

## Chapter 2: Solid and Hazardous Waste

Waste is any material no longer utilized for its original purpose. Printing facilities generate many types of waste. The following are some examples of waste materials from printing facilities:

- office paper, cardboard, glass, metal, and plastic food and beverage containers
- food wastes from cafeteria or break room operations
- used lubricating oils
- office equipment, such as computer monitors, hard drives, printers, copy machines, televisions, and microwave ovens
- fluorescent lamps, batteries, used antifreeze, mercury waste, and pesticides
- packaging from materials such as foam, strapping, and lumber
- overruns and waste from production
- used inks, solvents, adhesive coatings, etc.
- materials with an expired shelf life
- off-specification materials
- materials no longer needed due to production process changes
- solvent-contaminated rags and wipes

Waste generated at any printing operation is broadly classified as either solid waste or hazardous waste. Each classification has its own definition and requirements. This chapter focuses on identifying wastes and the regulations that govern their proper disposal.

### What must be done to manage my hazardous waste?

1. Inventory all waste.
2. Determine which wastes are hazardous.
3. Determine your hazardous waste generator status.
4. Properly manage wastes on site.
5. Properly dispose of hazardous and non-hazardous waste.
6. Complete training if needed due to generator size.

Each section below explains the requirements for proper management of hazardous wastes.

### ***Section A: How to Inventory Waste at Your Facility***

To inventory waste:

- Schedule a walk-through of every operation and area of facility.
- List every waste material produced.
- Document hazardous wastes (i.e., from product containers, SDS data, regulatory lists, or test results). Not all wastes need to be tested if it can be determined from other information that a waste is hazardous or non-hazardous.
- Calculate the amount of each hazardous waste produced during each previous calendar month in the calendar year.
- Record your method of disposal for each waste. Some methods include:
  - recycling
  - treatment
  - disposal by an approved hazardous waste facility
  - removal of solid waste by a municipal waste hauler to a licensed landfill

Treatment of a waste means any method, technique, or process, including neutralization, which is designed to change the nature of any hazardous waste so as to neutralize it, or to recover energy or material resources from the waste, or to render the waste non-hazardous for transport, recovery, storage, or reduced volume. Treatment includes incineration that takes place without energy recovery.

Though not all waste will be hazardous, identifying and categorizing your wastes will enable you to understand the type and amount of waste generated and possibly find ways to reduce the amount of waste generated. Use the Example Facility Walkthrough Chart below as a template and complete this chart as you conduct a walkthrough of your facility. Additional information provided below will help you determine if the waste is hazardous or non-hazardous. Additional examples and blank charts can be found in the Yellow Ink Room section.

You can refer to DNR's fact sheet on the waste determination process for more information:

<http://dnr.wi.gov/files/PDF/pubs/wa/WA1152.pdf>.

| Example Facility Walkthrough Chart                 |                         |            |                              |                  |                         |
|--|-------------------------|------------|------------------------------|------------------|-------------------------|
| Activity   | Waste                   | Hazardous? | Why?                         | Monthly HW (gal) | Final Disposal          |
| Prepress   | Untreated fixer         | Yes        | Toxic (>5ppm silver)         | 10               | J&M Haz. Waste, Inc.    |
| Pressroom  | Waste cleaning solvents | Yes        | Ignitable (FP* < 140°F)      | 20               | J&M Haz. Waste, Inc.    |
| Pressroom  | Waste nonheatset ink    | No         | Not listed or characteristic | N/A              | Taylor Disposal Experts |
| Pressroom  | Waste solvent ink       | Yes        | Ignitable (FP* < 140°F)      | 3                | J&M Haz. Waste, Inc.    |
| Pressroom  | Waste specialty ink     | Yes        | Ignitable (FP* < 140°F)      | 4                | J&M Haz. Waste, Inc.    |
| Pressroom  | Waste solvent adhesive  | Yes        | Ignitable (FP* < 140°F)      | 2                | J&M Haz. Waste, Inc.    |
| Office   | Mixed paper             | No         | Not listed or characteristic | N/A              | Taylor Disposal Experts |
| <b>Total Hazardous Waste Generated (gal/month)</b> |                         |            |                              | <b>39</b>        |                         |

\*FP = Flash Point

### **Section B: Determine Which Wastes are Hazardous or Non-Hazardous**

Depending on how certain wastes are managed, they can be determined to be either hazardous or non-hazardous. Review your management practices carefully and consider making changes where possible to reduce the facility hazardous waste generator status.

#### **Section B.1: What are Non-hazardous or Solid Wastes**

Solid waste typically generated by printing facilities includes: office and lunchroom waste; non-printing production waste; and warehouse waste not related to product handling. Some of these wastes are banned from landfills and must be properly *recycled*. These wastes can also be called *non-hazardous*.

**Recycling** is the process by which solid waste is returned to productive use as material or energy.

Examples of materials banned from landfills:

- **Paper:** office, newspaper, magazines, corrugated cardboard
- **Containers:** aluminum cans, steel (tin) cans, glass bottles and jars, plastic containers

- **Electronics:** computers, televisions, desktop printers, computer peripherals, DVD players, digital video recorders, VCRs, fax machines, and phones with video displays (cell phones)
- **Other:** major appliances, waste tires, lead-acid batteries, yard waste, used oil

To prevent banned wastes from going into the landfill:

- Provide separate containers for materials banned from landfills.
- Arrange for collection or delivery of recyclables to a recycling center.

