Michigan
Dry Cleaning
Environmental Compliance Workbook

Michigan Department of Environmental Quality
Environmental Science and Services Division
Clean Air Assistance Program

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INTRODUCTION

We know that environmental laws and regulations are complex and difficult to understand. Most regulations are not written for any one particular industry. Rather, they are written to apply to a diverse group of businesses and industries. As a result, drycleaners must understand and comply with the same rules as large corporations. The problem is, most large corporations have staff trained specifically to work in compliance matters, and most small businesses, like dry cleaners, do not.

We wrote this Workbook to help Michigan dry cleaners understand their regulatory obligations. The regulations discussed in this book have been written in plain English, making them easier to understand and implement.

The Workbook is one of a two-part compliance assistance package.

Part 1: ***Michigan Dry Cleaner Environmental Compliance Audit Checklist***

This checklist contains a series of compliance questions, which generally require "yes" or "no" answers about whether or not your facility is following the applicable environmental requirements. You will use the Workbook to help you answer these questions. After completing the checklist, you will know your facility's compliance status with environmental regulations.

Part 2: ***Michigan Dry Cleaner Environmental Compliance Workbook (this Workbook)***

This Workbook explains the environmental protection standards that apply to your business. The Workbook also includes best management practices and pollution prevention techniques that go beyond what is required by regulations. These practices and techniques can help your business minimize health risks and environmental impacts while saving money. This Workbook should be used in conjunction with the accompanying Compliance Audit Checklist and can also be used as a reference for your facility.

WHERE TO GO FOR HELP

Questions or requests for additional information about the regulations discussed in this Workbook should be directed to the following agencies:

- **Michigan Department of Environmental Quality (DEQ), Clean Air Assistance Program**
  www.michigan.gov/deq (select “Assistance & Support Services,” “Technical Assistance,” then “Clean Air Assistance”)
  800-662-9278

  OR

- **DEQ, Dry Cleaning Program**
  www.michigan.gov/deq (select “Air,” “Air Compliance & Enforcement,” then “Michigan Dry Cleaning Program”)
  517-241-1324

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CHAPTER 1: Air Quality Regulations

The dry cleaning industry operates equipment that emits air contaminants. Perchloroethylene (perc) dry-to-dry and transfer machines, petroleum machines, stills, and boilers all have the potential to emit air contaminants. Although some of this equipment may not directly discharge air contaminants to the outer air (e.g., nonvented dry-to-dry machines), they do release air contaminants that eventually escape the building and enter the outer air. This chapter discusses the air quality regulations that your dry cleaning establishment may be subject to.

1.1 NESHAP for Perchloroethylene Dry Cleaners

The ***National Emission Standard for Hazardous Air Pollutants (NESHAP) for Perchloroethylene Dry Cleaning Facilities*** is a federal regulation that was established to control air emissions of perchloroethylene (perc) from dry cleaners.

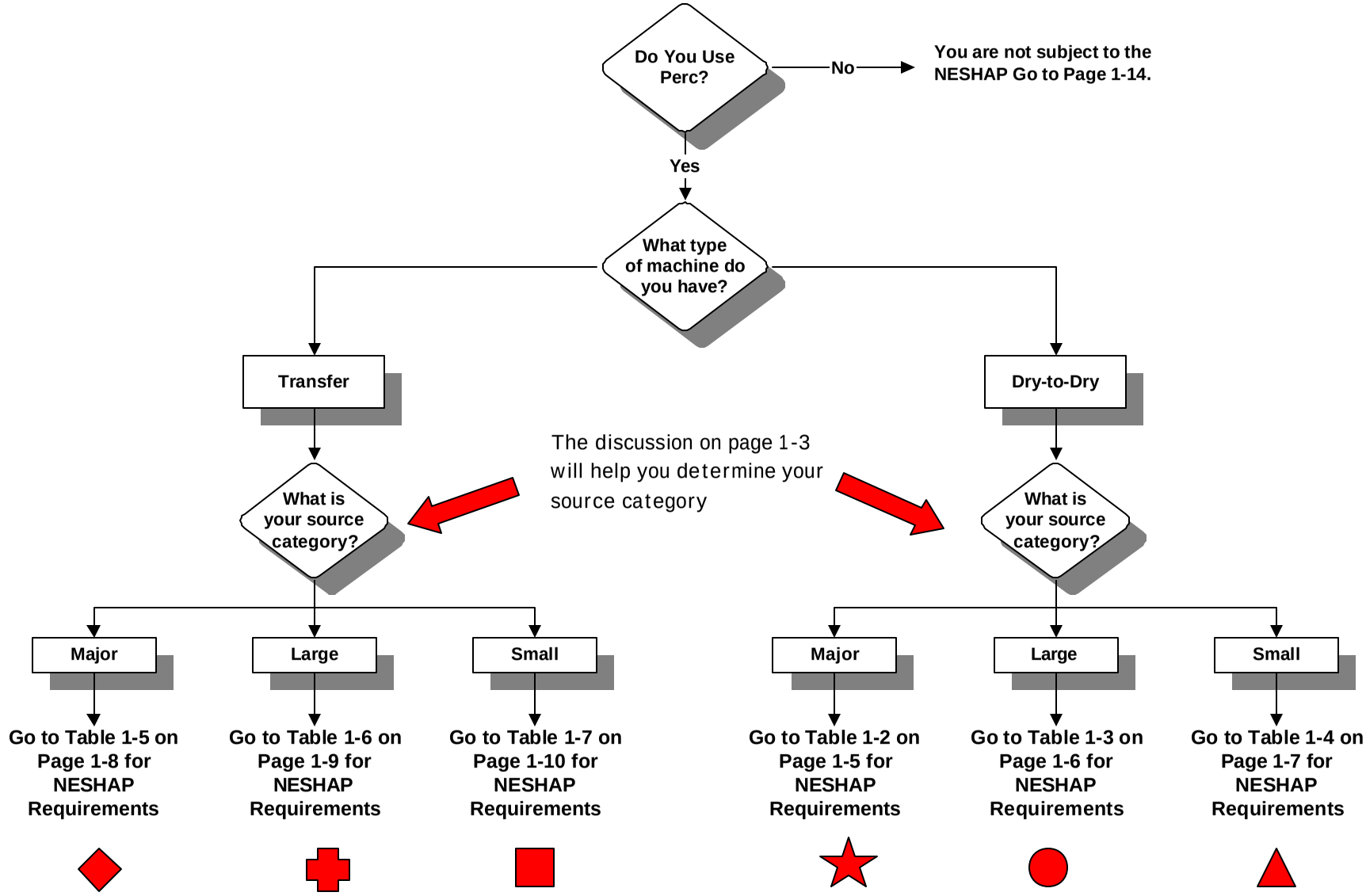
ALL commercial and industrial dry cleaning facilities that use Perchloroethylene are subject to some or all of the NESHAP requirements.

AUDIT QUESTION A1
Does your facility use Perchloroethylene?

☐ **YES**
☐ **NO - Skip to Section 1.2 (page 1-14)**

Use the flow chart on the following page to determine what requirements you are subject to under the NESHAP. The flow chart will direct you to a table that contains the requirements your facility is subject to.

What NESHAP Requirements Am I Subject To?



AUDIT QUESTION A2

What NESHAP requirements are you subject to? (select from the list below)

- ☐ If you have a **dry-to-dry machine** and are a **"major"** source go to Table 1-2
- ☐ If you have a **dry-to-dry machine** and are a **"large"** source go to Table 1-3
- ☐ If you have a **dry-to-dry machine** and are a **"small"** source go to Table 1-4
- ☐ If you have a **transfer machine** system and are a **"major"** source go to Table 1-5
- ☐ If you have a **transfer machine** system and are a **"large"** source go to Table 1-6
- ☐ If you have a **transfer machine** system and are a **"small"** source go to Table 1-7

DETERMINING YOUR FACILITY'S SOURCE CATEGORY

The NESHAP separates dry cleaning facilities into three source categories: **small area**, **large area**, and **major**. Table 1-1 defines the source categories which are based on your consumption of perc (gallons purchased per year). If you are unsure how to calculate your perc consumption, review the discussion below Table 1-1.

TABLE 1-1: SOURCE CATEGORIES

Type of Dry Cleaning Machine(s)	Small Area Source	Large Area Source	Major Source
	Purchased less than:	Purchased between:	Purchased more than:
Only Dry-To-Dry Machines	140 gal perc/ 12 month period	140-2,100 gal perc/ 12 month period	2,100 gal perc/ 12 month period
Only Transfer Machine Systems	200 gal perc/ 12 month period	200-1,800 gal perc/ 12 month period	1,800 gal perc/ 12 month period
Both Dry-To-Dry And Transfer Machines	140 gal perc/ 12 month period	140-1,800 gal perc/ 12 month period	1,800 gal perc/ 12 month period

How to Calculate Your Perc Usage?

On the first business day of each month, you are required to calculate the amount of perc purchased in the previous month and compute a rolling total of consumption for the past 12 months. An example of how to calculate your first yearly perc consumption, and consequently your source category, is found on the following page. There is a blank perc consumption record at the end of the chapter, which you can use to record your perc purchases and calculate your rolling 12-month perc consumption. Use this form as a master to make extra copies as needed.

