

SUSTAINABLE PRINTING WORKBOOK



IOWA

By
Graphic Arts Training & Consulting Group (GATC)
Iowa Waste Reduction Center (IWRC)

ACKNOWLEDGEMENTS

This handbook is a modification of the Compliance Certification Workbook produced by the Printing & Imaging Association of the Mountain States (PIAMS) & Colorado Department of Public Health & Environment (CDPHE). We want to thank PIAMS and CDPHE for granting us permission to reproduce sections of this book and adapt others to the specific requirements of Iowa.

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DISCLAIMER/ABOUT THIS GUIDE

This manual contains information on the main environmental rules that apply to a printing business. Depending on your own situation, there may be other rules, not included in here that you need to consider; also, environmental rules are changing constantly. Therefore, this is intended solely as guidance, and does not replace the actual regulations that apply to a facility at any given time. This (document or tool) cannot be used to bind the Iowa Department of Natural Resources and is not a substitute for reading applicable statutes and regulations.

If you have a small business (less than 200 employees) you can contact the Iowa Waste Reduction Center (IWRC) to evaluate your environmental compliance status (free and confidential service) at 319.273.8905. The IWRC provides expert environmental assistance to Iowa small businesses in all 99 counties. Services range from conducting a waste management on-site review, assisting with environmental paperwork (including permit applications), or just answering questions.

There are other organizations that can help your business comply with environmental regulations if you do not meet the criteria to be helped by the IWRC. Please contact the IWRC at 319.273.8905 to be directed to the proper organization.

You may also contact the Graphic Arts Training and Consulting Group (GATC) at 800.967.8324 or via the web site: GraphicArtsTraining.com. GATC can help you get started in implementing a sustainable green printing project or work with you to establish and/or improve processes for specific programs.

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1 Getting Started

This manual is the first step of a coordinated effort by the Graphic Arts Training and Consulting Group (GATC), Printing Industries of the Midlands (PIM), Iowa Newspaper Foundation (INF), Iowa Waste Reduction Center (IWRC), Iowa Department of Natural Resources (DNR) and Iowa Department of Economic Development (IDED) to help Iowa graphic arts firms develop and implement processes that will lead to sustainable printing.

The Printing and Imaging Association of the Mountain States and Colorado Department of Public Health & Environment originally developed this manual. GATC made needed changes to sections 2, 3 and 4; the IWRC made changes to the rest of the manual to fit the requirements for Iowa printers.

This manual may be used in conjunction with various training offerings designed to help Iowa companies achieve their sustainable management goals and objectives.

2 Sustainable Development

The printing industry, like many other industries in Iowa, is starting to think “green”. From recycling to using energy efficient lighting, smart printing companies realize the benefits of going “green”. Going “green” means thinking about wise business choices within your company to reduce, reuse and recycle.

It means using vegetable-based or other environmentally friendly inks. It means recycling press solutions and plates in the printing process. It means being certified by the Forestry Stewardship Council (FSC), Sustainable Forestry Initiative (SFI) or other sustainable forest initiatives for promoting the use of chain-of-custody certified papers. It means saving energy for the future by using lower wattage lighting or/and purchasing renewable energy. Sustainable development is more than thinking “green”; it is about meeting the demands of the present while taking care of the resources we use today so they are available tomorrow. Sustainable development cannot be achieved by a single enterprise; all businesses need to adopt environmentally sound business principles and translate them into action.

The first step to becoming involved in sustainable development in your company is to choose or formulate the sustainable development principles your business is going to follow. The Coalition for Environmentally Responsible Economies Principle (CERES) is a good beginning for businesses wanting to incorporate sustainable development principles into their operating practices. The CERES includes investors; public pension funds; foundations; labor unions; environmental, religious and public interest groups working in partnership with companies towards the common goal of corporate environmental responsibility. If you prefer to develop your own sustainable development principles then think about incorporating an Environmental Management System (EMS) or a Sustainable Management System (SMS) into your company’s business culture. As you begin to develop a sustainable management program at your facility, think about strategies to better manage your environmental issues and reduce the burden of compliance with the regulatory requirements outlined in this workbook. Tips for a more Sustainable Business Environment (Pollution Prevention Tips) are included in Appendix A.

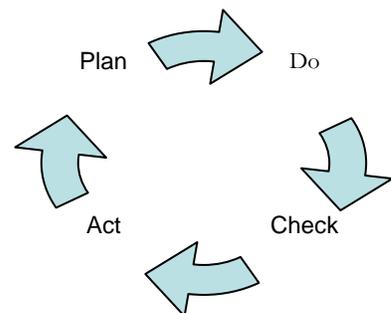


3 Sustainable Management Systems (SMS)

An Environmental Management System or Sustainable Management System (EMS or SMS) is a framework developed by an organization like yours to help improve its environmental performance by taking environmental considerations (also health and safety considerations if feasible) into account when making business decisions and managing risks. Key elements of an SMS are outlined below. The first step to putting together an SMS is to make a commitment and develop an environmental policy; the second is to identify activities, products and services in your business that impact the environment; the third step is to set goals, objectives and targets for your program. The concept of sustainable development needs to be incorporated into the policies and processes of your business and these philosophies should become a way of doing business in your company.

What is an SMS Model?

An SMS follows a Plan-Do-Check-Act Cycle, or PDCA. The SMS Model below shows the process of first developing an environmental policy, planning the EMS, and then implementing it. The process also includes checking the system and acting on it. The model is continuous because an SMS is a process of continual improvement in which an organization is constantly reviewing and revising the system.



What are the Key Elements of an SMS?

Policy Statement - a statement of the organization's commitment to the environment (your Green Position Statement). It is crucial to have buy-in from the bottom up (employees to top management).

Identification of Significant Environmental Impacts - Environmental attributes of products, activities and services and their effects on the environment.

Development of Objectives and Targets - Environmental goals for the company.

Implementation - Plans to meet objectives and targets.

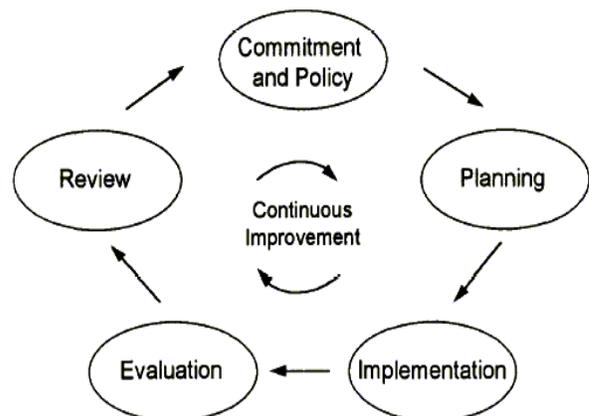
Training - Ensure that employees are aware and capable of their environmental responsibilities to help meet your objectives and targets.

Management review – It is imperative that top management participates.

Key SMS Benefits:

- Improved environmental performance
- Reduced liability
- Competitive advantage
- Improved compliance
- Reduced costs
- Fewer accidents
- Employee involvement
- Improved public image
- Enhanced customer trust
- Meet customer requirements

EMS/SMS Model



4 Chain-of-Custody Certification

Chain-of-Custody Certification

Chain-of-Custody Certification (CoC) is a method for letting your customers know a company adheres to standards for responsible forestry. These certifications are conducted by organizations such as the Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI) and others. These organizations require that a product made of pulp or paper pass through a “chain-of-custody” from a certified forest to a certified paper manufacturer, merchant and printer. Thus the paper is tracked from the forest to final product and a product label allows consumers to recognize products that support the growth of responsible forest management worldwide. Some printers hold dual certifications.



Chain-of-Custody Assurance

Chain-of-Custody (CoC) certification assures consumers and forest product companies that the wood they buy comes from certified forests. Since your business is involved in the production or delivery of certified products (paper), you must hold a FSC, SFI or other CoC certificate in order to make claims about the content in your products.

The Certification Process

Assessments for Chain-of-Custody normally include the following basic procedures.

(NOTE: These procedures can vary depending on the certifying organization.)

1. The business fills out an application to be certified.
2. A budget is created (the application is not binding until the budget is approved by the candidate company).
3. A representative helps your company determine which certification strategy (single, multi-site or group) is the best approach.
4. A service agreement is signed by the company and the certifying body.
5. An auditor visits the company to assess its qualifications for certification.
6. The auditor produces an assessment report.
7. The assessment report is reviewed by the candidate company.
8. A certification decision is made.



Available Certification Programs

The most common certification programs for printing operations include the Forest Stewardship Council (<http://www.fscus.org>), the Sustainable Forestry Initiative (<http://sfiprogram.org>) and the Sustainable Green Printing Partnership (<http://www.sgpppartnership.org>).

5 Hazardous Waste



As a “green” printer, you should be thinking of ways to reduce or eliminate the generation of hazardous waste (see Appendix B for definitions) from your printing operations. If you generate hazardous waste, you must manage your hazardous wastes in a safe and environmentally responsible manner. Federal and state regulations place the burden on you, as the generator, to properly identify, manage and dispose of hazardous waste. The generator is ultimately responsible for the waste from “cradle to grave” and can be held liable for improper management of hazardous waste.

Do You Generate Hazardous Waste?

As a waste generator, it is your responsibility to determine if the waste is hazardous or not. A waste is classified as hazardous if it exhibits any of the characteristics specified by EPA (Appendix C) or is specifically listed as a hazardous waste in EPA regulations (Appendix D).

The classification of a waste is done by either testing the waste using approved methods or using “process knowledge” of the process and materials. In either case, you need to document the waste determination by keeping a record of the results. If the determination is based on test results, you need to keep the lab report. If you apply process knowledge, you need to keep product data sheets, Material Safety Data Sheets (MSDS) or other similar information that were used to make the determination. In many instances, waste disposal companies will provide you with a waste profile upon which a determination of waste classification can be based. If you decide to use the waste profile information, you need to find out if the waste was actually tested or if the profile was based on a review of the waste from MSDSs or other information.