If your local municipality does not offer recycling services for some or all of your waste materials, go to the Wisconsin Recycling Markets Directory for possible outlets: <https://www.uwgb.edu/shwec/>. Some wastes, such as toner or ink cartridges, can be recycled through recycling and mail back programs.

|                      |   |  |
|----------------------|---|--|
| <b>Question HW.1</b> | Do you have a recycling program that includes items such as office paper, plastic, e-waste, aluminum, etc.? (It is not necessary to have all items listed to check "Yes".)<br><br>Enter a response to the right and continue with the next section. | <input type="checkbox"/> Yes.<br><br><input type="checkbox"/> No. Start a program. |
|----------------------|---|--|

### Section B.2: How to Determine If Waste Is Hazardous

Waste is hazardous if it is a *Characteristic Waste* or a *Listed Waste*. The most common hazardous wastes generated by printers are Characteristic Wastes.

Some common hazardous wastes associated with printing facilities include: certain types of press/screen cleaning solutions; untreated fixer, some parts of cleaning solvents; solvent based inks; and coatings or adhesives.

#### What is a Characteristic Waste?

A Characteristic Waste is defined as hazardous because it has one of the following chemical characteristics:

**Flash point** is the temperature at which the vapor above the liquid will ignite when a flame is passed over the surface.

#### **Ignitable Wastes (D001):**

- liquid waste with a *flash point* less than 140°F
- an ignitable compressed gas
- non-liquid that spontaneously combusts
- oxidizers

Examples: paint wastes; certain non-chlorinated degreasers; cleaning solvents; some solvent based adhesives; thinners; and solvent based inks and coatings.

#### **Corrosive Wastes (D002):**

- an aqueous (water-containing) waste with a pH less than or equal to 2.0, or a pH greater than or equal to 12.5
- a liquid waste that corrodes plain carbon steel at a rate greater than ¼ inch/year (6.35 mm/yr)

Examples: waste computer-to-plate developing solutions; waste acid or alkaline cleaning fluids; waste battery acids; and other waste acids or bases.

**Reactive Wastes (D003):**

- normally unstable; readily undergoes violent changes without detonating
- reacts violently with water
- forms potentially explosive mixtures with water
- generates toxic gases or fumes when mixed with water
- cyanide or sulfide bearing waste
- capable of detonation or explosive reactions under certain conditions
- Class A, Class B, or a forbidden explosive

Examples: cyanide plating wastes; sulfide containing wastes; and waste toluene-diisocyanate.

**Toxic Wastes (D004 to D043):**

- heavy metals; pesticides; semi-volatile and volatile organic compounds
- at levels that can be extracted from the Toxicity Characteristic Leaching Procedure (TCLP)

Examples: certain inks containing regulated heavy metals

If the results of a TCLP test are above the regulatory threshold for a particular compound in a waste, then that waste is considered hazardous. The table below titled "Characteristic Wastes Defined as Toxic" lists those regulatory thresholds. Learn more on TCLP at <https://www.epa.gov/hw-sw846/sw-846-test-method-1311-toxicity-characteristic-leaching-procedure>.

| Characteristic Wastes Defined as Toxic |            |                            |                           |            |                            |
|--|------------|----------------------------|---------------------------|------------|----------------------------|
| Compound                               | Waste Code | Regulatory Threshold (ppm) | Compound                  | Waste Code | Regulatory Threshold (ppm) |
| Arsenic                                | D004       | 5.0                        | Hexachlorobenzene         | D032       | 0.13                       |
| Barium                                 | D005       | 100.0                      | Hexachloro-1,2- butadiene | D033       | 0.5                        |
| Benzene                                | D018       | 0.5                        | Hexachloroethane          | D034       | 3.0                        |
| Cadmium                                | D006       | 1.0                        | Lead                      | D008       | 5.0                        |
| Carbon Tetrachloride                   | D019       | 0.5                        | Lindane                   | D013       | 0.4                        |
| Chlordane                              | D020       | 0.03                       | Mercury                   | D009       | 0.2                        |
| Chlorobenzene                          | D021       | 100.0                      | Methoxychlor              | D014       | 10.0                       |
| Chloroform                             | D022       | 6.0                        | Methyl ethyl ketone       | D035       | 200.0                      |
| Chromium                               | D007       | 5.0                        | Nitrobenzene              | D036       | 2.0                        |
| o-Cresol                               | D023       | 200.0                      | Pentachlorophenol         | D037       | 100.0                      |
| m-Cresol                               | D024       | 200.0                      | Pyridine                  | D038       | 5.0                        |
| p-Cresol                               | D025       | 200.0                      | Selenium                  | D010       | 1.0                        |
| 2,4-D                                  | D016       | 10.0                       | Silver                    | D011       | 5.0                        |
| 1,4-Dichlorobenzene                    | D027       | 7.5                        | Tetrachloroethylene       | D039       | 0.7                        |
| 1,2-Dichloroethane                     | D028       | 0.5                        | Toxaphene                 | D015       | 0.5                        |

| Characteristic Wastes Defined as Toxic |            |                            |                       |            |                            |
|--|------------|----------------------------|-----------------------|------------|----------------------------|
| Compound                               | Waste Code | Regulatory Threshold (ppm) | Compound              | Waste Code | Regulatory Threshold (ppm) |
| 1,1-Dichloroethylene                   | D029       | 0.7                        | Trichloroethylene     | D040       | 0.5                        |
| 2,4-Dinitrotoluene                     | D030       | 0.13                       | 2,4,5-Trichlorophenol | D041       | 400.0                      |
| Endrin                                 | D012       | 0.02                       | 2,4,6-Trichlorophenol | D042       | 2.0                        |
| Heptachlor                             | D031       | 0.008                      | Vinyl Chloride        | D043       | 0.2                        |