If you move to a different source category **you have 180 days to comply with the additional requirements**. Once you have moved to a higher source category you will always be at that higher source category. For example, once a small area source facility moves up to a large area source facility, it cannot go back down to a small area source.

You must keep all receipts and a log of perc purchases on-site for a minimum of five years.

Exceedances of the consumption levels in Table 1-1 will not create a change in source category if the exceedances are considered "episodic" (i.e., the exceedances are not repeated on a frequent basis). Any exceedance that occurs at least three years after the most recent prior exceedance would be considered episodic. For example, if a facility purchases a new machine and consequently had to purchase 200 gallons of perc to fill the storage tank, this increase in the purchase of perc would move the facility into the next higher source category. However, if the facility has not had any other exceedances in the last three years, then this "fill-up" could be considered episodic and the facility would remain in its current source category.

SAMPLE PERC PURCHASE RECORD

Month and Year	Quantity of Perc Purchased (GAL)	12-Month Running Total (GAL)	Notes
June 2002	50		
July 2002	0		
August 2002	20		
September 2002	20		
October 2002	0		
November 2002	50		
December 2002	40		
January 2003	20		
February 2003	0		
March 2003	20		
April 2003	40		
May 2003	40	300	
June 2003	20	270	
July 2003	40	310	

The 12-month running total = (the running total of the previous month) + (the current month's quantity) – (the quantity recorded 12 months ago).

300+20 - 50 = 270

270+40-0 = 310

TABLE 1-2: NESHAP REQUIREMENTS FOR "MAJOR" SOURCE WITH DRY-TO-DRY MACHINE

New Machine Installed or reconstructed on or after December 9, 1991	Existing Machine Installed before December 9, 1991
☐ Refrigerated condenser required • The air-perc stream shall not be vented to atmosphere while the dry cleaning drum rotates. • The temperature of the air-perc stream on the outlet of the refrigerated condenser shall be measured weekly to determine that it is equal to or less than 45° F (±2° F) or 7.2° C (±1.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • A diverter valve shall be installed. • Make necessary repairs. ☐ The air-perc stream remaining in the machine at the end of the dry cleaning cycle shall be vented to a supplemental carbon adsorber before door opening. • The carbon adsorber shall not be bypassed or the air-perc stream shall not be released to the atmosphere at any time. • The concentration of perc in the dry cleaning machine drum at the end of the dry cleaning cycle shall be measured weekly to ensure that the concentration of perc is less than 300 parts per million per volume. A colorimetric detector tube shall be used to take the measurements. • The date and colorimetric detector tube monitoring results shall be maintained in a log for five years. • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.	☐ Refrigerated condenser or carbon adsorber required. (A carbon adsorber is satisfactory only if it was installed prior to September 22, 1993.) **For Refrigerated Condenser:** • The air-perc stream shall not be vented to atmosphere while the dry cleaning drum rotates. • The temperature of the air-perc stream on the outlet of the refrigerated condenser shall be measured weekly to determine that it is equal to or less than 45° F (±2° F) or 7.2° C (±1.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of 5 years. • A diverter valve shall be installed. • Make necessary repairs. **For Carbon Adsorber:** • The carbon adsorber shall not be bypassed to the vent or the air-perc stream shall not be released to the atmosphere at anytime. • The concentration of perc in the exhaust of the carbon adsorber shall be measured weekly to determine that the concentration of perc is less than 100 parts per million per volume. A colorimetric detector tube shall be used to take the measurements. • The date and colorimetric detector tube monitoring results shall be maintained in a log for 5 years. • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.

TABLE 1-3: NESHAP REQUIREMENTS FOR "LARGE" SOURCE WITH DRY-TO-DRY MACHINE

New Machine Installed or reconstructed on or after December 9, 1991	Existing Machine Installed before December 9, 1991
☐ Refrigerated condenser required • The air-perc stream shall not be vented to atmosphere while the dry cleaning drum rotates. • The temperature of the air-perc stream on the outlet of the refrigerated condenser shall be measured weekly to determine that it is equal to or less than 45° F (±2° F) or 7.2° C (±1.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • A diverter valve shall be installed. • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.	☐ Refrigerated condenser or carbon adsorber required. (A carbon adsorber is satisfactory only if it was installed prior to September 22, 1993.) **For Refrigerated Condenser:** • The air-perc stream shall not be vented to atmosphere while the dry cleaning drum rotates. • The temperature of the air-perc stream on the outlet of the refrigerated condenser shall be measured weekly to determine that it is equal to or less than 45° F (±2° F) or 7.2° C (±1.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • A diverter valve shall be installed. • Make necessary repairs. **For Carbon Adsorber:** • The carbon adsorber shall not be bypassed to the vent or the air-perc stream shall not be released to the atmosphere at anytime. • The concentration of perc in the exhaust of the carbon adsorber shall be measured weekly to determine that the concentration of perc is less than 100 parts per million per volume. A colorimetric detector tube shall be used to take the measurements. • The date and colorimetric detector tube monitoring results shall be maintained in a log for 5 years. • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.

TABLE 1-4: NESHAP REQUIREMENTS FOR "SMALL" SOURCE WITH DRY-TO-DRY MACHINE

New Machine Installed or reconstructed on or after December 9, 1991	Existing Machine Installed before December 9, 1991
☐ Refrigerated condenser required • The temperature of the air-perc stream on the outlet of the refrigerated condenser shall be measured weekly to determine that it is equal to or less than 45° F (±2° F) or 7.2° C (±1.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • A diverter valve shall be installed. • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.	☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.

TABLE 1-5: NESHAP REQUIREMENTS FOR "MAJOR" SOURCE WITH TRANSFER MACHINE

New Machine Installed or reconstructed on or after December 9, 1991	Existing Machine Installed before December 9, 1991
NEW TRANSFER MACHINE SYSTEMS ARE PROHIBITED AFTER SEPTEMBER 22, 1993. **For transfer systems installed before September 22, 1993:** ☐ Refrigerated condenser required • The air-perc stream inside the washer shall not be vented to atmosphere until the washer door is opened. • The difference between the temperature of the air-perc stream entering the refrigerated condenser and the stream exiting the refrigerated condenser on the washer shall be measured weekly to determine that the difference is equal to or greater than 20° F (11.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • The refrigerated condenser coil on the washer must be separate from the one on a dry-to-dry machine, dryer, or reclaimer (they cannot share the coil). • Make necessary repairs. ☐ The washer and dryer must also be contained in an enclosure maintained under negative pressure and controlled by a separate carbon adsorber. • The carbon adsorber shall not be bypassed to the vent or the air-perc stream shall not be released to the atmosphere at any time. • The concentration of perc in the exhaust of the carbon adsorber shall be measured weekly to determine that the concentration of perc is less than 100 parts per million per volume. A colorimetric detector tube shall be used to take the measurements. • The date and colorimetric detector tube monitoring results shall be maintained in a log for five years. • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.	☐ Refrigerated condenser or carbon adsorber required. (A carbon adsorber is satisfactory only if it was installed prior to September 22, 1993.) • The air-perc stream inside the washer shall not be vented to atmosphere until the washer door is opened. • The difference between the temperature of the air-perc stream entering the refrigerated condenser and the stream exiting the refrigerated condenser on the washer shall be measured weekly to determine that the difference is equal to or greater than 20° F (11.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • The refrigerated condenser coil on the washer must be separate from the one on a dry-to-dry machine, dryer, or reclaimer (they cannot share the coil). • Make necessary repairs. ☐ The washer and dryer must also be contained in an enclosure maintained under negative pressure and controlled by a separate carbon adsorber. • The carbon adsorber shall not be bypassed to the vent or the air-perc stream shall not be released to the atmosphere at anytime. • The concentration of perc in the exhaust of the carbon adsorber shall be measured weekly to determine that the concentration of perc is less than 100 parts per million per volume. A colorimetric detector tube shall be used to take the measurements. • The date and colorimetric detector tube monitoring results shall be maintained in a log for five years. • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.

TABLE 1-6: NESHAP REQUIREMENTS FOR "LARGE" SOURCE WITH TRANSFER MACHINE

New Machine Installed or reconstructed on or after December 9, 1991	Existing Machine Installed before December 9, 1991
NEW TRANSFER MACHINE SYSTEMS ARE PROHIBITED AFTER SEPTEMBER 22, 1993. **If new transfer systems installed before September 22, 1993:** ☐ Refrigerated condenser required • The air-perc stream inside the washer shall not be vented to atmosphere until the washer door is opened. • The difference between the temperature of the air-perc stream entering the refrigerated condenser and the stream exiting the refrigerated condenser on the washer shall be measured weekly to determine that the difference is equal to or greater than 20° F (11.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • The refrigerated condenser coil on the washer must be separate from the one on a dry-to-dry machine, dryer, or reclaimer (they cannot share the coil). • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.	☐ Refrigerated condenser or carbon adsorber required. (A carbon adsorber is satisfactory only if it was installed prior to September 22, 1993.) **For Refrigerated Condenser:** • The air-perc stream inside the washer shall not be vented to atmosphere until the washer door is opened. • The difference between the temperature of the air-perc stream entering the refrigerated condenser and the stream exiting the refrigerated condenser on the washer shall be measured weekly to determine that the difference is equal to or greater than 20° F (11.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • The refrigerated condenser coil on the washer must be separate from the one on a dry-to-dry machine, dryer, or reclaimer (they cannot share the coil). • Make necessary repairs. **For Carbon Adsorber:** • The carbon adsorber shall not be bypassed to the vent or the air-perc stream shall not be released to the atmosphere at anytime. • The concentration of perc in the exhaust of the carbon adsorber shall be measured weekly to determine that the concentration of perc is less than 100 parts per million per volume. A colorimetric detector tube shall be used to take the measurements. • The date and colorimetric detector tube monitoring results shall be maintained in a log for five years. • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.