It is important to understand that in some cases, testing may be required due to the limitations of the information provided on technical data sheets and MSDSs. An MSDS only has to list chemicals that pose a threat to human health and safety that are in concentrations greater than 1% and for carcinogens, greater than 0.1%. A 1% concentration is equivalent to 10,000 ppm (1,000 ppm for a carcinogen); therefore, some ingredients in a product that have the potential to generate a hazardous waste may not be listed on the MSDS. If you have questions, contact the IWRC.

When testing is required to determine if a waste is hazardous due to its toxicity, a **Toxicity Characteristic Leaching Procedure (TCLP)** lab test should be done for any of 40 parameters found at http://www.iwrc.org/regsums/RegReports/TCL_Toxicity%20Characteristic%20Leaching%20procedure%20Testing%20Parameters.doc. A summary of the most common tested parameters can be found at Appendix E.

Hazardous Waste Generator Status and Waste Accumulation Requirements

Generator status is based upon the volume of hazardous waste that is generated in a calendar month and the maximum amount of hazardous waste allowed to accumulate on-site. Following are the three hazardous waste generator categories and a brief discussion of the criteria used to define what category fits your specific facility.

Conditionally Exempt Small Quantity Generator (CESQG) – generates no more than 100 kilograms (about 220 pounds) of hazardous waste and no more than 1 kilogram (2.2 pounds) of acutely hazardous waste in any month. There are no accumulation time requirements. Must not accumulate 1,000 kilograms (2,200 pounds) or more of hazardous waste (about four (55) gallon drums) or 1 kilogram (2.2 pounds) of acutely hazardous waste onsite at any one time.

Small Quantity Generator (SQG) – generates more than 100 kilograms but less than 1,000 kilograms

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(between 220 and 2,200 pounds) of hazardous waste and no more than 1 kilogram (2.2 pounds) of acutely hazardous waste in any month. Must not accumulate hazardous waste for more than 180 days from the date waste was first added to the container (270 days if the generator must ship farther than 200 miles from the facility). Must not accumulate more than 6,000 kilograms (13,200 pounds or about 28 (55) gallons drums) of hazardous waste on-site at any one time.

Large Quantity Generator (LQG) – generates 1,000 kilograms (2,200 pounds) or more of hazardous waste or more than 1 kilogram (2.2 pounds) of acutely hazardous waste in any month. Must not accumulate hazardous waste for more than 90 days from the date waste was first added to the container. A LQG has no quantity limits.

Note: Most printing operations do not generate acutely hazardous waste (refer to definitions in Appendix B).

Refer to Table 1 below for an example waste inventory that should be maintained by a facility to record hazardous/non-hazardous waste determinations, document hazardous waste generation rates and determine the applicable hazardous waste generator category (e.g., CESQG, SQG or LQG).

Table 1

Monthly Hazardous Waste Generation – Example

Company ABC generates the following amounts of waste monthly. The hazardous waste is picked up every three months.

Activity	Waste	Hazardous?	Why?	Monthly Quantity (gal)	Monthly Quantity (lb)
Pressroom	Cleaning solvents	Yes	Ignitable (FP <140°F), F-listed	30	250.2
Pressroom	Vegetable-based ink	No	Not toxic or ignitable	Not counted	-
Pressroom	Solvent-based ink	Yes	Ignitable (FP < 140°F)	10	83.4
Pressroom	Specialty Ink	Yes	Toxic (heavy metals)	2	16.68
Post press	Solvent-based adhesive	Yes	Ignitable (FP <140°F), Toxic	5	41.7
Total Hazardous Waste Generated in One Month = 392 lb Maximum onsite accumulation of hazardous waste = 392 lb x 3 months =1,176 lb				47	392 lb (178 kg)

Small Quantity Generator

Note: For this exercise it was assumed all the waste had the same density of water (8.34 pounds per gallon).

Hint: Gallons of waste x density of waste (lbs/gal) = pounds of waste. 1 kilogram = 2.2 pounds.

Generator Status Change Requirements

A hazardous waste generator can change categories. The category is related to the cumulative amount of hazardous waste generated in any month and to the total amount of hazardous waste accumulated at one time, and these amounts may vary from month to month.

If your generator status changes, you must submit a revised RCRA Subtitle C Site Identification Form (EPA Form 8700-12) to the EPA (<http://www.epa.gov/epawaste/inforesources/data/form8700/forms.htm>). It is wise to select the highest generator status to which you might be subject even if you are in a lower category some of the time.

Regulated Waste Notification Requirements

Who Must Notify

Facilities determined to be SQGs or LQG must notify EPA that they generate hazardous waste and obtain an EPA Hazardous Waste Generator Identification Number.

CESQGs are not required to obtain an EPA Hazardous Waste Generator Identification Number according to federal law, but may be asked to have an ID number as a matter of policy imposed by the hazardous waste transportation/disposal company providing service.

Application Process

The application for an ID number is accomplished by completing the form enclosed in EPA's "Notification of Regulated Waste Activity" booklet (EPA Form 8700-12). An EPA identification number is not a permit, it is a number issued by the EPA to identify a facility for hazardous waste management purposes. The notification form is available on the web at <http://www.epa.gov/epawaste/inforesources/data/form8700/8700-12.pdf>. If you have print shops at different locations, every facility that generates hazardous waste will need its own EPA identification number.

Duration of the Notification

The notification and EPA Identification Number remain valid until the EPA is notified in writing that the facility has changed location, has changed ownership, no longer manages hazardous waste, or until the category or general description of their activities changes.

Hazardous Waste Fees

Annual Fees

Facilities that generate hazardous waste are billed annually by IDNR for the Hazardous Waste fees. Generator fees are subject to change on an annual basis. Current information on fees is available at <http://www.iowadnr.gov/land/consites/hwfees/conhwfees.html>.

The hazardous waste generator fees are broken down into categories. In 2009 the fees were due on April 15th. The following fees correspond to the 2007-2008 fees.

Small Quantity Generators - \$25.00 (facilities generating between 220 and 2,200 pounds per month)

Large Quantity Generators - \$250.00 (facilities generating greater than 2,200 pounds a month)

Conditionally Exempt Small Quantity Generators - not required to report activities or pay a generator fee (facilities generating less than 220 pounds per month).

Summary of Generator Requirements

A table summarizing the following generator requirements can be found at Appendix F.

Requirements for Conditionally Exempt Small Quantity Generators (CESQGs)

- Identifies all hazardous waste generated.
- Determines and documents hazardous waste generator status.
- Generates no more than 100 kilograms (220 pounds or about 25 gallons) of hazardous waste and no more than 1 kilogram of acutely hazardous waste in any calendar month.
- Accumulates no more than 1,000 kilograms (2,200 pounds or about five (55) gallon drums) of hazardous waste on-site at any one time.
- Accumulates no more than 1 kilogram (about 2.2 pounds) of acutely hazardous waste on-site at any one time.
- Disposes of hazardous through an EPA-permit hazardous waste management company or ensures delivery to an authorized disposal facility (e.g. Regional Household Hazardous Waste Collection Center). Note: Solid waste landfills are not allowed to accept any hazardous waste for disposal from CESQGs.
- While not required by law, the following hazardous waste management recommendations should be considered for implementation to reduce the likelihood of spills, mismanagement, adverse human and environmental effects and resulting liabilities.
- Personnel handling hazardous waste should receive adequate training to assure they are competent to perform this activity and should have immediate access to a telephone to summon help in the event of a spill. Emergency response telephone numbers should be posted.
- Maintain and operate the facility to minimize the possibility of fire, explosion or any unplanned release of hazardous waste.
- Hazardous waste should be stored in sealed containers that are clearly labeled "Hazardous Waste".
- Hazardous waste storage containers should be packaged, labeled and marked according to the Department of Transportation's (DOT) hazardous materials transport regulations.
- All shipments of hazardous waste should be accompanied by a Uniform Hazardous Waste Manifest and a Land Disposal Restriction (LDR) form (if applicable).
- Copies of laboratory data documenting the hazardous/non-hazardous status of waste, hazardous waste generation rate/storage inventories, manifests/LDR forms, proof of employee training, etc., should be maintained on file to document compliance.
- Attach the final copy of the manifest (signed by the generator, transporters and final disposal facility) to the original manifest copy. This final copy verifies delivery of hazardous waste to an authorized disposal facility.

General Requirements for both SQGs and LQGs



- Identify all hazardous waste generated.
- Determine your hazardous waste generator status.
- Obtain a site-specific generator EPA ID number.
- Ensure hazardous waste is not disposed of improperly on the ground, to the sanitary sewer, storm drains or into the municipal trash.
- Properly store hazardous wastes and pay attention to the hazardous waste accumulation requirements for your generator status.
- Clearly label each container with the words “Hazardous Waste”. This can be accomplished by simple labeling methods, by asking your waste transporter to assist you in obtaining the correct hazardous waste labels or by obtaining them online (e.g., through Labelmaster (<http://www.labelmaster.com/>)).
- Ensure containers and tanks of hazardous waste are in good condition and closed at all times unless filling or draining. Containers cannot be stored in a manner that cause a rupture or leak.
- Use a licensed transporter to ship hazardous waste and ensure the waste is shipped to an EPA-permitted disposal facility.
- Segregates incompatible wastes.
- Mark the date when accumulation began on all hazardous waste containers.
- Inspect storage areas weekly. Inspect containers for leaks, deterioration and compatibility with the hazardous waste stored inside. Containers must be properly sealed and labeled and must be stored with adequate aisle space to allow thorough inspection.
- Maintain a hazardous waste storage area or satellite accumulation area according to Figure 1.
- Use a properly completed hazardous waste manifest when shipping hazardous waste off-site.
- Retain Land Disposal Restriction (LDR) forms, waste analysis data, manifests and other documentation for at least three years (it is recommended that you keep these documents indefinitely).