### What is a Listed Waste?

Listed wastes can be designated as F, K, P, or U listed wastes:

- F waste or Non-specific Sources
- K waste or Specific Sources
- P Waste or Acute
- U waste or Toxic

Some Characteristic Wastes may also be Listed Wastes. If the waste meets one of the definitions (Characteristic or Listed), it is considered hazardous.

The Listed Wastes of primary concern to printers are the F-listed solvents. An F-listed solvent is one comprising more than 10% of these compounds in the original mixture, except for F003. To be a F003 listed hazardous waste, the before use solvent only contains F003 listed solvents, or it contains one or more of the F003 solvents and 10% or more of the F001, F002, F004, and F005 solvents. F-listed solvents common to printers include:

**F001** Halogenated solvents used in degreasing: tetrachloroethylene; trichloroethylene; methylene chloride; 1,1,1-trichloroethane; carbon tetrachloride; and chlorinated fluorocarbons.

**F002** Halogenated solvents: tetrachloroethylene; trichloroethylene; methylene chloride; 1,1,1-trichloroethane; chlorobenzene; 1,1,2-trichloro-1,1,2-trifluoroethane; o-dichlorobenzene; trichlorofluoromethane; and 1,1,2-trichloroethane.

**F003** Ignitable nontoxic solvents: xylene, acetone; ethyl acetate; ethyl benzene; ethyl ether; methyl isobutyl ketone (MIBK); n-butyl alcohol; cyclohexanone; and methanol.

**F004** Toxic non-halogenated solvents: cresols; cresylic acid; and nitrobenzene.

**F005** Ignitable toxic solvents: toluene; methyl ethyl ketone (MEK); carbon disulfide; isobutanol; benzene; pyridine; 2-ethoxyethanol; and 2-nitropropane.

EPA has a webpage with links to different codes, including searchable lists of waste codes: <https://rcrainfo.epa.gov/rcrainfoweb/action/modules/main/glossary/view>.

What resources are available to help determine if waste is either Characteristic or Listed, and therefore, hazardous waste?

It is recommended that you use resources such as Safety Data Sheets (SDS), product labels, and product documents or information sheets (i.e., Environmental Data Sheets) to determine if waste is hazardous.

If laboratory testing is needed, a certified lab must conduct the testing. A *list of Wisconsin certified labs* can be found online at: <http://dnr.wi.gov/regulations/labcert/lablists.html>.

Be careful not to rely solely on SDS to characterize waste streams. Generally, SDSs are safety orientated and do not provide all of the pertinent environmental information for an accurate assessment of waste.

|               |                                      |  |
|---------------|--------------------------------------|--|
| Question HW.2 | Do you generate any hazardous waste? | <input type="checkbox"/> Yes. Continue on with the next section.<br><input type="checkbox"/> No. Skip to the next chapter. |
|---------------|--------------------------------------|--|

### Section C: How to Determine Your Hazardous Waste Generator Status

A printer's *Generator Status* reflects the amount of hazardous waste generated at the facility on a monthly basis. Printers are classified as **Very Small Quantity Generators, Small Quantity Generators, or Large Quantity Generators**.

A **Generator** is a facility, site, operation, or activity that produces or creates hazardous waste.

To determine your generator status, you must calculate the total amount of hazardous waste you generate each month. This amount might vary from month to month, so you must use the HIGHEST generation month during the past calendar year as a baseline.

How do I calculate the monthly generation rate for my facility?

The first step in calculating your generation rate is to total the amount of each type of hazardous waste you generated each month during the past calendar year. Totals must include:

- any hazardous waste generated and accumulated on-site
- hazardous waste packaged and transported off-site
- full or partially full aerosol cans
- sludge and/or material removed from product storage tanks
- still bottoms from on-site recycling units—if a listed solvent was recycled or if the still bottoms are characteristic waste
- waste is hazardous because of the **mixture rule or empty container rule**—see the following section for details on the Empty Container Rule
- used oil, if it contains at least 1,000 ppm total *halogens*

**Mixture Rule:** If non-hazardous waste is combined with any amount of a listed hazardous waste, the total amount of waste is considered hazardous.