TABLE 1-7: NESHAP REQUIREMENTS FOR "SMALL" SOURCE WITH TRANSFER MACHINE

New Machine Installed or reconstructed on or after December 9, 1991	Existing Machine Installed before December 9, 1991
NEW TRANSFER MACHINE SYSTEMS ARE PROHIBITED AFTER SEPTEMBER 22, 1993. **If new transfer systems installed before September 22, 1993:** ☐ Refrigerated condenser required • The air-perc stream inside the washer shall not be vented to atmosphere until the washer door is opened. • The difference between the temperature of the air-perc stream entering the refrigerated condenser and the stream exiting the refrigerated condenser on the washer shall be measured weekly to determine that the difference is equal to or greater than 20° F (11.1° C). • The date and temperature sensor monitoring results shall be maintained in a log for a period of five years. • The refrigerated condenser coil on the washer must be separate from the one on a dry-to-dry machine, dryer, or reclaimer (they cannot share the coil). • Make necessary repairs. ☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.	☐ Subject to Pollution Prevention, Recordkeeping, and Reporting Requirements Identified in Tables 1-8, 1-9, and 1-10.

AUDIT QUESTION A3

Are you complying with the requirements in:

- Table 1-2 if you are a Major Source with dry-to dry machine
- Table 1-3 if you are a Large Source with dry-to dry machine
- Table 1-4 if you are a Small Source with dry-to dry machine
- Table 1-5 if you are a Major Source with transfer machine
- Table 1-6 if you are a Large Source with transfer machine
- Table 1-7 if you are a Small Source with transfer machine

☐ **YES – Go to Table 1-8**

☐ **NO – Out of Compliance**

TABLE 1-8: NESHAP POLLUTION PREVENTION REQUIREMENTS

All commercial and industrial dry cleaning facilities, regardless of their source category, must comply with the pollution prevention requirements identified below.

- ☐ Keep dry cleaning machine door closed, except for loading and unloading.
- ☐ Operate according to manufacturers' specifications.
- ☐ Drain cartridge filters 24 hours before removal.
- ☐ Store waste in nonleaking covered containers.
- ☐ Conduct a weekly (or biweekly if the dry cleaning facility is a small area source) leak detection program. The visual leak inspection must include (using sight and smell):
  - ✓ All hose and pipe connections, fittings, couplings, and valves
  - ✓ Door gaskets
  - ✓ Filter gaskets
  - ✓ Pumps
  - ✓ Solvent tanks and containers
  - ✓ Muck cookers, stills
  - ✓ Water separator
  - ✓ Exhaust dampers
  - ✓ Diverter valves
  - ✓ Cartridge filter housing

Keep Door Closed!

If leaks are detected:

- ✓ All leaks must be repaired within 24 hours.
- ✓ If repairs are required, parts must be ordered within two working days.
- ✓ All parts received must be installed within five working days.
- ✓ A written log must be kept of all repairs made.

AUDIT QUESTION A4

Are you in compliance with the NESHAP Pollution Prevention Requirements identified in Table 1-8?

☐ **YES**

☐ **NO - Out of Compliance**

TABLE 1-9: NESHAP RECORDKEEPING REQUIREMENTS

All commercial and industrial dry cleaning facilities, regardless of their source category, must comply with the recordkeeping requirements identified below.

☐ Keep operating manuals on site.

☐ Keep a log of the following information for five years:

- ✓ The volume of perc purchased each month (you may use the "Perchloroethylene Consumption Record" provided at the end of this chapter).
- ✓ A 12-month running total of perc purchases calculated on the first working day of each month (see the "Sample Perc Purchase Record" on page 1-4).
- ✓ Dates of inspections and identification of components leaking.
- ✓ Monitoring date and results if process vent control is required (i.e., temperature or colorimetric tube).
- ✓ Dates of repairs.

At the end of this chapter there are blank "Dry-to-Dry Machine Inspection, Monitoring, and Repair Records" and "Transfer Machine System Inspection, Monitoring, and Repair Records" forms. These forms may be used to comply with the above recordkeeping requirements.

AUDIT QUESTION A5

Are you in compliance with the NESHAP recordkeeping requirements identified in Table 1-9?

☐ **YES**

☐ **NO - Out of Compliance**

TABLE 1-10: NESHAP REPORTING REQUIREMENTS

All commercial and industrial perc dry cleaning facilities, regardless of their source category, must complete three separate reporting forms. Most dry cleaning facilities submitted these forms in 1994 after the NESHAP was promulgated. These report forms can be obtained by calling the DEQ, Dry Cleaning Program at 517-241-1324 or on the Internet at: **www.michigan.gov/deq** (select "Air," "Clean Air Assistance," then "Dry Cleaning").

☐ ***The Initial Notification Report*** - requires dry cleaners to acknowledge they are subject to the NESHAP and to declare their source category based on their perc purchases.

☐ ***The Compliance Report for Pollution Prevention*** - requires dry cleaners to certify compliance with the pollution prevention standards of the NESHAP.

☐ ***The Compliance Report for Control Requirements*** - requires dry cleaners to certify their perc consumption and whether or not it is in compliance with the process vent control standards. For new dry cleaning machines, the report must be submitted within 30 days after the machine is installed.

AUDIT QUESTION A6

Did you submit the following reports?:

- Initial Notification Report
- Compliance Report for Pollution Prevention
- Compliance Report for Control Requirements

☐ **YES**
☐ **NO - Out of Compliance**

1.1.1 NESHAP Air Quality Fees

The DEQ's Air Quality Division has been given the authority to collect an annual air quality fee from certain businesses. **All dry cleaners subject to the NESHAP for Perchloroethylene Dry Cleaning must pay an annual fee.** The amount of the fee depends on whether the dry cleaning facility is a small, large, or major source. Source designations are based upon the amount of perchloroethylene purchased during a 12-month period (see Table 1-1 for assistance in determining which source designation your facility falls under).

Under the fee program, dry cleaners that are subject to the NESHAP and are "**small**" or "**large**" sources are required to pay a $250 annual air quality fee. Perchloroethylene dry cleaners that are "**major**" sources are required to pay a facility charge of $1,795 plus an emission charge of $45.25 per ton of air contaminants emitted. The Air Quality Division sends out the annual fee notice in January of each year. When a fee change is necessary, a fee is recommended by the DEQ and approved by the Michigan Legislature.

This is not the same as the "annual license" fee referenced in Chapter 6.

AUDIT QUESTION A7

Have you been paying your NESHAP air quality fee?

☐ **YES**
☐ **NO - Out of Compliance**

1.2 New Source Performance Standard (NSPS) for Petroleum Dry Cleaners

This is a federal regulation that was established to limit the emission of volatile organic compounds (VOCs) from petroleum dry cleaners.

AUDIT QUESTION A8
Does your facility use petroleum solvents?

☐ **YES**
☐ **NO – Skip to Section 1.3 (page 1-16)**

Are You Subject to the NSPS?
A petroleum dry cleaning facility is subject to the NSPS if:

1. The TOTAL manufacturers' rated dryer capacity for the entire plant is equal to or greater than 84 pounds (38 kilograms).

   AND

2. The equipment was installed after December 14, 1982.

   If the dryer was installed between December 14, 1982, and September 21, 1984, in a plant with an annual solvent consumption level of less than 4,700 gallons (17,791 liters), the facility is not subject to the NSPS requirements.

Manufacturer's rated dryer capacity is the dryer's rated capacity of articles, in pounds or kilograms of clothing articles per load, dry basis that is typically found on each dryer on the manufacturer's name-plate or in the manufacturer's equipment specifications. If the manufacturer's rated dryer capacity for all the dryers at the plant combined is equal to or greater than 84 pounds, then the source is subject to the NSPS.

AUDIT QUESTION A9
Are you subject to the NSPS for Petroleum Dry Cleaners?

☐ **YES**
☐ **NO – Skip to Section 1.3 (page 1-16)**

Petroleum dry cleaning establishments that are subject to the NSPS must comply with the requirements identified in Table 1-11.

TABLE 1-11: NSPS REQUIREMENTS

- ☐ The dryer must be a solvent recovery dryer.
- ☐ The filter must be a cartridge filter.
- ☐ You must drain the cartridge filters in their sealed housings for at least eight hours prior to their removal.
- ☐ The manufacturer of the petroleum solvent dryer should have included leak inspection and leak repair cycle information in the operating manual and on a clearly visible label posted on the dryer.
- ☐ You must perform an initial test to verify that the flow rate of recovered solvent from the solvent recovery dryer at the termination of the recovery cycle is no greater than 0.05 liters per minute. This test shall be conducted for a duration of no less than two weeks during which no less than 50 percent of the dry loads shall be monitored for their final recovered solvent flow rate (see instructions for testing on next page).
- ☐ You need to maintain a copy of the initial performance test (see below).

