pressure of causing fire through friction, absorption of moisture, or spontaneous chemical changes and when ignited, burns so vigorously and persistently that it creates a hazard, or an ignitable compressed gas or an oxidizer.

Incineration - Thermal destruction of solid or hazardous waste through oxidation.

Incompatible - Materials that could cause dangerous reactions from direct contact with one another.

Inorganic Chemical - In general, chemicals that do not contain the element carbon. The exceptions include certain simple carbon-containing compounds such as oxides (carbon monoxide, carbon dioxide), carbonated and bicarbonates (such as baking soda, baking powder and chalk), cyanides and cyanates, and carbon disulfide). See also: Organic Chemical.

Large Quantity Generators - Facilities that generate 1000 kilograms (2200 pounds) or more of hazardous waste, or more than 1 kilogram (2.2 pounds) of acutely hazardous waste in any month. Generators of hazardous waste are regulated under the Resource Conservation and Recovery Act (RCRA). See also: RCRA.

Materials Safety Data Sheet (MSDS) - Part of the Hazard Communication Standards (HCS) set up by the U.S. Occupational Safety and Health Administration (OSHA) to protect workers from chemical hazards. The MSDS provides the chemical composition of the substance being used, its trade name and name of the manufacturer, hazards associated with the substance, and precautions that workers should take to avoid such hazards.

Materials Balance - A quantitative assessment of chemical inputs and outputs for individual processes that aims to account for every pound of a chemical that is: shipped to the process; created or destroyed in the process; delivered as a product from the process; or wasted (irrespective of whether it is an air, water, or solid waste). If the amount of wastes identified does not equal the difference between the amount of the chemical entering (or being created in) and leaving (or being consumed in) the process, then other sources of waste must exist and need to be identified.

Milk Runs - A term used to refer to cooperative waste shipments. (See Cooperative Waste Shipments)

Multimedia - Applying to all environmental media: land, water, and air.

Operational Changes - Changes in the way hazardous materials are handled at a plant (e.g., careful observations and control of materials, process conditions, and employee habits in order to minimize spills, process upsets, or the use of excessive amounts of chemicals) that can reduce generation of waste.

Organic Chemical - Chemical compounds containing carbon, except for certain simple ones. See also: Inorganic Chemical.

Oxidizer - A substance such as chlorate, permanganate, inorganic peroxide, or a nitrate that yields oxygen readily to stimulate the combustion of inorganic matter.

Personal Protective Equipment (PPE) - Devices such as respirators, gloves, shoes, and ear protectors that are worn to protect against hazards in the work environment.

Plasticizer - A chemical additive used in natural and synthetic polymers that imparts characteristics such as flexibility, elasticity, workability, color, etc.

Point Source Air Emissions - Air pollution released through smokestacks, vents, and other intentional release points.

Polymer - Compounds of very high molecular weight make up of a large number of simple molecules (monomers) that have been caused to combine with each other through chemical reaction. Polymers can be naturally occurring, such as rubber, cellulose, starch, and proteins, or synthetic, such as polystyrene, nylon, polyethylene, and polypropylene. See also: Resin.

POTWs (Publicly Owned Treatment Works) - Public sewage piping and facilities.

Priority Pollutants - A list of 126 specific chemicals regulated by the Clean Water Act amendments of 1977 as toxic chemicals. Included are volatile substances, acidic, basic and neutral compounds, pesticides, metals, cyanides, and phenolic compounds.

Process Changes - Any change in the production process that reduces the generation of waste, ranging from simple alterations of process conditions, such as temperature and pressure, to discovery of new chemical pathways and production technologies.

Product Changes - Changes in the product itself that can be achieved without changing the fundamental manufacturing process and that reduce the generation of waste (e.g., creating a chemical product in the form of pellets rather than as a powder can reduce the generation of waste dusts as the material is transferred during final packaging operations).

Reactive - A solid waste characterized as unstable and which readily undergoes violent change without detonating. Forms potentially explosive mixtures with water, generating toxic gases, vapors or fumes so as to present a danger to human health or the environment.

Recycling - Reuse of by-products, or components of by-products, that might otherwise be disposed of in the environment.

Resin - A special category of polymers characterized by a tendency to harden upon heating (thermosetting), whereas other polymers soften (thermoplastic).