Amounts that do not need to be included in your total:

- materials placed directly in a regulated on-site treatment unit, such as a neutralization unit, wastewater treatment units, or totally enclosed treatment unit
- materials being recycled, without prior storage or accumulation, in an on-site process
- universal wastes that are handled properly (see Section C.1 for details)
- solvent-contaminated rags and wipes that are properly managed (See Section C.2 for details)
- still bottoms from on-site recycling units, if the contents are NOT considered hazardous because they are not a Listed or Characteristic waste
- materials discharged to the sewer, if they meet the discharge limits
- used oil, if managed properly (review DNR's publication on **Used Oil Management**, <http://dnr.wi.gov/files/PDF/pubs/wa/WA233.pdf>)

Note that with regulated on-site treatment units like a solvent recycling system, while the reclaimed solvent quantity is not included in the monthly generation rate, the amount of still bottoms generated IS INCLUDED. To determine your monthly hazardous waste generation rate when waste solvent is stored before reclamation (not immediately recycled):

1. Record the initial amount of solvent waste that goes into the still at the beginning of each month.
2. Subtract the quantity of hazardous waste still bottoms generated during the first run, since the still bottoms are contaminants generated from the initial amount of waste solvent (and thus already counted).
3. Add the amount of virgin make-up solvent added to the process and thus added into the reclamation cycle, during that month.
4. Add any additional still bottoms generated during the month (only subtracting the first-run of still bottoms, all others are added).

Refer to DNR's On-site Solvent Reclamation publication for more information:

<http://dnr.wi.gov/files/PDF/pubs/wa/WA1523.pdf>.

### What is the Empty Container Rule?

A container is empty if all wastes have been removed by the methods commonly used to empty that type of container – e.g. pouring or pumping. Empty containers, including aerosol cans, are exempt from hazardous waste regulations and may be managed as non-hazardous waste.

To be considered empty, the container must have:

- less than one inch of waste remaining, or
- 3% or less by weight of waste remaining if the container holds 110 gallons or less, or
- 0.3% or less by weight of waste remaining if the container holds more than 110 gallons.

Containers that held *acutely hazardous waste* must be triple-rinsed to be considered empty. An acutely hazardous waste is defined as:

- any hazardous waste with a Waste Code beginning with the letter P, or
- any hazardous waste with a Waste Code on the following list of F codes: F020; F021; F022; F023; F026; and F027.

|   |
|---|
| <p><b>Acutely Hazardous Wastes</b> are subject to stringent quantity standards for accumulation and generation.</p> |
|---|

Rinse water used to clean empty containers is regulated as hazardous waste if it has any hazardous waste characteristics.

### ***Section C.1: What are Universal Wastes and how do I properly manage them?***

The purpose of this classification is to apply reduced requirements to Universal Wastes to encourage businesses to collect, manage, and recycle certain wastes. Wastes that fall under this classification and that are not managed according to the Universal Waste requirements are subject to full hazardous waste requirements.

#### **Universal Wastes**

- Spent batteries
- Pesticides
- Thermostats and mercury-containing equipment
- Lamps (light bulbs, including fluorescent, mercury vapor, metal halides, high-pressure sodium vapor, low-pressure sodium vapor, and halogen)

In addition, DNR has classified antifreeze as a Wisconsin-Specific *Universal Waste* as long as it is properly recycled. For more information on antifreeze disposal, read the publication **Managing Used Antifreeze** at: <http://dnr.wi.gov/files/pdf/pubs/wa/wa356.pdf>.

### What must be done to manage Universal Waste so my facility benefits from reduced hazardous waste regulations?

To benefit from reduced regulation you must:

- identify all materials or items you generate from the list above
- manage each waste so leaks, spills, or other releases are prevented
- place the wastes into specially designated containers immediately
- ensure containers are closed, structurally sound, and compatible with the contents
- label waste containers as “Universal Waste” and identify the specific waste item or material in each waste container
- document the length of time waste accumulated on site by dating the labeled container when waste is first placed inside
- train employees in proper handling and emergency procedures
- respond to spills and manage any resulting residues promptly and appropriately
- transport waste to another universal waste handler or destination facility
- maintain documentation that wastes were sent to a universal waste handler or destination facility

### If I manage Universal Waste correctly, what benefits will my facility receive?

Correctly managed Universal Wastes are **not included** when you calculate the total amount of hazardous waste generated by your facility. Other benefits include reduced requirements for accumulation of wastes, transportation and shipment of wastes, and annual reporting.

The following reduced requirements apply to correctly managed Universal Wastes:

- Small and Large Quantity Generators may accumulate correctly managed Universal Wastes, including Wisconsin-Specific Universal Wastes, on-site for up to one year
- solid and hazardous waste transportation license is not required to transport Universal Wastes to another handler or destination facility
- hazardous waste manifest is not required for Universal Wastes during shipment within the state
- Small and Large Quantity Generators do not have to report correctly managed Universal Wastes as hazardous waste on their annual reports

### **Section C.2: How should I properly manage solvent-contaminated wipes?**

The U.S. Environmental Protection Agency (EPA) rule *Conditional Exclusions from Solid Waste and Hazardous Waste for Solvent-Contaminated Wipes* allows exclusions from hazardous waste regulations for reusable and disposable solvent-contaminated wipes under certain conditions. Wipes contaminated with **trichloroethylene** are not eligible for this exclusion. Refer to the publication **Management of Solvent-Contaminated Wipes** for more details: <http://dnr.wi.gov/files/PDF/pubs/wa/WA1207.pdf>.

**Wipe:** A woven or non-woven shop towel, rag, pad, or swab made of wood pulp, fabric, cotton, polyester blends, or other materials.

An **example label** for “Excluded Solvent-Contaminated Wipes” can be found in the Yellow Ink Room.