Specific Requirements for Small Quantity Generators (SQGs)

- Identify all hazardous waste generated.
- Generate more than 100 kilograms but less than 1,000 kilograms (between 220 and 2,200 pounds or approximately between 25 and 250 gallons) of hazardous waste and no more than 1 kilogram (about 2.2 pounds) of acutely hazardous waste in any calendar month.
- Must not accumulate more than 6,000 kilograms (13,200 pounds or about 28 (55) gallons drums) onsite at any one time. If the 6,000 kilogram limit is exceeded, the facility becomes a LQG.
- Ship waste off-site within 180 days (270 days if the generator must ship waste farther than 200 miles from the facility) of the start accumulation date.

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- Receive a copy of the signed manifest from the designated disposal facility within 60 days of the waste being accepted by the transporter. If this copy is not received in 60 days, you must submit a legible copy of the manifest and indicate that the copy has not been received to the EPA.
- Prepare for emergencies in accordance with Section 11.
- Ensure that employees are provided with hazardous waste training including waste handling and emergency response procedures relevant to their job responsibilities. Documentation of training must be retained on-site for all current employees.

Specific Requirements for Large Quantity Generators (LQGs)

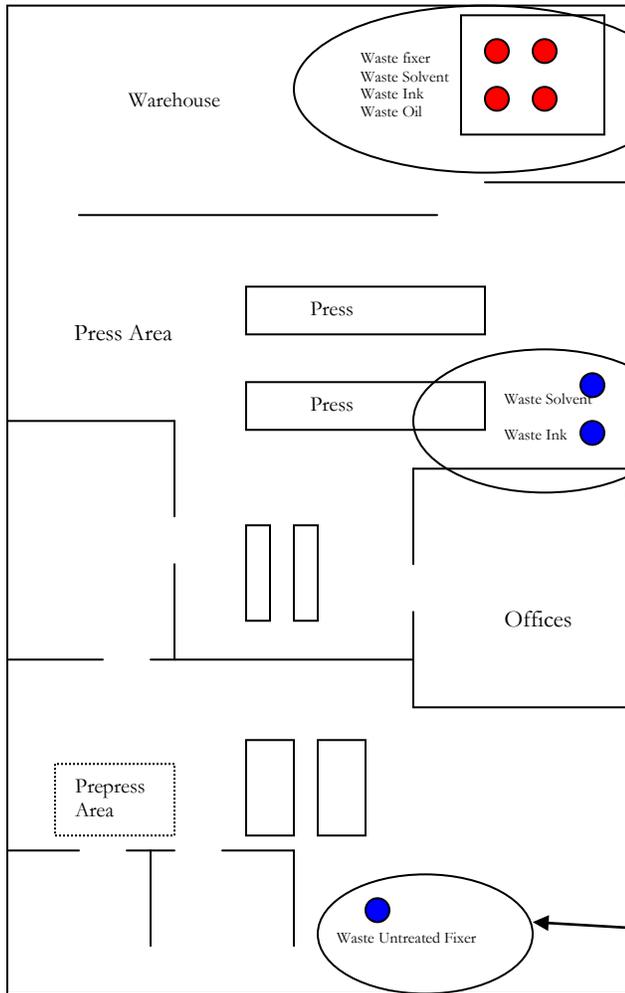
- Since the requirements for LQG are more complex than for the other generators, we recommend you contact the IWRC to make sure you understand these requirements.
- Identify all hazardous wastes generated.
- Generate 1,000 kilograms (2,200 pounds or about 250 gallons) or more of hazardous waste and/or more than 1 kilogram (about 2.2 pounds) of acutely hazardous waste in any calendar month.
- Store more than 6,000 kilograms (13,200 pounds or about 28 (55) gallons drums) of hazardous waste onsite at any one time.
- Submit a Biennial Report to the EPA by March 1 of each even numbered year or upon request. You must keep a copy of this report on file for at least three years.
- Ship waste off-site within 90 days of the accumulation start date on the tank or container.
- Receive a copy of the signed manifest from the designated disposal facility within 45 days of the waste being accepted by the transporter. If this copy is not received in 45 days, you must submit an exception report to the EPA.
- Develop and maintain a formal written Emergency Response/Contingency Plan for the facility.
- Provide facility hazardous waste personnel with classroom and on-the-job training regarding hazardous waste requirements. Employees must receive training within six months of new or changed employment and receive annual refresher training thereafter.
- Create a job title and description for each position at the site related to hazardous waste management and the name of the employee filling each job.
- Maintain records on-site for current and past personnel employed within last three years.

Hazardous Waste Storage Requirements

Requirements for Waste Storage and Satellite Accumulation Areas

Hazardous waste regulations allow you to store hazardous waste in a designated hazardous waste storage area and/or at or near workstations where the hazardous waste is generated. Waste storage areas at or near workstations are called Satellite Accumulation areas. Refer to Figure 1 for storage requirements for Hazardous Waste and Satellite Accumulation areas for SQGs and LQGs.

Figure 1



Hazardous Waste Storage Area

(SQGs and LQGs only)

- Mark off storage area & post sign.
- Install berm area if near floor drains or seal floor drains (recommended).
- Label and date all drums. Label drums with the words, "Hazardous Waste".
- Keep drums closed, clean, and in good condition.
- Inspect drums weekly for leaks, deterioration and labels. Document inspections in a logbook that is maintained on-site.
- Maintain adequate aisle space in case of emergency.
- Date the drum when the first drop of waste is added to the container (accumulation start date).
- Must be equipped with or provide immediate access to: Internal communications or alarm system; A telephone to summon emergency assistance from local authorities; Fire extinguisher and control equipment; Spill control equipment, and; Water to supply hoses or sprinkler systems.

Hazardous Waste Satellite Storage Areas

(SQGs and LQGs only)

- Area is under control of operator generating waste.
- Containers are at or near point of waste generation
- Limit of one (55) gallon waste drum of hazardous waste (1 quart of acutely hazardous waste).
- Separate processes should be labeled as separate satellite areas.
- Label drums with the words, "Hazardous Waste- Satellite Accumulation".
- Keep drums closed, clean and in good condition.
- Take as long as necessary to fill drum.
- When drum is full, immediately date the drum and move to hazardous waste storage area or ship offsite (within three days).

Emergency Response Requirements

Emergency Response Requirements for SQGs and LQGs

- Operate and maintain your facility in a manner to minimize the possibility of fire, explosion or release of hazardous waste.
- Designate an Emergency Coordinator. The Emergency Coordinator must be onsite or on call for emergency response 24 hours a day. Employees must be familiar with and be able to identify the name of the Emergency Coordinator.
- Place a telephone or communication system near areas where hazardous waste is stored or generated to alert employees or call for assistance in case of an emergency.
- Post the following information by the telephone (SQGs). Refer to Appendix G for an example.
 - Name and telephone number of the emergency coordinator.
 - Telephone number of the fire department (unless your facility has a direct alarm).
 - Location of fire extinguishers, spill control materials, and if present, the location of the fire alarm.
- Post evacuation route maps and exit signs in areas where hazardous wastes are handled or stored.
- Have portable fire extinguishers and/or water supply for fires. Ensure adequate water pressure for the sprinklers. Adequate water pressure can be determined during the annual sprinkler test required by OSHA and the local fire department.
- Have facility communications or alarm systems, fire protection equipment, spill-control equipment and decontamination equipment tested and maintained as necessary to ensure its proper operation in case of emergency.
- Maintain adequate aisle space between containers and tanks to allow unobstructed movement in case of an emergency.
- Make arrangements for emergency response with local authorities (police, fire, local health departments and hospitals).

Top Ten Hazardous Waste Violations

	Top Ten Hazardous Waste Violations For Printers
<input type="checkbox"/>	Failure to make a correct hazardous waste determination. This is most common for F-listed rags. However, it is also common for printers to call their blanket wash hazardous when it is not.
<input type="checkbox"/>	Improper disposal of hazardous waste. This violation typically results from the failure to make a correct hazardous waste determination. Failure to recognize a hazardous waste leads to the improper disposal of that waste.
<input type="checkbox"/>	Failure to post emergency response information by the telephone (SQG and LQG).
<input type="checkbox"/>	Failure to provide hazardous waste training (SQG and LQG).
<input type="checkbox"/>	Failure to properly label containers of hazardous waste with the words "Hazardous Waste" (SQG and LQG).
<input type="checkbox"/>	Failure to properly mark containers of hazardous waste with an accumulation start date (SQG and LQG).
<input type="checkbox"/>	Failure to keep containers of hazardous waste closed except for when it is necessary to add or remove waste from the container.
<input type="checkbox"/>	Failure to conduct weekly inspections of areas that are used for accumulation of hazardous waste (LQG and SQG).
<input type="checkbox"/>	Failure to develop a complete contingency plan (LQG).
<input type="checkbox"/>	Failure to provide and document annual hazardous waste refresher training (LQG).

6 Universal Waste

The Universal Waste (UW) Rule was put into place to ease the regulatory burden for businesses dealing with common hazardous wastes. It allows a longer collection time (one year) making recycling these wastes more feasible. The UW Rule also has fewer recordkeeping, training and reporting requirements compared to those for other hazardous wastes. The UW Rule reduces the management requirements for certain wastes to encourage recycling and proper disposal.

List of Universal Wastes:

- Waste batteries (except lead acid batteries)
- Certain pesticides
- Mercury-containing devices (the elemental mercury must be housed within an outer metal, glass or plastic casing)
- Lamps or the bulb or tube portion of an electric lighting device

Requirements for Handlers of Universal Waste

- Accumulates less than 5,000 kilograms (about 11,000 pounds) of universal waste (the total of all types of universal waste on-site at any one time).
- Accumulates universal waste for no longer than one year unless it is necessary to do so to facilitate proper recovery, treatment or disposal (you must be able to prove it was necessary). You must be able to demonstrate accumulation times.
- Prohibited from on-site disposal or treatment.
- Not required to notify the EPA of universal waste management activities.
- Manages universal waste in a manner to prevent releases to the environment.
- Labels or marks the universal waste or the container with “Universal Waste – type of waste” or “Waste – type of waste” or “Used – type of waste”.
- Trains all employees who handle or manage universal waste on proper handling and emergency procedures appropriate to the types of universal waste handled and documents such training.
- Immediately contains all releases of universal wastes. If the release is hazardous waste (e.g., mercury contaminated absorbents), it must be managed as such.
- Ships to an authorized facility (e.g., another universal waste handler, a permitted hazardous waste treatment, storage and disposal (TSD) facility, a legitimate recycler or a foreign destination).
- Maintain records of universal waste shipments.