Initial Performance Test

The suggested point for measuring the flow rate of recovered solvent is the outlet of the solvent-water separator. Near the end of the recovery cycle, the entire flow of recovered solvent should be diverted to a graduated cylinder. As the recovered solvent collects in the graduated cylinder, the elapsed time is monitored and recorded in periods of greater than or equal to one minute. At the same time, the volume of solvent in the graduated cylinder is monitored and recorded to determine the volume of recovered solvent that is collected during each time period. The recovered solvent flow rate is calculated by dividing the volume of solvent collected per period by the length of time elapsed during the period and converting the result with appropriate factors into units of liters per minute. The recovery cycle and the monitoring procedure should continue until the flow rate of solvent is less than or equal to 0.05 liter per minute. The type of articles cleaned and the total length of the cycle should then be recorded.

AUDIT QUESTION A10

Are you in compliance with the NSPS requirements identified in Table 1-11?

- ☐ **YES**
- ☐ **NO - Out of Compliance**

1.3 Permit to Install

Before a facility can legally install, relocate, modify, or reconstruct equipment that emits air contaminants, it may have to apply for and receive an approved Permit to Install from the DEQ's Air Quality Division (see Table 1-12). The Permit to Install will contain a list of conditions that you must comply with.

Note: This Permit to Install is not the same as the license required by the DEQ Dry Cleaning Program (see Chapter 6).

TABLE 1-12: PERMIT TO INSTALL REQUIREMENTS

Dry cleaning establishments should obtain a Permit to Install prior to the installation of the following dry cleaning and laundering equipment:

- ☐ Boilers that burn only natural gas and have a heat input capacity of over 50,000,000 BTU/hr.
- ☐ Oil-fired boilers that have a heat input of more than 20,000,000 BTU/hr or that burn oil containing more than 0.40 percent sulfur by weight.
- ☐ Perc or petroleum dry cleaning machines with a capacity of over 100 pounds of clothes.
- ☐ Solvent distillation equipment that has a rated batch capacity of more than 55 gallons.

Most separator water evaporators installed at perc dry cleaning facilities will fall under an exemption from the Permit to Install requirement. This exemption is identified in **Rule 290** of the Michigan Air Pollution Control Rules. To use this exemption, facilities must maintain records of the amount and concentration of perc in the separator water treated in the evaporator. A Rule 290 recordkeeping form is available at: **www.michigan.gov/deq** (select "Air," "Clean Air Assistance," then "Publications - Air Permits [Permit to Install]"). These records must be available for inspection and must be maintained on file for two years. It is recommended that facilities only purchase evaporators that come equipped with a control device such as a carbon filter to reduce the emission of perc into the air.

AUDIT QUESTION A11

Does any of the equipment at your facility exceed the following thresholds?

- ☐ Boiler that burns only natural gas and has a heat input capacity of over 50,000,000 BTU/hr.
- ☐ Oil-fired boiler that has a heat input of more than 20,000,000 BTU/hr or that burns oil containing more than 0.40 percent sulfur by weight.
- ☐ Perc or petroleum dry cleaning machine with a capacity of over 100 pounds of clothes.
- ☐ Solvent distillation equipment that has a rated batch capacity of more than 55 gallons.

☐ **YES**

☐ **NO – Skip to Section 1.4**

AUDIT QUESTION A12
Have you obtained a Permit to Install for the equipment from the DEQ, Air Quality Division?

☐ **YES**
☐ **NO - Out of Compliance**

1.4 Renewable Operating Permit

A Renewable Operating Permit (ROP) is a type of air permit that clarifies a facility's air requirements by consolidating all state and federal air quality requirements into one document. Only facilities considered to be "**major sources**" of air pollution are subject to the ROP Program. The following dry cleaning facilities are subject to the ROP Program:

- **Dry cleaners that have only dry-to-dry machines and consume more than 2,100 gallons of perc in a year.**
- **Dry cleaners that have only transfer machines and consume more than 1,800 gallons of perc in a year.**
- **Dry cleaners that have both transfer and dry-to-dry machines and consume more than 1,800 gallons of perc in a year.**
- **Dry cleaners that use petroleum solvents or other non-perc solvents and have the "potential to emit" over 100 tons of volatile organic compounds (VOCs) in one year.** If you use petroleum solvents, use the worksheet on the next page to determine if your facility has the "potential to emit" more than 100 tons of VOC per year.

Contact the DEQ, Dry Cleaning Program at 517-241-1324 or the Clean Air Assistance Program at 800-662-9278 if you have questions about whether or not you are subject to the ROP Program.

AUDIT QUESTION A13
Does your facility meet any of the following criteria:

- Have only dry-to-dry machines and consume more than 2,100 gallons of perc in a year.
- Have only transfer machines and consume more than 1,800 gallons of perc in a year.
- Have both transfer and dry-to-dry machines and consume more than 1,800 gallons of perc in a year.
- Use petroleum solvents or other non-perc solvents and have the "potential to emit" over 100 tons of volatile organic compounds (VOCs) in one year.

☐ **YES**
☐ **NO – Skip to Section 1.5 (page 1-19)**

AUDIT QUESTION A14
Have you applied for or been issued an ROP?

☐ **YES**
☐ **NO – Out of Compliance**

"POTENTIAL TO EMIT" VOCS FROM PETROLEUM SOLVENTS

Gallons of petroleum solvent used per year = _____ (a)

Multiply (a) by 6.8 = _____ (b)

Multiply (b) by 8,760 = _____ (c)

Hours spent dry cleaning per year = _____ (d)

Divide (c) by (d) [c/d] = _____ (e)

Divide (e) by 2,000 = _____ (f)

Multiply (f) by 1.3 = _____ (g) [potential tons VOC/year]

Is (g) greater than 100? ☐ Yes (you are subject to the ROP Program)
☐ No (you are not subject to the ROP Program)

Note: *The calculations in the worksheet above assume that the petroleum solvent is 100% VOCs. If you are using a solvent that contains less than 100% VOCs contact the Clean Air Assistance Program at 800-662-9278 for assistance in calculating your potential to emit.*

EXAMPLE

Gallons of petroleum solvent used per year = **400** (a)

Multiply (a) by 6.8 = **2,720** (b)

Multiply (b) by 8,760 = **23,827,200** (c)

Hours spent dry cleaning per year = **2,080** (d)

Divide (c) by (d) [c/d] = **11,455** (e)

Divide (e) by 2,000 = **5.73** (f)

Multiply (f) by 1.3 = **7.45** (g) [potential tons VOC/year]

Is (g) greater than 100? ☐ Yes (you are subject to the ROP Program)
☒ No (you are not subject to the ROP Program)

1.5 Michigan Air Emissions Reporting System (MAERS)

The Clean Air Act requires that each state maintain an inventory of air emissions. In Michigan this emissions inventory data is collected though the Michigan Air Emissions Reporting System (MAERS).

The following dry cleaning facilities are subject to MAERS reporting:

- **Dry cleaning establishments that are subject to the ROP Program** (see 1.4)
- **Petroleum dry cleaning establishments that are subject to the NSPS** (see 1.2)

In January of each year, subject facilities receive notice that they are subject to MAERS reporting. This notice includes a letter, instructions, and software to complete the MAERS report. The MAERS report is due on March 15. Additional information about MAERS reporting can be found on the Internet at: **www.michigan.gov/deq** (select "Air," "Air Emissions," then "Emissions Reporting").

AUDIT QUESTION A15

Is your facility:

- Subject to the ROP Program

OR

- Subject to the NSPS for dry cleaning establishments

☐ **YES**

☐ **NO – Go to Chapter 2**

AUDIT QUESTION A16

Do you submit a MAERS report?

☐ **YES**

☐ **NO – Out of Compliance**

1.6 Where to Go For Help

SUBJECT	**State and federal air quality regulations**
CONTACT	DEQ, Clean Air Assistance Program
TELEPHONE	(800) 662-9278
WEB SITE	www.michigan.gov/deq (select "Assistance & Support Services," "Technical Assistance," then "Clean Air Assistance")
PUBLICATIONS	Air Emissions Reporting: 1. Michigan Air Emissions Reporting System (MAERS) Workbook Air Permits: 1. Michigan Air Use Permit Technical Manual Order Form (EQP 3563) 2. Permit to Install: Determining Applicability Guidebook 3. Permit to Install Workbook – A Practical Guide to Completing An Air Use Permit Application 4. Life After ROP – Renewable Operating Permit Reporting and Revisions General Publications: 1. Air Pollution Control 101 2. Michigan Air Pollution Control Laws and Rules Order Form (EQP 3566) 3. The Michigan Clean Air Consultant Directory 4. What Is An Air Contaminant/Pollutant? 5. Working With An Environmental Consultant New Source Performance Standard (NSPS): 1. Air Quality Regulations Affecting Petroleum Dry Cleaning Operations
SUBJECT	**State and federal air quality regulations and programs**
CONTACT	DEQ, Air Quality Division
TELEPHONE	(517) 373-7023
WEB SITE	www.michigan.gov/deq (select "Air")
SUBJECT	**Federal air quality regulations**
CONTACT	U.S. Environmental Protection Agency, Office of Air and Radiation
WEB SITE	www.epa.gov/oar or www.epa.gov/oar/oaqps
SUBJECT	**Evaluation of the effectiveness of the Clean Air Assistance Program and Clean Air Ombudsman**
CONTACT	Clean Air Compliance Advisory Panel
TELEPHONE	(800) 662-9278
WEB SITE	www.michigan.gov/deq (select "Assistance & Support Services," "Technical Assistance," "Clean Air Assistance," then "Clean Air Ombudsman")
SUBJECT	**Michigan Clean Air Ombudsman**
CONTACT	Michigan Economic Development Corporation
TELEPHONE	(517) 373-4600
WEB SITE	www.michigan.org

DEQ, Air Quality Division

Dry Cleaning Recordkeeping Forms

These forms are also available on the Internet at **www.michigan.gov/deq** (select "Assistance & Support Services," "Technical Assistance," then "Clean Air Assistance").