To be eligible for the **exclusions** from hazardous waste regulations, all **solvent-contaminated wipes** should be managed as follows upon generation:

- solvent-contaminated wipes should not be dripping with solvent



- liquids in containers of solvent-contaminated wipes may cause the material to be regulated as hazardous waste
- store solvent-contaminated wipes in a covered, non-leaking container away from sources of ignition
- clearly label the containers as “Excluded Solvent-Contaminated Wipes”
- do not put other waste or excess solvent in a container of solvent-contaminated wipes.
- store each container for up to 180 days from the start of accumulation
- prior to transporting off-site, remove free liquids from the wipes before sealing the lid to prevent leaks or emissions. The solvent extract must be managed as hazardous waste
- any free liquid can be removed by any of the following methods: keeping the wipes in a container with a false bottom to allow the solvent to percolate through the wipes, hand wringing, mechanical wringing, or other methods
- maintain records to confirm the wipes are being managed appropriately
- solvent-contaminated wipes that can be reused should be sent to a launderer or dry-cleaning facility
  - obtain a contractual agreement for this service, which includes pick-up, cleaning, and delivery of clean wipes
  - record of the name and address of the commercial facility receiving the wipes, as well as documentation that the laundry facility has an approved wastewater treatment system or discharge permit, should be maintained

For solvent-contaminated wipes that could possibly be hazardous waste:

- determine whether wipes that are to be disposed of are hazardous or non-hazardous waste
- dispose of solvent-contaminated wipes by:
  - 1) burning the wipes for energy recovery at a licensed or permitted hazardous waste incinerator or a licensed or permitted municipal solid waste combustor, or
  - 2) disposing wipes in a licensed or permitted solid waste landfill—use a DNR licensed Solid Waste transporter to ship the wipes off-site
- solvent-contaminated wipes that are laundered, dry-cleaned, or burned for energy recovery are not hazardous wastes and do not count toward your generator status
- wipes are not eligible for the exclusion and must be handled as hazardous waste if they:
  - contain listed hazardous wastes other than solvents (such as chromium)
  - exhibit the characteristic of toxicity, corrosivity, or reactivity due to contaminants other than solvents
  - are contaminated with trichloroethylene

Some printers centrifuge the wipes, especially if they have an on-site solvent recovery still. If using a centrifuge to manage wipes, the printer:

- may accumulate wipes for **centrifuging** at a single location within the facility
- should store wipes in a labeled, covered container as stated above
- should evaluate any residue or solvent waste generated from the management of these wipes, (e.g. from the centrifuging process) to determine if it is hazardous
- after centrifuging, should still manage wipes by laundering, dry-cleaning, or burning for energy recovery

### **Section C.3: What is the next step after determining my monthly generation rate?**

After you have calculated the total number of gallons of all hazardous waste in order to determine your monthly generation rate, your next step is to determine the equivalent number of pounds of waste generated monthly. Proceed with one of the following two approaches.

**Approach 1:** Determine the weight of the material by following these steps:

- 1) Weigh an empty one gallon container.
- 2) Fill the container with one gallon of the waste material.
- 3) Weigh the filled container.
- 4) Subtract the weight of the container from the total weight to determine the weight of one gallon of the waste material.
- 5) Multiply the weight of the waste by the number of gallons of waste generated during the month.
- 6) Repeat this process for each type of hazardous waste generated.

**Approach 2:** Use specific gravity to calculate the weight of the material by following these steps:

- 1) Multiply the specific gravity by 8.34 to find the weight of the waste in pounds per gallon.
- 2) Multiply the weight of the waste by the number of gallons of waste generated during the month.
- 3) Repeat this process for each type of hazardous waste generated.

Once you have converted waste generated to pounds, add the pounds together to determine the total of all hazardous waste generated at your facility in a given month. Use this number to determine your generator status.

### What is my Hazardous Waste Generator Status?

Facilities that generate hazardous waste are categorized as Very Small, Small, or Large Quantity Generators. A facility's status is based on the total hazardous waste generated each month.

#### **Hazardous Waste Generator Status Thresholds**

Thresholds have been established to define the maximum amount of waste that may be generated at each Generator Status level. Hazardous waste generator thresholds are:

- **Very Small Quantity Generators (VSQG).** Generating 220 lbs or less per month (less than 27 gallons/month or about half of a 55 gallon drum)
- **Small Quantity Generator (SQG).** Generating more than 220 lbs, but less than 2,205 lbs per month (between 27 and 269 gallons/month or about half of a 55 gallon drum up to four full 55 gallon drums)
- **Large Quantity Generator (LQG).** Generating 2,205 lbs or more a month (at minimum, approximately 270 gallons/month or about 4-5 drums)

Volume measurements are provided for guidance. All records must reflect pounds of waste generated.