7 Other Wastes



Used Oil

Printing operations typically generate used oil from operating and maintenance processes. There are specific requirements for the storage and transport of used oil. A summary of the requirements for used oil is listed below:

- Containers and tanks used to store used oil must be in good condition, not leaking and labeled with the words “Used Oil”.
- Containers of used oil stored outdoors must be kept closed and properly labeled.
- Mixtures of used oil and listed hazardous waste (e.g., F-listed hazardous wastes) are subject to regulation as hazardous waste rather than used oil.
- Mixtures of used oil and non-hazardous solid waste are regulated as used oil if the mixture will be burned for energy recovery.
- Mixing used oil and hazardous waste with the purpose of managing it as used oil could be considered treatment and may be subject to permitting requirements.
- Develop a spill clean up plan that outlines how you will stop the release of used oil to the environment in the event of an accident. If you have a release, you should:
 - Stop the release;
 - Contain the released used oil;
 - Clean up and manage the released used oil, and;
 - Take measures to prevent future spills or leaks.
 - Records documenting the selected management practices should be maintained to verify compliance.

If you have the capacity to store greater than 1,320 gallons of used oil and/or other petroleum products in containers with a 55-gallon capacity or greater, you must comply with Spill Prevention Control and Countermeasure (SPCC) requirements. Contact the IWRC for assistance with SPCC regulations, if necessary.

- You can recycle your used oil through one of the following options:
 - Provide to a used oil marketer (http://www.iwrc.org/NewVendor/sub_class_report.cfm?ClassID=13&SubClassID=35).
 - Provide directly to a burner. By doing so, you become a marketer and must follow the marketer requirements including testing.
 - Burn on site in a used oil furnace. Used oil must be generated on site or collected from (do-it-yourselfers (DIYs) only. The heater must be vented to the outside and have a maximum BTU capacity less than 0.5 million BTU/hr.

- Self-transport used oil in quantities less than 55-gallons to a state-recognized used oil collection center.

Reusable Rags, Shop Towels and Absorbents



Rags, shop towels and other reusable absorbents that are contaminated with listed hazardous waste or that exhibit a hazardous waste characteristic are considered to be exempt from the provisions of the EPA hazardous waste regulations if they are picked up, cleaned and delivered back to your printing shop by a laundering service that uses a solvent-based dry cleaning process to clean the rags or a water-washing commercial laundry with all appropriate wastewater discharge permits from the local municipal wastewater treatment plant. Commercial dry cleaning is preferred because this process enables recovery and destruction of the contaminants removed during the dry cleaning process. Materials contaminated with solvents, resins, lacquers, etc., cleaned in commercial water-washing facilities are simply transferring the contaminants to the water, which is discharged to the sanitary sewer. The water is then treated by the municipal wastewater treatment facility. Laundering may be done at your facility only with the written approval of the local sewer district. Reusable absorbent materials cleaned by such contractual/closed loop cleaning services would not have to be managed as hazardous waste when on site; do not need to be shipped under a manifest to a licensed hazardous waste treatment, storage or disposal facility, and do not count toward the total monthly on-site generation of hazardous waste. A copy of the current laundering contract should be maintained in your operating files.

Safe handling and storage of the shop towels and reusable absorbents is your responsibility. They must be stored in sealed and labeled containers. The rags and wipes are not exempt from the hazardous waste regulations if free liquid hazardous waste is dumped onto the absorbents or if the absorbents are saturated with free liquid hazardous wastes. One way to ensure that no free liquids are present is to wring out the soiled materials and collect the released liquid for proper hazardous waste handling and disposal. If you are unsure as to the type of waste involved, you should make a hazardous waste determination prior to disposal.

Disposable rags, shop towels and other absorbents should be considered solid waste subject to a hazardous/non-hazardous waste determine as discussed previously.

Aerosol Cans



Aerosol cans that are still in use or that contain useable product are not yet considered wastes. Aerosol cans that are empty (no more than 3% of originally product by weight) or that contain materials that are not considered hazardous wastes may be managed as solid waste and can be recycled or sent to a solid waste landfill. You are responsible for determining if your aerosol cans are hazardous. Sometimes aerosol products must be discarded before they are completely empty (e.g., the spray mechanism no longer operates, the propellant is spent, or the product is no longer used). The contents remaining in an aerosol may be considered spent and may be considered hazardous waste. If your facility uses a lot of aerosol cans, you may want to purchase a crushing device that punctures and crushes the cans for recycling, expelling the liquid product into a sealed container that is properly labeled for disposal. If the aerosol cans contain a hazardous waste, you must manage them as a hazardous waste (Section 5).

Computer and Other Electronic Wastes

Electronic equipment like computer monitors, central processing units (CPUs), scanners and cell phones contain a number of hazardous constituents such as lead, mercury, arsenic, cadmium, chromium and silver. Many of these constituents are found on the circuit boards or in the glass. CPUs also contain a battery such as nickel-cadmium, lithium or sealed lead



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acid. These constituents are not a concern while the equipment is in use, but if disposed of in a landfill, harmful chemicals could leach out and contaminate groundwater and soil.

Disposal of waste electronics from your business is regulated as hazardous waste in Iowa. The most recent data available demonstrates that cathode ray tubes (CRTs) from color monitors and color televisions consistently exceed the regulatory limit for lead. As a result, color monitors and color televisions from your business that are destined for disposal must be managed as hazardous waste (Section 5), unless you have tested your equipment to show that it is not hazardous or if you have other supporting data from the manufacturer.

The state of Iowa strongly encourages the reuse, refurbishment or disassembly for materials recovery (collectively called "recycling") of end-of-life computer equipment instead of disposal of these materials. More information on computer and electronic waste is available online at <http://www.iowadnr.gov/waste/recycling/ewaste.html>.

8 Wastewater Requirements



Discharges to the Sanitary Sewer

Printing facilities are not allowed to discharge hazardous waste to the sanitary sewer system. Industrial waste (non-domestic wastewater) cannot be discharged to the sanitary sewer system without notifying the local sanitation district or publicly owned treatment works (POTW). Be prepared to provide information to the sanitation district regarding the proposed wastewater discharge. The following information may be requested:

- A description of the substances proposed for discharge;
- A description of the process generating the waste;
- The quantity of waste to be discharged (e.g., gallons per day or gallons per month);
- The frequency of discharge (e.g., one-time, continuous);
- A description of any treatment prior to discharge (e.g., neutralization);
- Analytical data on the proposed discharge;
- Material Safety Data Sheet(s) on the substances proposed for discharge.

Contact the IWRC for guidance. More information on wastewater discharge limits is available online at <http://www.iowadnr.gov/water/pretreatment/elimits.html>.

Discharges to a Septic System

Printing facilities that have a private septic system must not discharge any industrial wastewater into that septic system. Only domestic wastewater (bathrooms, kitchens, etc.) may be discharged to a septic system.

Other Discharges

Printing facilities must not discharge any industrial wastewater to the ground or surface water (storm drain, stream, lake or pond).

Shipment of Wastewater Offsite

If your wastewater is hazardous, you must use a licensed transporter to ship it off-site. A precious metals transporter can transport silver-bearing wastewater and sometimes non-hazardous wastewater (developer and rinse water). If the wastewater is non-hazardous, a septage hauler may transport the wastewater to your local POTW if it is permitted to do so. You must have written approval from the local sewer authority prior to transporting wastewater to your local POTW. Reuse or recycling is encouraged when feasible.

9 Air Emissions



Printing facilities typically emit air pollutants that are regulated by the IDNR. Depending on the type and amount of air pollutants emitted, your company may have to report air emissions or obtain an air permit. It is important that you make this determination prior to the start up of your printing operations because you cannot start construction or operate without a valid air construction permit. Emissions of volatile organic compounds (VOCs) constitute approximately 98 to 99 percent of all releases in the printing industry. Some of these VOCs are also hazardous air pollutants (HAPs). Other potential air emissions for the industry are listed in this section.

Volatile organic compounds (VOCs) are chemicals that contribute to the formation of ground-level ozone, a component of smog by evaporation from chemicals used in the printing and other industries. Although ozone is needed in the upper atmosphere, in the lower atmosphere, ozone contributes to air pollution and can impact public health.

Hazardous air pollutants (HAPs) are compounds that have been included on the Environmental Protection Agency's (EPA) list of 187 chemicals that can have detrimental effects on humans and the environment. The list of HAPs regulated by EPA and Iowa is available online at <http://www.epa.gov/ttn/atw/orig189.html>.

The most significant sources of VOC emissions in printing activities result from evaporation of the fountain and cleaning solutions that are used in the pressrooms. Solvent-based lacquers and adhesives can also be a significant source. Other sources include binding, coating and drying operations and ink storage and mixing.

Printing facilities may have boilers, heaters, press dryers and air pollution control equipment such as a thermal oxidizer to produce heat for certain processes. Combustion of fossil fuels like natural gas and fuel oil produce criteria pollutants such as nitrogen oxides, sulfur oxides, carbon monoxide and particulate matter. Emissions from this type of equipment may be reportable and should be considered when reviewing potential air emissions from your printing operations.

Paper slitting, folding and cutting operations generate particulate matter (paper dust). Particulate emissions can also be released from combustion of fuel from press dryers and from press materials as they pass through the dryer. Particulate emissions from these operations are minimal and are not typically reportable air emissions.

This section will summarize the IDNR requirements that are applicable to minor sources (see Appendix B for definitions). If you are not a minor source you will need to comply with different environmental regulations and should contact the IDNR for help. If your shop has less than 100 employees, the Iowa Air Emission Assistance Program (IAEAP) from the IWRC can help you get in compliance with air regulations.