Resource Conservation and Recovery Act (RCRA) - Federal "cradle-to-grave" regulations affecting hazardous and nonhazardous (garbage) solid waste.

Resource Recovery - The beneficial reuse of a waste products in ways different from their original use.

Reuse - In general, reuse refers to a substance that is reintroduced at the front end of a production process from which it was originally generated as a by-product.

Right-to-Know - A term usually referring to a series of laws, regulations, or databases that provide industry-related information to the public.

SARA - See Superfund Amendments and Reauthorization Act.

Small Quantity Generator (SQG) - A facility that generates more than 100 kilograms (220 pounds) and less than 1000 kilograms (2200 pounds) of hazardous waste in any month. Generators of hazardous waste are regulated under the 1986 amendments to the Resource Conservation and Recovery Act (RCRA).

SIC Codes - Standard Industrial Classification codes, the system the federal government uses to classify US companies according to the products they produce (e.g., the chemical and allied products industry is assigned SIC code 28, with individual industries in this category having four-digit codes that begin with 28).

Sludge - A semi-solid residue from any of a number of air or water treatment processes. Sludge can be a hazardous waste.

Solvent - A substance, usually in liquid form, that serves as a medium in which other substances (solids, liquids, or gases) may be undissolved but does not react with those substances. The ability of solvents to dissolve other substances allows them to be used for cleaning purposes, as the major component of products such as paints and adhesives, or as the medium in which the dissolved chemicals may react with each other.

Source Reduction - A strategy for reducing pollution that involves preventing the generation of waste in the first place rather than cleaning it up, treating it, or recycling after it has been produced.

Stormwater - Runoff from a storm event, snowmelt runoff, surface runoff and drainage.

Superfund Amendments and Reauthorization Act (SARA) - A 1986 federal law amending the original "Superfund" law. Title III of this law is called the Emergency Planning and Community Right-to-Know Act (EPCRA). Section 313 of EPCRA contains the Toxics Release Inventory (TRI) requirements. See also: Toxic Release Inventory.

Surfacewater - All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, wetlands impoundments, seas, estuaries, etc.); also refers to springs, wells, or other collectors which are directly influenced by surfacewater.

Toxicity - The ability of a substance to cause damage to living tissue, impairment of the central nervous system, severe illness, or in extreme cases, death when ingested, inhaled or absorbed by the skin.

Toxic Release Inventory (TRI) - The U.S. EPA's annual inventory of the pounds of about 320 chemicals released to the land, air, or water, or transferred off-site from the 20,000 or so largest manufacturing facilities using manufacturing these chemicals in the United States. The TRI provisions are found in Section 313 of the Emergency Planning and Community Right-to-Know Act, which is Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA).

Toxic Pollutants - Any pollutant listed as toxic under the Clean Water Act, Section 501 (a)(1) or, in the case of

“sludge use of disposal practices,” any pollutant identified in regulations implementing Section 405 (d). Refer to 40 CFR Part 122 for more details.

Toxicity Characteristic Leaching Procedure (TCLP) - A test used to classify materials as hazardous based upon the concentration of heavy metals (such as mercury, cadmium or lead) and pesticides in an extract of that material and the potential for environmental contamination.

Underground Storage Tanks (USTs) - Any storage tank with at least 10 percent or more of its storage capacity underground. See 40 CFR Part 280.12 for the complete regulatory definition.

Very Small Quantity Generator (VSQG) - A facility that generates no more than 100 kilograms (220 pounds) of hazardous waste and no more than 1 kilogram (2.2 pounds) of acutely hazardous waste in any calendar month. Also called a conditionally exempt small quantity generator under the Resource Conservation and Recovery Act (RCRA).

Waste Audit - A formalized inventory of types and quantities of waste generated at a given facility in a given period of time.

Waste Minimization - See Waste Reduction.

Waste Reduction - Practices or techniques which reduce or eliminated the volume and/or toxicity of wastes generated. This includes in-plant practices that reduce, avoid, or eliminate the generation of hazardous waste so as to reduce risks to health and environment. This includes only actions taken during the waste generating process. Treatment, concentration or recycling of wastes after they are generated is not included.

Sources:

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