For more explanation of the generator sizes, review the DNR's Quick Reference Guide

<http://dnr.wi.gov/files/PDF/pubs/wa/WA1821.pdf>. Compare the total hazardous waste generated at your facility with these thresholds to determine Generator Status.

|                      |                                |   |
|----------------------|--------------------------------|---|
| <b>Question HW.3</b> | What is your generator status? | <input type="checkbox"/> VSQG<br><input type="checkbox"/> SQG<br><input type="checkbox"/> LQG |
|----------------------|--------------------------------|---|

### Am I required to notify DNR of my Hazardous Waste Generator Status?

Unless you are a VSQ, you need to notify DNR of your hazardous waste generator status. Every SQG, LQG, transporter, and person that generates, treats, stores, or disposes of hazardous waste must inform DNR of its hazardous waste activity by completing EPA form 8700-12 "Notification of Hazardous Waste Activity" and submitting this form to DNR. After receiving

**EPA ID Number** is a 12-character number assigned by EPA to each generator, transporter, and treatment, storage, or disposal facility upon request. See the Yellow Ink Room section for procedures for obtaining an EPA ID number.

the notification form, DNR assigns an identification number to the site. This is called your EPA ID number. A VSQG only needs the EPA ID number if manifesting waste. **EPA form 8700-12** can be found at: <https://www.epa.gov/hwgenerators/instructions-and-form-hazardous-waste-generators-transporters-and-treatment-storage-and>

### What if the Hazardous Waste Generator Status changes?

If your Hazardous Waste Generator Status changes, notify DNR at any time by filling out EPA form 8700-12, Notification of Hazardous Waste Activity, or notify DNR when you submit your annual report. Changes in generator status should not occur often. To avoid this situation, printers should place their facility in the highest reasonable generator category, even if the amount of hazardous waste generated would sometimes place the facility in a lower category.

## Section D: How to Properly Manage Waste

Some hazardous waste requirements apply to all facilities that generate hazardous waste and some requirements apply solely based on the facility's Hazardous Waste Generator Status.

### Section D.1: What requirements apply to all hazardous waste generators?

**All** generators must meet the following requirements:

- perform a hazardous waste determination on all waste streams
- mark all containers as "Hazardous Waste"
- use containers that are compatible with the waste and in good condition (not leaking, rusting, or dented)
- keep *incompatible waste* in separate containers
- ensure delivery/shipment of hazardous waste to approved treatment, storage, or disposal facility
- keep all hazardous waste drums/containers closed, except when adding or removing waste

Incompatible waste means a hazardous waste which is unsuitable for:

1. placement in a container because it may cause corrosion or decay of the container or inner liner; or
2. commingling with another waste or material under uncontrolled conditions because it might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes or gases, or flammable fumes or gases.

|                      |   |   |
|----------------------|---|---|
| <b>Question HW.4</b> | Do you meet the requirements that apply to <u>all</u> hazardous waste generators? | <input type="checkbox"/> Yes. Continue on with the next section.<br><input type="checkbox"/> No. Correct immediately. |
|----------------------|---|---|

### Section D.2: How should I mark my containers?

Markings should include, at a minimum, the following:

- in a satellite storage area, the marking can have either the type of waste (i.e. Hazardous Waste) or the specific name of the waste (i.e. spent solvents, dirty rags)
- in the final storage/accumulation area, the marking must say "Hazardous Waste" and have a date (see Section E for information on dating containers)
- prior to shipment, ID the hazard (ignitable, toxic, corrosive, or reactive) for US DOT shipping requirements.
  - Refer to DOT Chart 15, Hazardous Materials Markings, Labeling and Placarding Guide for DOT guidelines

- [https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Hazardous\\_Materials\\_Markings\\_Labeling\\_and\\_Placarding\\_Guide\\_508CLN.pdf](https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Hazardous_Materials_Markings_Labeling_and_Placarding_Guide_508CLN.pdf).

An example of a hazardous waste label that can be used is shown below:

|                                |
|--------------------------------|
| <b>Hazardous Waste</b>         |
| <b>Hazard</b> _____            |
| <b>Accumulation Date</b> _____ |

A full size example for hazardous waste container marking can be found in the Yellow Ink Room section.

|                      |  |   |
|----------------------|--|---|
| <b>Question HW.5</b> | Are your containers properly marked and labeled? | <input type="checkbox"/> Yes. Continue on with the next section.<br><input type="checkbox"/> No. Correct immediately. |
|----------------------|--|---|

### **Section D.3: What requirements apply based on Generator Status?**

The following requirements apply based on your Generator Status.

**VSQGs** must:

- meet the basic requirements for “**all**” generators listed above
- ensure that on-site accumulated hazardous waste does not exceed 2,205 pounds total
- obtain an EPA ID number **ONLY** if you manifest your hazardous waste (refer to Section E.2 for information on manifesting)

Many hazardous waste haulers and treatment, storage, and disposal facilities will not accept materials that are not manifested. VSQGs may transport their own business-generated hazardous wastes—called “self-transport”—to a household and very small quantity generator collection facility. Information on Household and Very Small Quantity Generator Hazardous Waste locations is available at:

<http://dnr.wi.gov/topic/waste/householdhw.html>.

**SQGs** must:

- meet the basic requirements for “**all**” generators listed above
- obtain an EPA ID number
- write the proper date of accumulation on all hazardous waste containers – refer to Section E.1 for an explanation of how to determine the date of accumulation
- meet the storage and accumulation requirements
- inspect all containers once a week – it is no longer a requirement that you keep records of the inspections, but having records reflects best management practices
- use US DOT approved containers and follow US DOT rules when shipping waste off-site
- complete annual reporting (see below for more details) and pay the appropriate fees

**NOTE:** Provide sufficient aisle space to inspect containers - preferably three feet or more. If space is limited, stack drums on pallets. However, flammable wastes may NOT be stacked at any time for fire safety reasons.