Air Construction Permits

In Iowa, the IDNR enforces air pollution regulations, except in Linn county, where the Air Quality Division of the Linn County Public Health Department (<http://www.linncleanair.org/>), and in Polk county, where the Air Quality Division of the Public Works Department (<http://www.airquality.co.polk.ia.us/rules.aspx>) are in charge of enforcing air regulations.

You are required to obtain a Construction Permit before you begin construction of a new air pollution source or modification of an existing one. Emission sources include both individual pieces of equipment (e.g., presses, generators, ovens, boilers) and activities that release emissions (e.g., printing presses and solvent cleaning processes). If there are any changes in processes, emissions, control equipment, work

practices or ownership, you must notify the IDNR of the change(s), and ask if a permit application to modify the existing permit is required.

Your air permit defines the type of air pollution control measures that will be used, sets air pollutant emission limits (such as VOC and HAP emission limits) and may include additional requirements. Take the time to review your air permit and be familiar with your regulatory requirements. More information on the air permitting process is available online at <http://www.iowadnr.gov/air/prof/const/const.html>.

Your print shop may be required to maintain air emission records for VOCs, HAPs, and/or other air pollutants as specified in your air permit. These records must be available to the IDNR for inspection upon request. Your facility should maintain a copy of the most recent air permit, air emissions calculations and other documents as required by your air permit.



Remember, your goal, as a “green printer” is to eliminate the use of environmentally harmful products and/or generate the least amount of pollution. To do this, evaluate the products you use and determine if there are alternative products that could be used to reduce or eliminate VOC, HAP and other air pollutant emissions in your operations.

Common Exemptions Used by Printers

For some facilities, certain categories of sources are exempt from permit requirements because the emissions from those sources are considered to have very little impact on air quality. Exempt sources are listed in the Iowa Administrative Code 567—22.1 (2) (455B) and is available online at <http://www.legis.state.ia.us/Rules/2000/iac/567iac/56722/56722.pdf>. If you have any questions about these requirements, contact the IWRC.

Small Unit Exemption (SUE)

The small unit exemption (SUE) may be used for emission units and associated control equipment (if applicable) that emit less than the small unit thresholds (specified in 567 IAC 22.1(2)w(1)) on a 12-month rolling total basis provided the plant-wide totals are below the major source thresholds (see Appendix B for definitions). The SUE emission thresholds are:

- 5 tons per year of sulfur dioxide
- 5 tons per year of nitrogen oxides
- 5 tons per year of volatile organic compounds
- 5 tons per year of carbon monoxide
- 5 tons per year of particulate matter
- 5 tons per year of hazardous air pollutants
- 2.5 tons per year of PM-10
- 40 pounds per year of lead and lead compounds expressed as lead

Boilers

A printing facility that has a boiler with a heat input capacity greater than 10 million British Thermal Units per hour (MMBtu/hr) is typically required to obtain an air permit. IDNR air regulations include two reporting exemptions for small boilers:

- Boilers that burn natural gas or liquid petroleum gas with a maximum heat input capacity of less than or equal to ten (10) MMBtu/hr are exempt from permit requirements, and;
- Boilers that burn fuel oil, coal, untreated wood, untreated seeds or pellets, or any other untreated

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vegetative materials, with a maximum heat input capacity of less than or equal to one (1) MMBtu/hr are exempt from permit requirements.

For more information, consult the 567 IAC 22.1(2) a and b.

Generators

Power generators that were previously exempted from air permitting requirements may now have to be permitted. Compressed Ignition power generators may be subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines also known as the "RICE Rule" (<http://www.epa.gov/ttn/atw/rice/fr15jn04.pdf>) and may have to be permitted under the "New Source Performance Standard" (NSPS) found in 40 CFR Part 60 Subpart IIII (<http://www.epa.gov/ttn/atw/nsps/cinsps/fr11jy06.pdf>). If your printing facility has or will purchase an emergency generator, the unit may have to be certified to meet the required Non-road Engine Tier standards and your facility will have to comply with specific emission standards for operating the generator. A Registration Form for generators rated horsepower less than 400 is required by the IDNR. This form is available at <http://www.iowacleanair.com/prof/const/const.html>.

Adhesives

An exemption exists for operations using adhesives that are not applied with a spray system and that use 1,000 gallons or less of adhesives and solvent (for the associated cleaning operations) annually. Records shall be maintained on site by the owner or operator for a period of at least two calendar years to demonstrate that adhesive or solvent usage is at or below the exemption threshold (567 IAC 22.1(2) dd).

Another exemption exists for any production surface coating activity that uses only non-refillable hand-held aerosol cans, where the total VOC emissions from all these activities at a stationary source do not exceed 5.0 tons per year. You will need to keep records of the monthly use of aerosol cans and the corresponding VOC emissions.

Emission Inventories

Facilities not subject to the Title V Operating Permit Program (<http://www.iowadnr.gov/air/prof/oper/oper.html>) are required to submit a minor source emission inventory questionnaire (MSEIQs) every three years. The State of Iowa is split into thirds (eastern, central and western) to stagger the number of inventories reviewed and quality-assured in a given year (in 2009 the western part of the state will be filing MSEIQs for calendar year 2008 emissions). The MSEIQ is intended to collect, in a standard format, information about the sources and quantity of air pollutants emitted from small to medium size facilities.

In order to have the information required to prepare an EI, the facilities need to keep track of the amount of materials used during the year (e.g., gallons of solvents, coatings and inks used) and keep up-to-date MSDS for each of these materials. Also, if the facility is claiming a SUE, you need to include the SUE justification document within the MSEIQ.

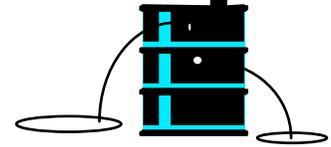
This information will assist IDNR in continuing to manage our air resources. This includes planning pollution control programs, identifying general emission levels and locating monitors to ensure our air meets federal health standards. The inventory will help characterize public health risks and track air quality changes. Lastly, the data will help Iowa and other states plan strategies to manage pollution that drifts across state boundaries and different regions of the nation.

For more information on MSEIQs, go to <http://www.iowadnr.gov/air/prof/emiss/msemis.html>. The IWRC can help your facility fill out a MSEIQ if you have less than 100 employees.

Top Ten Air Pollutant Violations

Top Ten Air Pollutant Violations for Printers	
<input type="checkbox"/>	Failure to obtain an air construction permit.
<input type="checkbox"/>	Failure to comply with Small Unit Exemptions (SUEs) limits and air permit e.g., exceedance of throughputs or VOC limits.
<input type="checkbox"/>	Failure to submit a minor source emission inventory every three years.
<input type="checkbox"/>	Failure to maintain appropriate records to demonstrate compliance with an air permit limit e.g., VOC and HAP emissions records, rolling 12-month totals.
<input type="checkbox"/>	Failure to maintain proper information documenting applicable exemptions.
<input type="checkbox"/>	Failure to notify the Division of a change in equipment or process.
<input type="checkbox"/>	Failure to notify the Division of a name change or transfer of ownership.
<input type="checkbox"/>	Failure to install control equipment.
<input type="checkbox"/>	Failure to use required control equipment.
<input type="checkbox"/>	Failure to properly maintain control equipment, including documentation of appropriate operating parameters and maintenance.

10 Spills and Reporting



Spill Release Reporting

When a chemical spill or release occurs at a facility, there are a number of reporting and notification requirements that must be followed by an authorized person at the facility where the spill or release occurred. The Superfund Amendments and Reauthorization Act (SARA) Title III regulates release reporting. Facilities such as printing operations must immediately report any release that exceeds the reportable quantity (RQ) for a specific chemical to the agencies listed below. Reporting is mandatory for any chemical on the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) list or on the Extremely Hazardous Substance (EHS) list (EPCRA Section 302) and you must report within 15 minutes of the release.

Releases of Extremely Hazardous Substances that equal or exceed the Reportable Quantity (Section 304 EHS RQ) are subject to state and local reporting. Releases of CERCLA Hazardous Substances that equal or exceed the RQ are subject to reporting to the National Response Center (NRC) and also to the state and local agencies listed below. A searchable database of reporting materials is available at <http://web-services.gov/lol/>. A list of chemicals and their reportable quantities is available online at <http://www.epa.gov/emergencies/tools.htm#lol>. This list is referred to as the SARA Title III List of Lists (LOL). The List of Lists provides RQs in pounds. If your release is in another unit, such as gallons, you must calculate the release into pounds.

In addition to telephone notification, the responsible party must send written notification describing the release and associated emergency response to both the IDNR and your Local Emergency Planning Commission (LEPC) as soon as practicable after the release. Remember to always plan ahead, be prepared to respond and report before an accident happens.

1. National Response Center (NRC)
1(800) 424-8802 (24-hour)
2. IDNR Emergency Response & Homeland Security Unit
(Environmental Hazardous Conditions)
(515) 281-8694 (24-hour)
3. Local Emergency Planning Committee (LEPC)
A list of LEPC is available online at <http://www.iowadnr.gov/serc/lepc.html>.
4. Transportation incidents should be reported to 911.



Information on spill release reporting is available online at <http://www.iowadnr.gov/epcra/index.html>.

Spill Response

If you have a spill at your facility, the following actions are recommended:

- Have a plan for spill response before an accident happens.
- Train employees on spill response procedures.
- Evacuate the immediate area of personnel.
- Shut down or disconnect equipment that may cause a spark or fire.
- Secure the area with tape or barricades.
- Identify the hazardous materials without being exposed to the material.
- Utilize only trained personnel with appropriate personnel protective equipment (gloves, respirator, chemical suit, etc.) to contain and clean up the spill.

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- Make sure that you have the Material Safety Data Sheet (MSDS) for all of your products available (and employees know where the MSDS book is kept) in case of an emergency.
- If the spill response exceeds in-house capabilities, contact the fire department or a private emergency response contractor.
- Try to segregate reusable and waste materials. Place waste into approved Department of Transportation (DOT) containers and label the container with the contents.
- Document the clean up effort.
- If soil or water contamination is noted, determine the quantity of material lost and contact the IDNR and other agencies as required.
- Ensure proper federal, state and local government agencies are notified in accordance with the spill reporting requirements in this section if the quantity released/spilled exceeds the RQ for that material.