- Sample Perchloroethylene Consumption Record
- Blank Perchloroethylene Consumption Record
- Dry-to-Dry Machine Inspection, Monitoring, and Repair Record
- Transfer Machine System Inspection, Monitoring, and Repair Record

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, AIR QUALITY DIVISION

PERCHLOROETHYLENE CONSUMPTION RECORD

This information is required by Article II, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to provide this information may result in penalties and/or imprisonment.

Applicable Rule: 40 CFR Part 63, Subpart M-National Emission Standards for Perchloroethylene Dry Cleaning Facilities.

NOTE: All dry cleaning facilities that use perchloroethylene (perc), except coin-operated machines operated by the customer, are required to maintain accurate records of their perc purchases. One of the reasons for recording this information is to identify whether a facility's source designation, i.e., small area, large area or major, changes. If a facility's source designation does change, then it must comply with the applicable requirements for that new source designation. Effective December 20, 1993, affected facilities were to begin keeping accurate records of perc purchases and purchase receipts. Receipts of perc purchases and the completed log sheets must remain on-site for 5 years.

Please print or type all information.

Plant Name	Plant Location
Generic Cleaners	**123 E. West St., Any Town, MI 48910**

Month and Year	Quantity of Perc Purchased (GAL)[1]	12-Month Running Total (GAL)[2]	Notes
June 2002	50	NA	
July 2002	0		
August 2002	20		
September 2002	20		
October 2002	0		
November 2002	50		
December 2002	40		
January 2003	20		
February 2003	0		
March 2003	20		
April 2003	40		
May 2003	40	300	
June 2003	20	270	
July 2003	40	310	

[1] Total amount of perc purchased during the month. If no purchases are made during the month, enter 0 gallons.

[2] **Running total** = the **running total** of the previous month + the current month's **quantity** - the **quantity** recorded 12 months ago.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, AIR QUALITY DIVISION

PERCHLOROETHYLENE CONSUMPTION RECORD

This information is required by Article II, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to provide this information may result in penalties and/or imprisonment.

Applicable Rule: 40 CFR Part 63, Subpart M-National Emission Standards for Perchloroethylene Dry Cleaning Facilities.

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Please print or type all information.

Plant Name	Plant Location

Month and Year	Quantity of Perc Purchased (GAL)[1]	12-Month Running Total (GAL)[2]	Notes

[1] Total amount of perc purchased during the month. If no purchases are made during the month, enter 0 gallons.

[2] **Running total** = the **running total** of the previous month + the current month's **quantity** - the **quantity** recorded 12 months ago.

THIS IS A MASTER COPY. PLEASE MAKE COPIES FROM THIS MASTER COPY

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, AIR QUALITY DIVISION

DRY-TO-DRY MACHINE INSPECTION, MONITORING AND REPAIR RECORD

This information is required by Article II, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to provide this information may result in penalties and/or imprisonment.

Applicable Rule: 40 CFR Part 63, Subpart M-National Emission Standards for Perchloroethylene Dry Cleaning Facilities.

INSPECTIONS: All dry cleaning facilities that use perchloroethylene (perc), except coin-operated machines operated by the customer, are required to inspect machine components for PERCEPTIBLE leaks and record the results. PERCEPTIBLE leaks are those that are detectable by odor, visual observation, such as pools or droplets of liquid, or touch when passing fingers over equipment. If a leak is detected, repairs must be made within 24 hours. If repair parts must be ordered, a written or verbal work order for the parts must be initiated within 2 working days of detecting the leak. Repairs must be completed within 5 working days after receipt of parts.

Facilities were to begin checking and documenting leaks as of December 20, 1993. Facilities designated as a large area or major source are required to conduct inspections on a weekly basis, and a small area source must perform inspections once every two weeks. If you have not been conducting inspections and/or recording the results, begin doing so immediately. Records of the inspection must remain on-site for 5 years.

Please print or type all information.

Plant Name	**Plant Location**
Machine ID	**Date**

Inspection for Perceptible Leaks (Note Location of Leak if Found)	**Leak**	**Date Part Ordered**	**Date Part Received**	**Date of Repair**
Hose and Pipe Connections	☐ Yes ☐ No			
Fittings, Couplings and Valves	☐ Yes ☐ No			
Heating Coils	☐ Yes ☐ No			
Cooling Coils	☐ Yes ☐ No			
Pumps	☐ Yes ☐ No			
Door Gasket and Seating	☐ Yes ☐ No			
Filter Gasket and Seating	☐ Yes ☐ No			
Solvent Tank and Containers	☐ Yes ☐ No			
Thermo Sensors	☐ Yes ☐ No			
Water Separator	☐ Yes ☐ No			
Muck Cooker	☐ Yes ☐ No			
Still	☐ Yes ☐ No			
Exhaust Damper	☐ Yes ☐ No			
Diverter Valve	☐ Yes ☐ No			
Cartridge Filter Housing	☐ Yes ☐ No			

DRY-TO-DRY MACHINE INSPECTION, MONITORING AND REPAIR RECORD (continued)

MONITORING: All dry cleaning facilities that are required to have process vent control devices installed on their machines must comply with the monitoring requirements. Therefore, only facilities designated as small area sources that only operate EXISTING machines (those installed before December 9, 1991) will not have to monitor because process vent control is not required. For those facilities that have machines subject to the process vent control requirements, the following monitoring schedule must be complied with: **Facilities must be monitoring NEW machines (installed on or after December 9, 1991) on December 20, 1993, or 30 days after installation, whichever is later. Facilities must begin monitoring EXISTING machines on September 23, 1996. Monitoring must be conducted on a weekly basis and results logged.**

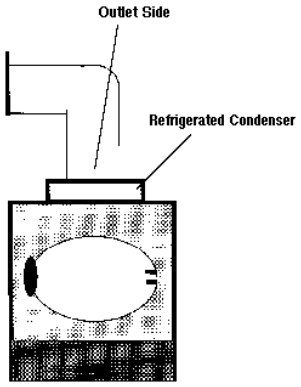
If the monitoring parameter values are not within the required range, then the facility must make repairs or adjustments to meet the required range. If repair parts must be ordered, a written or verbal order for the parts must be initiated within 2 working days of detecting such a parameter value. Repairs must be completed within 5 working days after receipt of parts. Records must remain on-site for 5 years.

Please print or type all information.

Plant Name	**Plant Location**
Machine ID	**Date**

Check Emission Control Devices	PPM[1] or Temp[2]	Date Part Ordered	Date Part Received	Date of Repair
(A) Refrigerated condenser on dry-to-dry machine.	outlet= deg C or F			
(B) Carbon adsorber on dry-to-dry machine or supplemental carbon adsorber-exhaust passes through it immediately upon door opening.	PPM			
(C) Supplemental carbon adsorber-exhaust passes through it before door is opened.	PPM			

[1] Parts per million
[2] Degrees Celsius or Fahrenheit



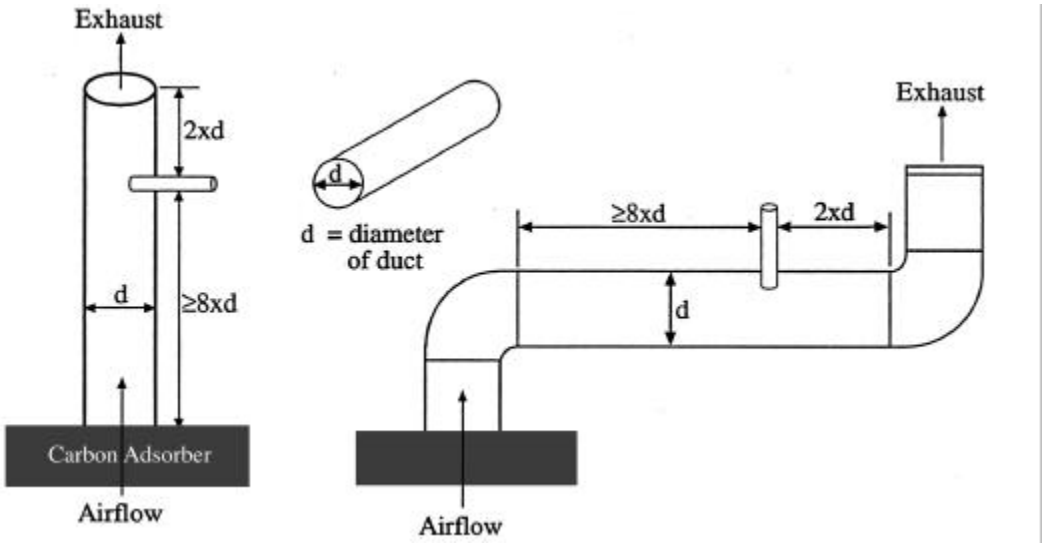
A - Refrigerated condenser on a dry-to-dry machine. If you installed a refrigerated condenser on a dry-to-dry machine to meet the control requirements, then you must:

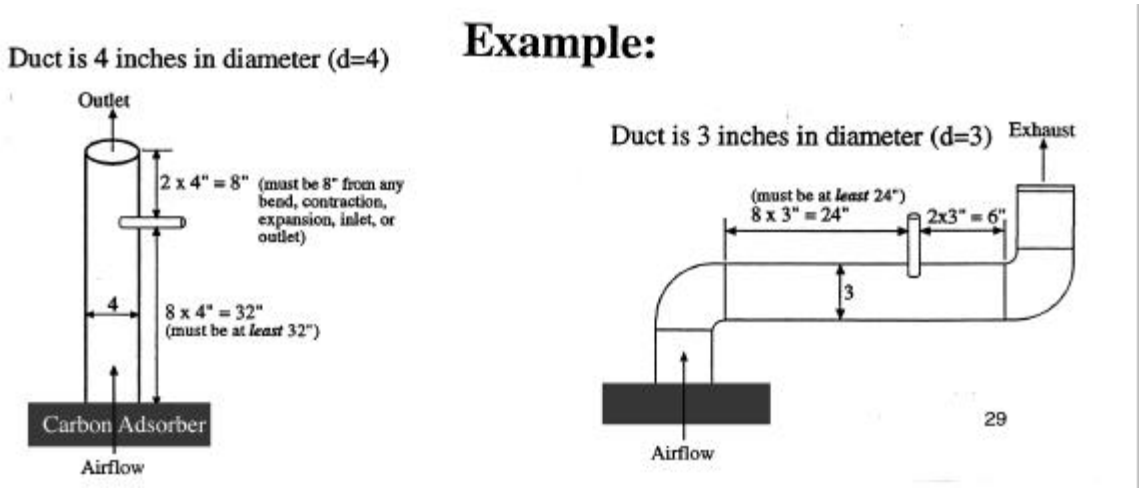
Measure the temperature of the air-perc mixture at the outlet of the refrigerated condenser. The temperature must be equal to or less than 45 deg F (7.2 deg C). The thermometer or temperature sensing device should measure up to 45 deg F (7.2 deg C) with an accuracy of 2 deg F (1.1 deg C).

B - Carbon adsorber on a dry-to-dry machine. If you installed a carbon adsorber on a dry-to-dry machine to meet the control requirements or (for major sources only) you installed a supplemental carbon adsorber on a dry-to-dry machine and the exhaust passes through a supplemental carbon adsorber immediately upon door opening:

Use a colorimetric detector tube to measure the concentration of perc at the exhaust outlet of the carbon adsorber. The concentration should be less than or equal to 100 ppm by volume. Accuracy should be ±25 ppm by volume. The measurement must be made after the last dry cleaning cycle prior to desorption of the carbon adsorber. A sampling port for monitoring within the exhaust outlet of the carbon adsorber must be provided that is easily accessible: located at least eight times the diameter of the stack or duct downstream from any flow disturbance (bend, expansion, contraction or outlet); not downstream from any other inlet and two times the diameter of the stack or duct upstream from any flow disturbance.

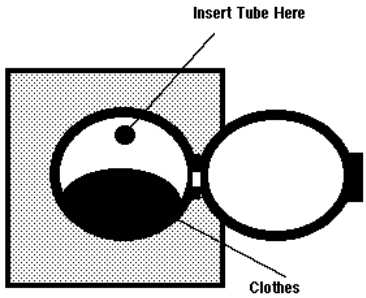
DRY-TO-DRY MACHINE INSPECTION, MONITORING AND REPAIR RECORD(continued)





C - Supplemental carbon adsorber. If you installed a supplemental carbon adsorber on a dry-to-dry machine to meet the control requirements and the exhaust passes through the supplemental carbon adsorber before the door is opened:

Use a colorimetric detector tube to measure the concentration of perc inside the open space at the rear end of the drum immediately after door opening. The concentration must be less than or equal to 300 ppm by volume. The measurement should be made after the last dry cleaning cycle. The accuracy of the tube should be±75 ppm by volume.



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, AIR QUALITY DIVISION

TRANSFER MACHINE SYSTEM INSPECTION, MONITORING AND REPAIR RECORD

This information is required by Article II, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to provide this information may result in penalties and/or imprisonment.

Applicable Rule: 40 CFR Part 63, Subpart M-National Emission Standards for Perchloroethylene Dry Cleaning Facilities.

INSPECTIONS: All dry cleaning facilities that use perchloroethylene (perc), except coin-operated machines operated by the customer, are required to inspect machine components for PERCEPTIBLE leaks and record the results. PERCEPTIBLE leaks are those that are detectable by odor, visual observation, such as pools or droplets of liquid, or touch when passing fingers over equipment. If a leak is detected, repairs must be made within 24 hours. If repair parts must be ordered, a written or verbal work order for the parts must be initiated within 2 working days of detecting the leak. Repairs must be completed within 5 working days after receipt of parts.

Facilities were to begin checking and documenting leaks as of December 20, 1993. Facilities designated as a large area or major source are required to conduct inspections on a weekly basis, and a small area source must perform inspections once every two weeks. If you have not been conducting inspections and/or recording the results, begin doing so immediately. Records of the inspection must remain on-site for 5 years.

Please print or type all information.

Plant Name	**Plant Location**
Machine ID	**Date**

Inspection for Perceptible Leaks (Note Location of Leak if Found)	**Leak**	**Date Part Ordered**	**Date Part Received**	**Date of Repair**
Hose and Pipe Connections	☐ Yes ☐ No			
Fittings, Couplings and Valves	☐ Yes ☐ No			
Heating Coils	☐ Yes ☐ No			
Cooling Coils	☐ Yes ☐ No			
Pumps	☐ Yes ☐ No			
Door Gasket and Seating	☐ Yes ☐ No			
Filter Gasket and Seating	☐ Yes ☐ No			
Solvent Tank	☐ Yes ☐ No			
Solvent Containers	☐ Yes ☐ No			
Water Separator	☐ Yes ☐ No			
Muck Cooker	☐ Yes ☐ No			
Still	☐ Yes ☐ No			
Exhaust Damper	☐ Yes ☐ No			
Diverter Valve	☐ Yes ☐ No			
Cartridge Filter Housing	☐ Yes ☐ No			

TRANSFER MACHINE SYSTEM INSPECTION, MONITORING AND REPAIR RECORD (continued)

MONITORING: All dry cleaning facilities that are required to have process vent control devices installed on their machines must comply with the monitoring requirements. Therefore, only facilities designated as small area sources that only operate EXISTING machines (those installed before December 9, 1991) will not have to monitor because process vent control is not required. For those facilities that have machines subject to the process vent control requirements, the following monitoring schedule must be complied with: **Facilities must be monitoring NEW machines (installed on or after December 9, 1991) on December 20, 1993, or 30 days after installation, whichever is later. Facilities must begin monitoring EXISTING machines on September 23, 1996. Monitoring must be conducted on a weekly basis and results logged.**

If the monitoring parameter values are not within the required range, then the facility must make repairs or adjustments to meet the required range. If repair parts must be ordered, a written or verbal order for the parts must be initiated within 2 working days of detecting such a parameter value. Repairs must be completed within 5 working days after receipt of parts. Records must remain on-site for 5 years.

Please print or type all information.

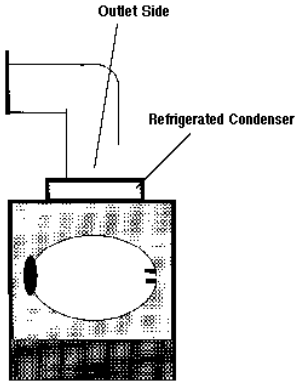
Plant Name	**Plant Location**
Machine ID	**Date**

Monitoring Process Vent Control Devices	**PPM[1] or Temp[2]**	**Date Part Ordered**	**Date Part Received**	**Date of Repair**
(A) Refrigerated condenser on dryer or reclaimer	outlet= deg C or F			
(B) Refrigerated condenser on washer	inlet-outlet= deg C or F			
(C) Carbon adsorber on transfer machine system	PPM			

1 Parts per million
2 Degrees Celsius or Fahrenheit

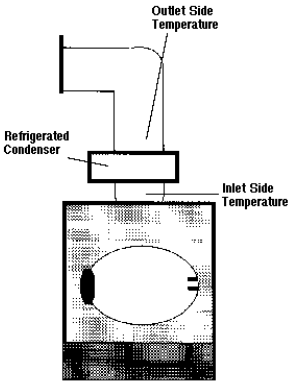
A - Refrigerated condenser on a dryer. If you installed a refrigerated condenser on a dryer or reclaimer of a transfer machine system to meet the control requirements, then you must:

Measure the temperature of the air-perc mixture at the outlet of the refrigerated condenser. The temperature must be equal to or less than 45 deg F (7.2 deg C). The thermometer or temperature sensing device should measure up to 45 deg F (7.2 deg C) with an accuracy of 2 deg F (1.1 deg C).