- utilize a licensed hazardous waste transporter for disposal
- observe land disposal requirements (refer to EPA's web site: <https://www.epa.gov/hw/land-disposal-restrictions-hazardous-waste>)
- establish emergency procedures and preparedness and prevention procedures (refer to the Yellow Ink Room section for a checklist)
- provide training to employees according to job responsibilities

How do I know if I have US DOT approved containers?

Containers meeting US DOT shipping requirements have greater than 5 gallon capacity only and are stamped or printed with the UN symbol and an 18-22 character alphanumeric code. For more information on US DOT approved containers for hazardous waste shipments:

- read the federal regulation in 49CFR part 178, or
- contact the Hazardous Materials Information Center by calling 1-800-HMR-4922 (1-800-467-4922) Monday through Friday from 9:00 am to 5:00 pm (EST).

**LQGs** must follow the requirements for SQGs, but with a few modifications:

- meet all storage and accumulation requirements
- develop a full Emergency Contingency Plan (refer to the Yellow Ink Room for a checklist)
- maintain training records – review WA-099 at <http://dnr.wi.gov/files/PDF/pubs/wa/WA099.pdf>

How do I complete the annual report for waste generated?

As mentioned above, SQG and LQG are required to report the amount of waste generated for each calendar year and pay the appropriate fees. Occasionally a VSQG may also need to report, but more likely they will complete an Exemption form and submit that to the DNR. The report is completed online, but a paper copy of the signed certification form is required to be mailed to DNR. For more information, go to the Wisconsin hazardous waste annual report web page at: <http://dnr.wi.gov/topic/Waste/AnnualReport.html>.

|                       |   |   |
|-----------------------|---|---|
| <b>Question HW .6</b> | Are you meeting all of the waste handling requirements specific to your generator status? | <input type="checkbox"/> Yes. Continue on with the next section.<br><input type="checkbox"/> No. Correct immediately. |
|-----------------------|---|---|

**Section E: How to Properly Dispose of Waste**

Before shipping hazardous waste, you are allowed to accumulate and store waste under certain conditions.

**Section E.1: Accumulating and Storing Waste**

Requirements for time limits on accumulating hazardous waste are based upon the facility's generator status, as follows:

- **VSQG:**
  - up to 2,205 lbs (approximately 3-5 drums) may be accumulated on site at any one time
  - no time limit
- **SQG:**
  - up to 13,230 lbs (approximately 24-30 drums) may be accumulated on site at any one time

- closely monitor the retention time of the stored waste; waste **must be shipped 180 days** from the accumulation start date on the drum or tank
- if shipping over 200 miles, waste may be accumulated for 270 days
- **LQG:**
  - **no quantity limit**
  - must **ship waste 90 days** from the date on the drum or tank marking indicating the start of accumulation

### How do I determine the date of accumulation for each container?

When waste is first added to a container within the main hazardous waste (central) accumulation area, or when a container is first moved to a central accumulation area from a satellite accumulation area that is the date of accumulation to be written on the container.

### Can I store small quantities of waste near presses or other equipment?

**Yes.** Satellite accumulation allows you to accumulate small amounts (not more than 55 gallons per satellite area) of hazardous waste at or near the point the waste is generated and where the waste is under the control of the operator of the process generating that waste.

An example sign for a Hazardous Waste Storage area and diagram of waste storage and accumulation sites can be found in the Yellow Ink Room.

The main reasons for satellite accumulation are:

- so you can conveniently accumulate waste in the area it is generated
- so you can accumulate waste over a longer period of time without having to ship within the accumulation period (90 or 180 days) in order to avoid shipping a partial drum of waste

No more than 55 gallons of hazardous waste can be accumulated in any one satellite accumulation area. Containers for each of the various wastes generated can be in the same area, but the total quantity of waste in the satellite accumulation area cannot exceed 55 gallons. Wastes generated by different processes and controlled by different operators, could be considered separate satellite accumulation areas.

**IMPORTANT:** LQGs must store all ignitable and reactive wastes at least 50 feet from the property line.

While in a satellite accumulation area, the containers must be:

- marked with the words "Hazardous Waste" or other words that identify the contents (i.e., spent press wash solvent)
- compatible with the waste
- closed, except when adding or removing wastes
- in good condition

If a satellite accumulation area has hazardous waste in excess of 55 gallons, the container(s) holding the excess waste must be marked with the date the excess waste began to accumulate. Within 3 days of filling a container, that container along with any excess waste containers must be moved from the satellite accumulation area to the central storage area. There the container is subject to the 90 or 180 day accumulation requirements.

|                      |   |   |
|----------------------|---|---|
| <b>Question HW.7</b> | Are you following all of the waste storage and accumulation requirements? | <input type="checkbox"/> Yes. Continue on with the next section.<br><input type="checkbox"/> No. Correct immediately. Contact SBEAP for assistance. |
|----------------------|---|---|

## Section E.2: Manifesting and Shipping Waste

### If I manifest waste from my facility, what does this mean and where do I obtain forms?

A manifest is a shipping document used to track hazardous waste from where it is generated to the facility where it will be treated, stored, or disposed.