11 Emergency Planning and Community Right-to-Know Requirements



The Emergency Planning and Community Right-to-Know Act (EPCRA) requires reporting and notification for certain hazardous chemicals. Under EPCRA, businesses are required to report chemical inventories for those chemicals stored in excess of threshold planning quantities (TPQ) and notify authorities in the event of a toxic release. EPCRA was developed to ensure that states and communities have information from businesses like yours in which to develop chemical emergency plans and to provide public access to information about the use and storage of chemicals in their communities.

Emergency Response Planning (EPCRA Sections 301-303)

A facility that possesses any Extremely Hazardous Substances (EHS) at or above the TPQ is obligated to follow emergency planning requirements and must notify the Iowa Homeland Security and Emergency Management Division, the Local Emergency Planning Commission (LEPC) and the fire department. TPQs are listed by chemical name on the list of EHSs. Under this section, your business must designate an emergency coordinator to participate in the emergency planning process and provide any information requested by the LEPC to facilitate emergency planning.

Emergency Notification (EPCRA Section 304)

Facilities must provide an emergency notification and a written follow-up notice to the Local Emergency Planning Committee (LEPC) and the State Emergency Response Commission (SERC) (for any area likely to be affected by the release) if there is a release into the environment of a hazardous substance that is equal to or exceeds the minimum reportable quantity set in the regulations. In Iowa these reports are made to the Iowa Department of Natural Resources at (515) 281-8694.

This requirement covers Extremely Hazardous Substances (EHS) regulated under EPCRA and CERCLA hazardous substances (refer to Definitions in Appendix B). Initial notification can be made by telephone, radio or in person, with written follow-up submitted to the CEPC and LEPC as soon as practicable after the release. Since emergency notification applies to CERCLA hazardous substances as well as those listed in EPCRA, your business could be subject to emergency notification in the event of a release, even though you may not be required to follow any other provision of EPCRA.

Community Right-to-Know (EPCRA Sections 311 and 312)

Community Right-to-Know Requirements apply to a facility that has at any one time:

- Any EHS in a quantity greater than 500 pounds or the Threshold Planning Quantity (TPQ), whichever is less; or
- Any other hazardous chemical as defined by OSHA in a quantity of 10,000 pounds or more.

For those hazardous chemicals and EHS above these threshold amounts, your business must submit a list of the chemicals and their associated hazards to the CEPC, the LEPC and the local fire department. You must also annually submit a hazardous chemical inventory report to the CEPC, LEPC and the local fire department for those hazardous chemicals and EHS that exceeded thresholds at any one time during the preceding year. The State of Iowa requires you to submit the TIER II report as the annual reporting form. Guidance on TIER II reporting is available online at <http://www.iowadnr.gov/epcra/tier2.html>. You should contact your LEPC and the fire department to determine if they require additional reporting.

Toxic Release Inventory (TRI) (EPCRA Section 313)

Printing facilities with ten or more full-time employees that **Process or Otherwise Use** a listed toxic chemical above threshold quantities are required to complete a **Toxic Chemical Release Inventory (TRI)** form and submit it annually to EPA and the State by July 1 of every year. This report accounts for all losses of a chemical through business activities including air emissions, hazardous wastes, water discharges and accidental spills and releases. Reporting levels are generally 25,000 pounds of a regulated material processed in a reporting year or 10,000 pounds of the material considered otherwise used. There are lower thresholds for chemicals of special concern which are persistent, tend to bioaccumulate or are highly toxic. For printers, if a chemical becomes part of the final product such as a pigment, it is classified as "Processed". If the chemical does not become part of the final product such as a cleaning solvent or fountain solution additive, it is classified as "Otherwise Used".

Most printers are not required to report under TRI because they do not use enough chemicals on the list to trigger reporting. However, to confirm this, you should prepare a list of the products that are used in the greatest quantity such as inks, coatings, cleaning solvents, etc. and unless 10,000 pounds of any of these products were used, then reporting is not necessary. If more than 10,000 pounds was used, then the ingredients in those products should be compared to the Section 313 list to see if any chemicals in them appear on the list. If so, a calculation of individual usage should be performed. It is important to also look at the Persistent Bioaccumulative and Toxic (PBT) chemicals as they have very low reporting thresholds. TRI forms and instructions are available online at <http://www.epa.gov/tri/report/index.htm> or by calling the EPCRA Hotline at 1(800) 424-9346. A guidance document specifically for printers developed by the EPA entitled, "Emergency Planning and Community Right-to-Know Act Section 313 Reporting Guidance for the Printing, Publishing, and Packaging Industry" is available online at www.epa.gov/tri/guide_docs/pdf/2000/00printing.pdf. This document provides examples and detailed explanations on TRI reporting for the Printing, Publishing and Packaging Industry.

12 Continual Improvement



If you own or operate a commercial printing operation and are concerned with business competitiveness, environmental regulations, waste, and a sustainable business environment, moving beyond compliance is essential for your business. Using this workbook and incorporating its concepts into your current business practices could be one of the most important business planning decisions you make. Stringent environmental health and safety regulations increase demands on the competitive printer to stay one step ahead of costs related to environmental compliance – continual improvement is the key.

Periodically evaluating your practices and the status of your environmental requirements through a comprehensive Sustainable Management System (SMS) is a good business decision. It is important to review these programs at least annually and the SMS will help your company look more closely at your impacts to the environment and help build objectives and targets to help you continually improve in your environmental business practices. Your goal is to go beyond compliance and reduce your liabilities and costs, improve your bottom line, and provide a better and safer environment for your employees and your community.

Make a point to evaluate at least one sustainable idea or pollution prevention opportunity each year and move your company towards a more sustainable future, beyond compliance. A Sustainable Management System (SMS) can help you manage your environmental concerns, measure your performance and document your successes on the path to environmental leadership for your company.

Remember that there are a lot of organizations that can provide free and confidential assistance to Iowa Companies. For a detailed list of these programs and organizations see Appendix H.

13 Appendix A

SUSTAINABLE BUSINESS (POLLUTION PREVENTION) PRACTICES	
	Review Material Safety Data Sheets (MSDS) before purchasing a product. The MSDS provides key environmental, health and safety information. Remember to maintain current copies of MSDSs for all chemicals in your shop.
	Start by paying attention to what you use. Examine your use of materials by process. Are there new technologies that can replace your existing process or materials and reduce toxics, volatile organic compound emissions or waste?
	Inventory reduction. Make one person responsible for chemical purchases and inventory control in your department. Make decisions on a basis of product performance, environmental and safety requirements, and cost. Store chemicals in a central location. Coordinate your purchasing with environmental recordkeeping so you can track chemical use and wastes to identify reduction opportunities.
	Inventory control. Conduct an inventory to reduce the type and quantity of chemicals used in your shop. Avoid accepting samples from different suppliers and have them take back unused samples. Use multi-task products as much as possible. Date all materials and use the first-in, first-out method of inventory control. Purchase frequently used materials in larger containers.
	Ink management. Use existing stocks whenever possible. For example, consider offering discounts for smaller jobs using leftover inks. Blend and reuse current ink supplies instead of disposing of them. Utilize an ink mixing system. Use inks with pigments that do not contain heavy metals. Keep ink containers closed to minimize solvent evaporation and control ink temperature and run ability.
	Reduce your cleaning solvent usage by improving your solvent management practices and replacing quickly evaporating washes with alternatives that are either low VOC or have low vapor pressure (<10 mm Hg at 68°F). Avoid using F-listed solvents and those with flashpoints below 140°F. Dispense cleaning solvent with a squirt bottle instead of pouring directly from the container to control application rate and reduce evaporation. Consider installing non-liquid type of automatic blanket wash systems.
	Use low or zero VOC fountain solutions. Replace isopropyl alcohol with alcohol substitutes and avoid chemicals such as glycol ethers or ethylene glycol that are classified as hazardous air pollutants.
	Use a laundry service for rags. After use, remove excess liquids and store in a fireproof container. Gravity drain or use other methods to remove excess solvents prior to laundering.
	Routinely clean and maintain presses. Regular maintenance, cleaning and adjustments of rollers, cylinders and other key press components will reduce cleaner consumption and prevent build-up of inks, dust and other debris that can reduce print quality.
	Conserve water. Have the local water utility or water conservation service conduct a water audit of your facility. Establish a preventative maintenance schedule to ensure maximum efficiency of water-using appliances and equipment. Replace high-flow toilets with water-efficient 1.6 gallons or less per flush models. Install low-flow aerators as low as 0.5 gallons per minute for lavatory sinks.
	Recycle. Recycle glass, plastic bottles (#1 and 2), aluminum and steel cans, newspapers, office paper, direct mail and cardboard. Recycle all computers, electronics, toner and inkjet cartridges. Use office paper, toilet tissues, paper towels and paper napkins that contain 30% post-consumer recycled content.
	Conserve energy. Ask your energy company or an energy service to conduct an energy assessment of your facility. Install a programmable thermostat and use the night setback. Use an energy management system to control lighting, heating and cooling. Turn off computers, monitors, printers, copiers and other small appliances such as coffee machines when they are not in use. Use indoor and outdoor sensor lighting.
	Educate your staff. Document your operating procedures including waste reduction and recycling measures. Educate and train staff on purchasing, handling, recycling, and maintenance procedures. Develop an environmental health and safety policy and get buy-in from staff and management.
	Consider xeriscaping. Limit lawn areas. Install low-volume irrigation, use ground cover, mulch or drought-resistant plants; and water only when needed.
	Expand "green" fleets. When replacing light-duty vehicles, replace with hybrids or the highest efficiency vehicles available. Shift diesel vehicles to biodiesel fuel, if feasible.
	Promote your Actions. Let your customers know that you are working toward becoming a "Green Printer". Let your colleagues know about your accomplishments.

14 Appendix B

DEFINITIONS

Acutely Hazardous Waste - Solid wastes determined to be very dangerous even in small amounts. Includes wastes listed in 6CCR 1007-3, Section 261.31 that are followed by the symbol (H), and all of the "P" wastes listed in Section 261.33 (e), that have been found to be fatal to humans in low doses e.g., some cyanide and mercury compounds. Few acutely hazardous wastes are generated in the printing sector.