B - Refrigerated condenser on a washer. If you installed a refrigerated condenser on a washer of a transfer machine system to meet the control requirements, then:

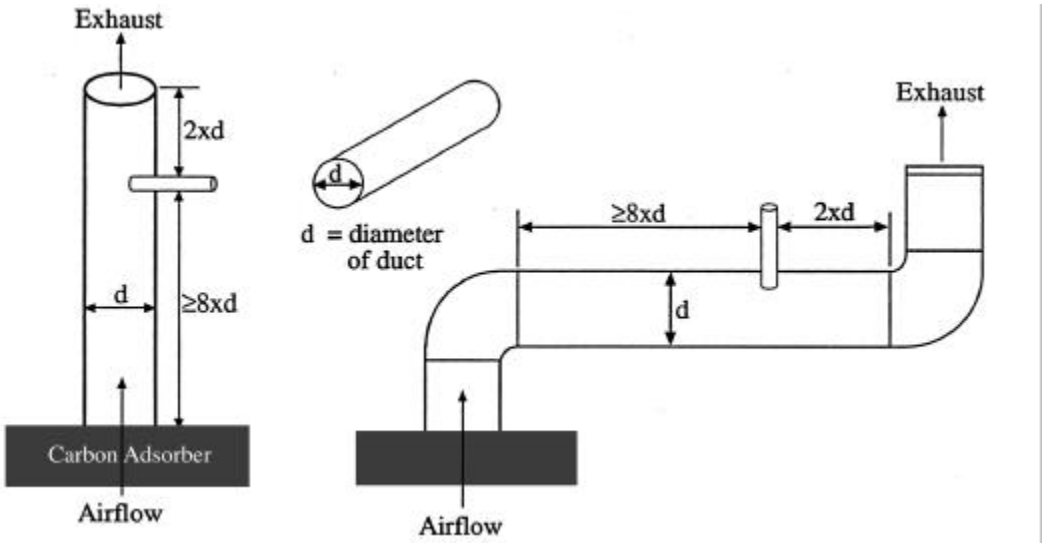
Measure the temperature difference between the air-perc mixture entering and exiting the refrigerated condenser. This temperature difference must be equal to or greater than 20 deg F (11.1 deg C). The thermometer or temperature sensor should measure a range from 32 deg F (0 deg C) to 120 deg F (48.9 deg C) with an accuracy of 2 deg F (1.1 deg C).

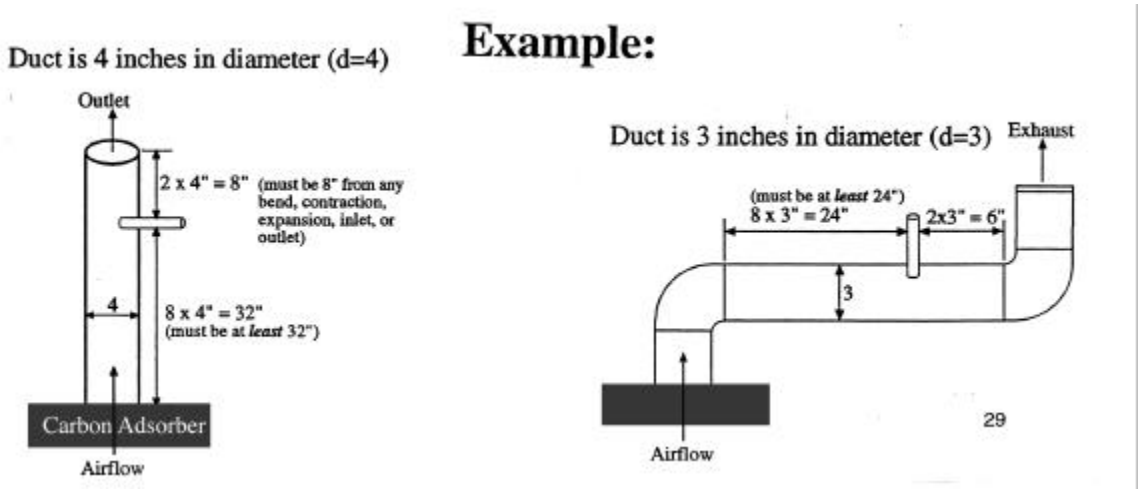


TRANSFER MACHINE SYSTEM INSPECTION, MONITORING AND REPAIR RECORD(continued)

C - Carbon adsorber. If you installed a carbon adsorber on a transfer machine system to meet the control requirements:

Use a colorimetric detector to measure the concentration of perc at the exhaust outlet of the carbon adsorber. The concentration should be less than or equal to 100 ppm by volume. Accuracy should be 25 ppm by volume. Measurement must be made after the last dry cleaning cycle prior to desorption of the carbon adsorber. A sampling port for monitoring within the exhaust outlet of the carbon adsorber must be provided that is easily accessible: located at least eight times the diameter of the stack or duct downstream from any flow disturbance (bend, expansion, contraction or outlet); not downstream from any other inlet and two times the diameter of the stack or duct upstream from any flow disturbance.





Chapter 2

Waste Management Regulations

Compliance Audit Questions B1 through B38

CHAPTER 2: Waste Management Regulations

Michigan dry cleaners may generate three types of waste – solid waste, liquid industrial waste, and hazardous waste. Your legal responsibility as a generator of any quantity of waste extends from "cradle to grave." This covers the time from when the waste was first generated through its ultimate disposal. This chapter discusses the regulations pertaining to the disposal of solid waste, liquid industrial waste, and hazardous waste.

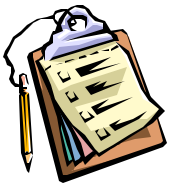
IN THIS CHAPTER ...

You might find it difficult to understand which waste regulations apply specifically to your business. You may want to contact the appropriate Department of Environmental Quality (DEQ), Waste and Hazardous Materials Division (WHMD) district office (see Appendix C) or an environmental consultant for help after reading this chapter.

BEST MANAGEMENT PRACTICES – WASTE REDUCTION OPPORTUNITIES

Not Required but Recommended

You can conduct a waste survey to properly identify many types and quantities of waste and determine how to reduce waste generation. When you conduct your waste survey:



1. Tour your whole facility and ask your employees questions about what is being done and what is being generated as waste. Ask them for their suggestions about how waste could be reduced. Consider the wastes likely being generated from activities such as:

- ☐ Cleaning processes (using perc, petroleum solvents, spot removers)
- ☐ Building and grounds maintenance (such as cleaning sludge from tanks; replacing disposable filters; painting buildings; changing light bulbs; and using floor cleaners, pesticides and insecticides)
- ☐ Office activities (such as changing toner cartridges used in your copiers and computer printers)

2. Trace all chemical purchases for each step of every process or activity of your business. Consider whether you could substitute materials that would generate less or no hazardous waste.

3. Identify where in-house recovery and reuse of hazardous materials are possible. If you are interested in recycling on-site, check the regulations or discuss it with your WHMD district office (Appendix C) to be sure that you will not need to be permitted as a hazardous waste treatment facility. Also check with your Air Quality Division district office (Appendix C) to see if an air quality permit is necessary for your proposed recycling unit.

BEST MANAGEMENT PRACTICES FOR WASTE MANAGEMENT *(continued)*

4. Observe if employees are creating more hazardous waste by mixing other waste with known hazardous waste. For example, your business could reduce the volume of hazardous waste by avoiding placement of nonhazardous waste in the same container as one holding waste solvents.

5. Determine if different wastes are being mixed together. Doing so will usually make recycling difficult, if not impossible, and disposal more expensive.

6. Develop and maintain an accurate inventory control of all products. This will help eliminate excessive inventory. Buying in bulk or ordering on a schedule will not save you money if you have to dispose of the product because its shelf life expired.

Once you know where your wastes are being generated, you may be able to reduce your disposal costs by implementing waste reduction and recycling programs at your business. Not only will you save money on disposal costs, you might save money by purchasing less material and even earn money from selling the collected materials. See the ***Michigan Recycled Materials Market Directory*** for recycling companies. To access this publication go to **www.michigan.gov/deq** (select "Pollution Prevention" then "Recycling").

Waste reduction involves implementing activities which result in less waste being generated. These activities include the following:

- ☐ Change dry cleaning equipment and processes so that less waste is created.
- ☐ Purchase supplies that have less packaging.
- ☐ Have materials shipped in returnable and reusable containers.
- ☐ Use materials on a "first in, first out" basis so products do not become too old to use.
- ☐ Replace disposable materials with reusable and recyclable materials.
- ☐ Establish an incentive program which encourages workers to suggest ways to reduce waste.
- ☐ Train employees in waste reduction methods.

Some solvents can be carefully collected and reused rather than discarded as waste, such as using condensate water containing perc as part of the prespotting solution.

AUDIT QUESTION B1

Have you reviewed the "Best Management Practices - Waste Reduction Opportunities?"