Generators must use the new EPA Uniform Hazardous Waste manifest, which can only be obtained from EPA authorized printing companies. For a list of registered printers, visit the Approved Registered Printers for EPA's Manifest Registry: <https://www.epa.gov/hwgenerators/approved-registered-printers-epas-manifest-registry>.

**Uniform Hazardous Waste Manifest** is the shipping document that pertains to hazardous waste and that originates with and is signed by the generator.

Go to <http://www.pneac.org/hazwastemanifest/> to watch a video on how to use the manifest.

Each manifest form includes six copies. At the bottom of each page, information is printed in red, indicating the routing designation for that page.

Here's what happens to a manifest form:

1. Manifest packet is signed by generator and transporter at the time of shipment.
2. Generator keeps the "Generator's initial copy" for their records.
3. Transporter travels with the manifest packet to the TSD (designated facility).
4. Manifest packet is signed by the TSD.
5. Transporter keeps the "Transporter's copy."
6. TSD keeps the "Designated facility's copy."
7. TSD sends/mailed the "Designated facility to generator" copy to the generating facility.
8. TSD sends/mailed/submits electronically the "Designated facility to destination state (if required)" to the WDNR (it is required).
9. IF the TSD is not a WI facility, the generator must send a legible copy of the "Designated facility to generator" manifest signed by all parties to the WDNR, AND they must also keep a copy of the "Designated facility to generator" manifest copy for their records.

Note: If the generator does not receive the "Designated facility to generator" copy within 45 days, they must submit an Exception Report to the WDNR by sending a legible copy of the "Generator's initial copy" and a letter documenting efforts to determine the status of the shipment.

Many hazardous waste haulers or TSDs will not accept hazardous waste from VSQGs if it is not manifested. This is important to know before arranging shipment of your waste. Applicable DOT shipping requirements for hazardous materials must be followed.

### Are there any specific issues with transporting some of my wastes?

**Yes. Universal Wastes and solvent-contaminated wipes** have some specific transportation issues.

Refer to page HW-7 for items considered universal wastes.

#### **To transport Universal Wastes, you must:**

- comply with all applicable US and Wisconsin DOT regulations, including, but not limited to, packaging, labeling, marking, and placarding requirements (described on page HW-11)
- respond to releases and manage residues promptly and appropriately
- transport universal waste to a universal waste handler or destination facility
- ensure that tools or equipment used to load or unload waste will not damage containers

- ensure that containers are reasonably secured against movement within the transport vehicle

**To transport solvent-contaminated rags and wipes:**

- DNR does not require a transportation license for rags and wipes that will be laundered and reused.
- A Solid Waste, and possibly a Hazardous Waste, license is required when rags and wipes are transported to other facilities, such as a commercial centrifuge, a facility that blends fuels, or a facility where wastes are burned.

|                      |  |   |
|----------------------|--|---|
| <b>Question HW.8</b> | Are you meeting the proper hazardous waste transportation and shipping requirements? | <input type="checkbox"/> Yes. Continue on with the next section.<br><input type="checkbox"/> No. Correct immediately. |
|----------------------|--|---|

**Section F: Conduct Training**

Based on your generator size, there may be requirements for training employees and keeping hazardous waste training records. To meet DNR's requirements, SQGs and LQGs must provide either classroom or on-the-job training appropriate to each employee's responsibilities.

Common topics for training include:

- Definition of a hazardous waste
- Container management, including labeling and marking
- Responding to emergencies and implementing contingency plans
- Handling empty containers and leaks
- Labeling, marking, and placarding (proper placarding is required by US DOT)
- Waste handling, collecting, segregating, and accumulation
- Universal waste management

SQGs must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies.

LQGs must also keep training records. Although no specific format is required, the following information should be included:

- Employee name, starting date, job title, and job description
- A list of topics for which employees require training
- Date initial training was provided
- Date annual training was provided

LQGs must keep training records on former employees for three years after the date an employee leaves your operation. For current employees, records should be retained until the facility closes.

Review DNR's **Training Requirements and Records** publication for more information:

<http://dnr.wi.gov/files/PDF/pubs/wa/WA099.pdf>.

|                      |   |  |
|----------------------|---|--|
| <b>Question HW.9</b> | Are you meeting the applicable training requirements? | <input type="checkbox"/> Yes. Continue on with the next section.<br><input type="checkbox"/> No. Develop training plan and provide appropriate training. |
|----------------------|---|--|



**Section G: Best Management Practices**

The following best management practices (BMP) are not required, but are highly recommended. Please indicate where you have taken action as recommended (Done), where you might want to take action (Needs Attention), or if the action doesn't apply to your shop or operations (Not Applicable).

| Process or procedure                                     | Done | Needs Attention | Not Applicable |
|--|------|-----------------|----------------|
| Look at ways to reduce solvent input.                    |      |                 |                |
| Reduce solvent through on-site solvent recycling.        |      |                 |                |
| Use recycled/reclaimed solvent in your printing process. |      |                 |                |
| Install equipment to reduce solvent use.                 |      |                 |                |

|                        |   |  |
|------------------------|---|--|
| <b>Question HW .10</b> | Have you adopted any of the recommended BMPs? | <input type="checkbox"/> Yes. Go to the next chapter.<br><input type="checkbox"/> No. Recommended. |
|------------------------|---|--|