Air Emissions - Any discharge or release of an air contaminant to the ambient air. For printers, air emissions can originate from press and screen cleaning solutions, coatings, adhesives, alcohol or alcohol substitutes and inks.

Characteristic Waste - Designated as characteristic because of constituents in the waste or the process generating the waste and has waste codes beginning with "D":

D001 - Ignitable, any liquid waste that has a flashpoint below 140°F (60°C). Any non-liquid capable of spontaneous combustion under normal conditions. An ignitable compressed gas or oxidizer. Examples include blanket and roller washes, isopropyl alcohol, solvent-based coatings and some contaminated rags.

D002 - Corrosive, an aqueous (water-based) material with a pH less than 2.0 or greater than 12.5. Examples include film/plate processing chemicals, acids, waste battery acid and highly alkaline cleaners.

D003 - Reactive, unstable materials, potentially explosive or produce toxic gases when mixed with water, air or other incompatible materials. Examples include waste bleaches and oxidizers.

D004 - Toxic, contain specific chemicals above listed threshold levels. Typically determined using the Toxicity Characteristic Leaching Procedure or TCLP test. Examples include clean-up solvents, plate processing chemicals and corrosive cleaners.

Combustible - A liquid whose flashpoint is above 37.8°C (100°F) but below 93.3°C (200°F).

Stationary Internal Combustion Engine (ICE) - Any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. A stationary ICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition. Stationary ICE includes reciprocating ICE, rotary ICE and other ICE except combustion turbines.

Extremely Hazardous Substance (EHS) - Chemicals that present the most serious hazards during release (in terms of toxicity, reactivity, volatility, combustibility and flammability), regulated under the Emergency Planning and Community Right-To-Know Act (EPCRA). The list of EHS chemicals can be found in EPCRA, Section 302, 40 CFR, Part 355, Appendices A & B. The EHS list consists of 360 substances and is included in EPA's List of Lists.

F-listed wastes - Specifically listed in the hazardous waste regulations at 6 CCR 1007-3, Section 261.31. These are generally spent cleaning solvents that contain 10% or more of at least one hazardous chemical. If the solvent is an ingredient and not being used for its solvent properties, it would not be an F-listed waste.

Flammable - Material that ignites easily and burns rapidly with a flame.

Flash Point - Temperature at and above which a liquid gives off enough vapor to form an ignitable mixture with air.

Hazardous Air Pollutant - An air pollutant that presents, through inhalation or other routes of exposure, a threat of adverse human health effects (e.g., substances that are known to be, or may reasonably be anticipated to be carcinogenic, mutagenic, cause reproductive dysfunction or other adverse effects on health or on the environment).

Hazardous Materials (HM) - Any material that is required to have a MSDS by OSHA. Examples of hazardous materials are gasoline, oil, diesel fuel, isopropyl alcohol, etc.

Hazardous Substance (HS) - Chemicals posing a hazard to human health or the environment, regulated under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) at 40 CFR 302. The HS list is included in EPA's List of Lists.

Hazardous Waste - A solid, liquid, or contained gaseous material that is no longer used or that no longer serves the purpose for which it was produced and is either stored, disposed or recycled. A hazardous waste is either "listed" in the regulations or exhibits a hazardous "characteristic" or a combination of both. For printers, hazardous wastes can include press/screen cleaning solutions, untreated fixer, parts cleaning solvents and solvent-based inks, coatings, or adhesives.

IDNR - Iowa Department of Natural Resources.

IWRC - Iowa Waste Reduction Center.

Industrial Wastewater - Any non-domestic wastewater resulting from a process of industry, manufacturing, trade or business, regardless of volume or pollutant content.

Listed Wastes - Designated as listed wastes because of constituents in the waste or the process generating the waste and have waste codes beginning with "F", "P", "U", or "K". The U and P listed wastes are for those discarded, unused commercial chemical products that are either 100% pure, technical grade or any formulation where the chemical is the active ingredient. K-listed wastes are those from specific industrial manufacturing processes such as lead chrome pigment manufacturing. Of the U, P, or K listed wastes, the only wastes that could be generated by printers are those on the U list.

List of Lists (LOL) - EPA has published a "List of Lists" that is a compendium of the lists of chemical subject to reporting requirements. The LOL includes CERCLA HSs and EPCRA EHSs as well as EPCRA 313 Toxic Chemicals and CAA 112R regulated chemicals for accidental release prevention.

Major Source - Facilities which have the potential to emit more than 100 tons/yr of an individual criteria air pollutant, less than 10 tons/yr of an individual hazardous air pollutant and less than 25 tons/yr of total hazardous air pollutants.

Minor Source - Facilities which have the potential to emit less than 100 tons/yr of an individual criteria air pollutant, less than 10 tons/yr of an individual hazardous air pollutant and less than 25 tons/yr of total hazardous air pollutants.

Non-domestic Wastewater - Wastewater that is not from a domestic source (e.g., bathrooms, kitchens, etc.).

Non-hazardous Waste - A waste that does not meet the requirements of a hazardous waste as defined above.

OSHA - Occupational Safety and Health Administration. OSHA regulations for general industry are outlined in 29 CFR 1910.

Pollution Prevention (P2) - Reduction or elimination of discharges or emissions to the environment. P2 can be accomplished by eliminating or reducing the generation of wastes at the source or by using, reusing or reclaiming wastes once they are generated.

POTW - Publicly Owned Treatment Works means a treatment facility by a District such as Metro District. The treatment works includes any sewers that convey wastewater to the POTW treatment plant.

Pretreatment - Reduction or elimination in the amount of pollutants or alteration of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging such pollutants into a POTW.

RCRA - Resource Conservation and Recovery Act. The federal Hazardous Waste regulations listed in 40 CFR Part 261-265.

Reportable Quantities (RQ) - Applies to the amount of Hazardous Substances (HSs) or Extremely Hazardous Substances (EHSs) released within a 24-hour period. Note that the 24-hour period is the time frame for measuring the quantity released, not the time frame for reporting a release. RQs are included in EPA's List of Lists.

Rolling 12-Month - Last consecutive 12-month period of time.

Secondary Containment - Containment external to the primary container; a system installed so that any material that is discharged or has leaked from the primary container is prevented from reaching the soil or ground water outside the system. Secondary containment should be able to contain 110% of the contents of the primary container.

Solid Waste - EPA's definition of Solid Waste includes solids, liquids, sludge and contained gases. More information on what constitutes a solid waste can be found at <http://www.epa.gov/epawaste/hazard/dsw/index.htm>.

Storage - The maximum quantity of hazardous waste maintained on-site at any given time. The maximum allowable storage quantity is also determined by generator status.

Sustainability - The ability to provide for the needs of the world's current population without damaging the ability of future generations to provide for themselves. When a process is sustainable, it can be carried out over and over without negative environmental effects or impossibly high costs to anyone involved.

Universal Waste - Low risk hazardous waste generated by a variety of people.

Used Oil - Any oil that has been refined from crude oil, or any synthetic oil that has been used and, as a result of such use, is contaminated by physical or chemical impurities (e.g., motor oil and refrigeration oils).

Volatile Organic Compound (VOC) - Organic compounds (containing carbon) that react with nitrogen oxides to form ozone, a regulated pollutant. Ozone in the lower atmosphere combines with particles of dust and other materials and contributes to smog formation.

15 Appendix C

Characteristics of *Hazardous Waste*

<u>Characteristic</u>	<u>Criteria Of Characteristic Waste</u>	<u>Possible Printing-Related Sources</u>	<u>Waste Code</u>
Ignitability	A liquid (except solutions containing less than 24% alcohol) that has a flash point below 140°F (60°C); or A non-liquid capable of spontaneous and sustained combustion under normal conditions; or An ignitable compressed gas (as defined by DOT); or An oxidizer (as defined by DOT)	Chemical products such as blanket and roller washes, cleanup solvents, isopropyl alcohol, and inks. Shop towels being thrown out for disposal	D001
Corrosivity	An aqueous material with a pH less than 2.0 or greater than or equal to 12.5; or A liquid that corrodes steel at a rate greater than 1/4 inch per year at a temperature of 130° F (55° C)	Plate and film processing chemicals, particularly etching chemicals. Acids, waste battery acid, and alkaline cleaners, depending on their pH.	D002
Reactivity	Normally unstable and reacts violently without detonating; or Reacts violently or forms an explosive mixture with water; or Generates toxic gases, vapor, or fumes when mixed with water; or Contains cyanide or sulfide and generates toxic gas vapors or fumes at a pH between 2 and 12.5.	Waste bleaches and oxidizers	D003
Toxicity	Contains specific toxic contaminants above threshold levels; waste should be tested	Waste fixer, plate processing chemicals, ink, and cleanup solvents, and specific pesticides.	D004- D043

SUSTAINABLE PRINTING WORKBOOK

Possible EPA Toxic Characteristic Contaminants Found in Printing Waste

<u>Contaminant</u>	<u>Waste Code</u>	<u>Regulatory Threshold</u>	<u>Contaminant</u>	<u>Waste Code</u>	<u>Regulatory Threshold</u>
Barium	D005	100.0 ppm	Silver	D011	5.0 ppm
Benzene	D018	0.5 ppm	Trichloroethylene	D039	0.5 ppm
Chromium	D007	5.0 ppm	Vinyl chloride	D043	0.2 ppm
Carbon tetrachloride	D019	0.5 ppm			
Methyl ethyl ketone	D035	200.0 ppm			

16 Appendix D

Examples of F-Listed Wastes

- F001 The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of 10% or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
- F002 The following spent halogenated solvents: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of 10% or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F001, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
- F003 The following ignitable non-toxic solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing before use, one or more of the above non-halogenated solvents, and a total of 10% or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
- F004 Toxic non-halogenated solvents: Aerosols, cresylic acid and nitrobenzene, all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and a total of 10% or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
- F005 The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of 10% or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

SUSTAINABLE PRINTING WORKBOOK

Possible U-Listed Wastes Found In Printing Waste

<u>Name/Description</u>	<u>Waste Code</u>	<u>Name/Description</u>	<u>Waste Code</u>
Acetone	U002	Methyl chloroform	U226
Benzene	U019	Methylene chloride	U080
Carbon tetrachloride	U211	Methyl ethyl ketone (MEK)	U159
Chromium	U007	Methyl isobutyl ketone	U161
Cumene	U055	Tetrachloroethylene	U210
Cyclohexane	U056	(perchloroethylene)	
Dibutyl phthalate	U069	Toluene	U220
Ethyl acetate	U112	Toluene diisocyanate	U223
Ethanol, 2-ethoxy	U359	Trichloroethylene	U228
Ethylene glycol monoethyl ether	U359	Vinyl chloride	U043
Formaldehyde	U122	Xylene	U239
Methanol	U154		

17 Appendix E

Common TCLP Testing Parameters

TCLP Parameter	Regulatory Limit (Maximum)	EPA Hazardous Waste Number
Metals		
Arsenic	5.0 mg/L	D004
Barium	100.0 mg/L	D005
Cadmium	1.0 mg/L	D006
Chromium	5.0 mg/L	D007
Lead	5.0 mg/L	D008
Mercury	0.2 mg/L	D009
Selenium	1.0 mg/L	D010
Silver	5.0 mg/L	D011
Volatile Organic Compounds (VOCs)		
Benzene	0.5 mg/L	D018
Carbon Tetrachloride	0.5 mg/L	D019
Chlorobenzene	100.0 mg/L	D021
Chloroform	6.0 mg/L	D022
1,2-Dichloroethane	0.5 mg/L	D028
1,1-Dichloroethylene	0.7 mg/L	D029
Methyl Ethyl Ketone (MEK)	200.0 mg/L	D035
Tetrachloroethylene	0.7 mg/L	D039
Trichloroethylene	0.5 mg/L	D040
Vinyl Chloride	0.2 mg/L	D043

18 Appendix F

HAZARDOUS WASTE GENERATOR REQUIREMENTS – SUMMARY TABLE			
GENERATOR REQUIREMENT	GENERATOR CATEGORY		
	Conditionally Exempt Small Quantity Generator (CESQG)	Small Quantity Generator (SQG)	Large Quantity Generator (LQG)
Hazardous Waste Determination	Required through process knowledge or analysis (supporting documentation recommended)	Required through process knowledge or analysis (supporting documentation required)	Required through process knowledge or analysis (supporting documentation required)
Monthly Generation Rate	< 1 kg of acutely HW < 100 kg of HW *	< 1 kg of acutely HW > 100 kg but < 1,000 kg of HW *	> 1 kg of acutely HW > 1,000 kg of HW *
Maximum Accumulation	< 1 kg of acutely HW < 1,000 kg of HW *	< 1 kg of acutely HW < 6,000 kg of HW *	No limit
Accumulation Time Period	None	180 days or 270 days if TSD facility is > 200 miles away	90 days
EPA ID Number	Required if generate >3 gal/yr hazardous waste codes F001, F002, F004 and/or F005	Required	Required
Manifests & LDR	Not Required (recommended)	Required	Required
Exception Reports	Not Required (recommended)	Notify EPA within 60 days & include a copy of the Manifest	Contact handler within 35 days, Report to EPA within 45 days
Biennial Reports	Not Required	Not Required	Required (March 1st of even numbered year)
Contingency Plan	Not Required (recommended)	Basic Plan Required	Written Plan Required
Container Management	Not Required (recommended)	Good Condition, Compatible with Waste, Labeled as Haz. Waste, Aisle Space, Lids, Weekly Inspections & Acc. Start Date unless at Satellite Accumulation Area	Good Condition, Compatible with Waste, Labeled as Haz. Waste, Aisle Space, Lids, Weekly Inspections & Acc. Start Date unless at Satellite Accumulation Area
Personnel Training	Not Required (recommended)	Basic Training Required	Written Training Plan Required
Record Keeping	Disposal Receipts & Waste Analysis Records (recommended)	Manifests, LDR & Waste Analysis Records	Manifests, LDR, Waste Analysis Records, Training Records, Biennial Reports & Exception Reports
1 kg ~ 1 qt 100 kg ~ 27 gal (~ ½ of a 55 gal drum) or 220 lbs, depending on material 1,000 kg ~ 270 gal (~ 4/55 gal drums) or 2,200 lbs, depending on material 6,000 kg ~ 1,620 gal (~28/55 gal drums) or 13,200 lbs, depending on material For liquids, specific gravity X 8.34 lb./gallon - density			

19 Appendix G

Emergency Contacts Telephone Posting

Post this sheet near the telephone(s) in areas where hazardous waste is handled or stored

Company Emergency Coordinator(s)	Work Phone	Pager # or Home Phone
_____	_____	_____
_____	_____	_____

Fire Department Phone _____

Police Department Phone _____

Hospital Phone _____

Iowa 24-hour Emergency Response Line Phone 515-281-8694

National Response Center (24-hour) Phone 1-800-424-8802

Location of Emergency Response Equipment

***Fire extinguishers** _____

***Fire alarm (if present)** _____

***Spill control material** _____

***Special equipment** _____

(if present)

(Fulfills emergency contact telephone posting requirements for SQG's)

20 Appendix H

Available Resources for Iowa Companies

Iowa Department of Economic Development (IDED) Programs

200 East Grand Avenue Des Moines, Iowa 50309-1819

IOWA BROWNFIELD REDEVELOPMENT PROGRAM

Phone: 515.242.4906

Fax: 515.242.4795

Website: <http://www.iowalifechanging.com/business/brownfields.html>

The Iowa Brownfield Redevelopment Program has \$500,000 available for the acquisition, remediation, and redevelopment of qualified brownfield sites.

REGULATORY ASSISTANCE COORDINATOR

Phone: 515.242.4901

Fax: 515.242.4795

Website: http://www.iowalifechanging.com/business/environmental_issues.html

Provides a focal and confidential point of contact enabling citizens, entrepreneurs, small business, industry and communities with access and communication with regulatory agencies. Working with business assistance coordinators the IDED has established the Iowa Business and Regulatory Assistance Network providing efficient and timely response to inquiries about regulatory issues and resources of assistance by state government.

SMALL BUSINESS ENVIRONMENTAL LIAISON

Phone: 515.242.4761

Fax: 515.242.4795

Website: http://www.iowalifechanging.com/business/environmental_assistance.html

Confidential assistance for small business to come into compliance with state environmental regulations. Serve as a liaison between businesses and the state of Iowa, being a portal to information sources that answer multi-media environmental questions and needs.

WATER QUALITY ADVOCATE

Phone: 515.242.4879

Fax: 515.242.4795

Website: http://www.iowalifechanging.com/business/water_quality.html

Confidential, free, non-regulatory assistance for communities, businesses and citizens regarding water quality issues, including permitting and compliance requirements, educational opportunities and regulatory and policy updates.

Iowa Department of Natural Resources (IDNR) Programs

502 East Ninth Street Des Moines, IA 50319-0034

IOWA BROWNFIELD REDEVELOPMENT PROGRAM

Phone: 515.281.8489

Fax: 515.281.8895

Website: <http://www.iowabrownfields.com/>

Brownfields are abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. The program assists entities with prevention, assessment, how to safely clean up, and sustainably reuse Brownfields.

IOWA WASTE EXCHANGE

Phone: 515.281.4876

Fax: 515.281.8895

Website: <http://www.iowadnr.gov/waste/iwe/index.html>

Confidential assistance matching businesses that produce by-products and waste with other groups interested in using or recycling those materials.

POLLUTION PREVENTION SERVICES

Phone: 515.281.5353

Fax: 515.281.8895

Website: <http://www.iowap2services.com/>

Confidential, no-cost assistance with pollution prevention for business and industry, institutions, government agencies with more than 100 employees, Resource Conservation & Recovery Act (RCRA) Large Quantity Generators, and Toxics Release Inventory (TRI).

REGIONAL COLLECTION CENTER (RCC) ESTABLISHMENT GRANTS

Phone: 515.281-5859

Fax: 515.281.8895

Website: <http://www.iowadnr.gov/waste/financial/financialrcc.html>

Grant assistance for costs associated with education and constructing or modifying a structure(s) to provide collection, sorting and packaging of hazardous materials from urban and rural households and conditionally exempt small quantity generator businesses prior final disposal.

SOLID WASTE ALTERNATIVES PROGRAM (SWAP)

Phone: 515 281-8623

Fax: 515.281.8895

Website: <http://www.iowadnr.gov/waste/financial/financialswap.html>

Financial assistance for source reduction, recycling and education projects which result in the diversion of solid waste from Iowa landfills. A fifty percent cost share is required through cash match and in-kind match. Projects are selected through a quarterly competitive process.

University of Northern Iowa (UNI) Programs

IOWA WASTE REDUCTION CENTER (IWRC)

University of Northern Iowa
Suite 113, BCS Building
Cedar Falls, IA 50614-0185
phone: 319.273.8905
fax: 319.273.6582
Website: <http://www.iwrc.org/> <http://www.iwrc.org/IAEAP/>

Confidential and free assistance for small business (less than 200 employees) is available from the IWRC to complete on-site review of a business's operation to identify pollution prevention opportunities and provide regulatory compliance information (air, waste, stormwater and wastewater areas). **The Iowa Air Emissions Assistance Program (IAEAP)** is located within the IWRC and it assists small business (less than 100 employees) with completing air construction permit applications and emission inventories.

RECYCLING AND REUSE TECHNOLOGY TRANSFER CENTER (RRTTC)

University of Northern Iowa
CEEE 113
Cedar Falls, IA 50614-0184
Phone: 319-273-3689
Website: <http://www.rttc.com/>

Assistance to Iowa manufacturers in the research and development of products containing recycled content materials through the Materials Innovation Service (MIS). Provides education and technical assistance regarding solid waste issues to Iowa companies and communities.