☐ **YES**
☐ **NO – Recommended**

AUDIT QUESTION B2

Have you implemented any measures to reduce the amount of waste generated at your facility?

☐ **YES**
☐ **NO – Recommended**

2.1 Solid Waste

Solid waste includes garbage, rubbish, and industrial and commercial waste that is not regulated as a hazardous waste.

Examples of solid waste that might require disposal include:

- Nonrecyclable office paper
- Break room waste such as discarded food
- Packaging materials such as nonrecyclable empty containers

TABLE 2-1: SOLID WASTE DISPOSAL REQUIREMENTS

☐ Haul solid waste to a legal disposal facility:
- Landfill
- Incinerator
- Transfer/processing facility

Solid waste can be hauled by yourself or a solid waste hauler.

☐ Store solid waste in leak-proof covered containers.

☐ Local ordinances may require that your dumpster be enclosed in a fenced area.

☐ Open dumping of business waste is prohibited.

☐ If you ship your solid waste out of your county to another Michigan county, check with your county planning agency or with your local WHMD district office to make sure that it will be going to a county listed in the approved plan.

☐ If you are uncertain if a waste would be considered solid waste or how to properly manage it, contact your WHMD district office (Appendix C) to discuss your disposal options.

☐ **Open burning of business waste is prohibited**. On-site incineration of some waste may be allowed if the proper equipment is in place and a permit is obtained from the Air Quality Division. For more details on incineration, contact your Air Quality Division district office (Appendix C).

AUDIT QUESTION B3

Is the solid waste generated at your facility stored and discarded according to the guidelines identified in Table 2-1?

☐ **YES**
☐ **NO – Out of Compliance**

TABLE 2-2: BEST MANAGEMENT PRACTICES FOR SOLID WASTE MANAGEMENT

BEST MANAGEMENT PRACTICES - *Not Required but Recommended*

Recycling or reuse. Consider collecting:

- ✓ Office paper
- ✓ Corrugated cardboard
- ✓ Hangers
- ✓ Plastic film, like garment bags and shrink wrap
- ✓ Wood pallets
- ✓ 55-gallon drums
- ✓ Other containers

The removal of these and other bulky items from the trash can significantly lower solid waste disposal costs because your dumpster will not fill up as fast. You might also want to determine if you generate enough other materials to make collection of those items worthwhile.

AUDIT QUESTION B4

Have you instituted any of the best management practices for solid waste management identified in Table 2-2?

☐ **YES**
☐ **NO - Recommended**

2.2 Liquid Industrial Waste

Liquid industrial waste is liquid waste that is not regulated as hazardous waste and includes off-specification commercial chemical products, industrial wastewater, used oil that is being recycled, storm sewer and sanitary sewer clean-out residue, grease trap clean-out residue, and other liquid waste.

You must obtain permission from your local publicly owned treatment works (POTW) before discharging liquid waste to the sewer. This is discussed in more detail in Chapter 3. Chapter 2 only discusses the general requirements regarding liquid industrial wastes.

The following waste solvents have a flash point over 140° F and therefore may be managed as liquid industrial waste **as long as they are not mixed with other wastes**:

- GreenEarth
- Drylene 800
- Rynex
- DF-2000.

All other solvents should be managed as a hazardous waste.

IMPORTANT: If a small quantity generator of hazardous waste mixes any listed hazardous waste (see Table 2-5) with other wastes, **all** the waste in the container is considered a listed hazardous waste. It is recommended that conditionally exempt small quantity generators not mix wastes. Contact your WHMD inspector before mixing wastes to discuss waste determinations.

"Conditionally exempt small quantity generator" and "small quantity generator" are defined on page 2-13.

AUDIT QUESTION B5
Does your establishment generate any liquid industrial waste?

☐ **YES**
☐ **NO – Skip to Section 2.3** (page 2-7)

AUDIT QUESTION B6
Do you store any liquid industrial waste on-site?

☐ **YES**
☐ **NO – Skip to Section 2.3** (page 2-7)

BEST MANAGEMENT PRACTICE
Do not mix your wastes. Mixing your wastes may make them more expensive to dispose of and for some sources is illegal. Contact your WHMD inspector to see if it is appropriate to mix your wastes.

TABLE 2-3: LIQUID INDUSTRIAL WASTE GENERATOR REQUIREMENTS

- ☐ The containers must be kept closed and labeled with their content name.
- ☐ Containers containing used oil generated from your air compressor or other machinery maintenance must be labeled "Used Oil."
- ☐ You must manage the waste in ways that protect the environment.
- ☐ Storage containers must be protected from weather, fire, physical damage, and vandalism.
- ☐ The exterior of the storage containers and hauling vehicles must be kept free of the liquid waste and its residue.
- ☐ You must keep records that show how you determined that the waste is a liquid industrial waste. For example, you may use an MSDS that shows the flash point of the substance is above 140° F.
- ☐ You will need to obtain an identification number (see page 2-14).
- ☐ You must use manifests for shipping the liquid industrial waste or have other shipping records (see page 2-21).
- ☐ You must hire a permitted and registered transporter of liquid industrial waste to take the waste to an appropriate disposal facility **OR** self-transport the waste according to the liquid industrial waste requirements. If you self-transport, contact the WHMD at 734-432-1256 regarding insurance requirements and see page 2-21 for recordkeeping requirements.

Aboveground storage of flammable and combustible liquid industrial waste is also regulated by the WHMD. See the requirements discussed in Chapter 4. Depending on the waste flash point, you may also be regulated by the **MIOSHA General Industry Safety Standards, Part 75, Flammable and Combustible Liquids**, and the local municipality's fire prevention code.

AUDIT QUESTION B7

Are you in compliance with the liquid industrial waste requirements identified in Table 2-3?

☐ **YES**

☐ **NO – Out of Compliance**

2.3 Hazardous Waste

This section discusses the general requirements regarding hazardous waste disposal. The extent to which you are regulated depends on the amount of hazardous waste you generate within a specific time period. Follow Steps 1-5 on the following pages.

Step 1. Determine if you generate universal waste

Step 2. Determine if you are in compliance with the universal waste requirements

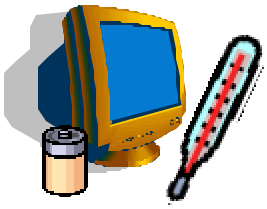
Step 3. Determine if you generate hazardous waste

Step 4. Determine how much hazardous waste you generate

Step 5. Determine your "generator status"

Once you have completed these steps you will be able to identify the hazardous waste requirements that apply to your business. This section separates out the requirements by generator status category. If you have any questions about hazardous waste management, call your DEQ, Waste and Hazardous Materials Division (WHMD) district office (Appendix C) to discuss your requirements.

STEP 1: Determine If You Generate Universal Waste



Businesses have the choice of handling specific wastes as a "**universal waste"** instead of managing them as a hazardous waste. The following items may be handled as universal waste:

- Electric lamps including fluorescent, high intensity discharge, sodium vapor, mercury vapor, neon, and incandescent lamps; and cathode ray tubes (CRTs) from computers, televisions, or other equipment.
- Batteries, including lead acid and dry cell types.
- Devices containing only elemental mercury, such as thermostats, switches, thermometers, and other devices.
- Some pesticides, including certain suspended, canceled, or unused pesticides.

AUDIT QUESTION B8

Do you generate any of following "universal" wastes:

- ☐ Electric lamps including spent fluorescent tubes, high intensity discharge, sodium vapor, mercury vapor, neon, and incandescent lamps.
- ☐ Batteries, including lead acid and dry cell types
- ☐ Thermometers, thermostats, and other devices that contain mercury
- ☐ Televisions and computer monitors
- ☐ Pesticides

☐ **YES**

☐ **NO – Skip to Step 3**

Advantages of Handling Wastes as a Universal Waste:

- ✓ If you choose to manage these waste streams as a universal waste, you do not include this quantity in determining your generator status. This may allow you to reduce your generator status level. For example, a large quantity generator that manages part of its hazardous waste stream as a universal waste may be able to become a small quantity generator.
- ✓ Facilities can store universal wastes up to one year. This is a longer storage time than allowed for small quantity and large quantity generators of hazardous waste.
- ✓ There is less labeling required for storage of universal waste than what is required for hazardous waste. The labeling is specific to the waste.
- ✓ A hazardous waste manifest and the use of permitted and registered hazardous waste transporters is not necessary to ship the waste. However, if the waste is a liquid (e.g., pesticides) it must be manifested under the liquid industrial waste regulations and a permitted and registered liquid industrial waste transporter must be used (see 2.3.4.a).

STEP 2: Determine if you are in Compliance with the Universal Waste Requirements

The requirements for handling your universal waste will depend on if you are a small or large quantity handler.

- If you accumulate no more than **11,000 pounds** of universal wastes at any one time, you are a "**small quantity handler**" of universal waste.
- If you accumulate more than 11,000 pounds of these wastes at any one time, you are a "**large quantity handler**" of universal waste. This workbook is not intended for large quantity handlers. Contact your inspector or WHMD district office (see Appendix C) for information about the requirements that apply to your business.

TABLE 2-4: UNIVERSAL WASTE REQUIREMENTS

Recordkeeping

- ☐ **Small Quantity Handlers** are not required to keep a record of their universal waste shipments. However, the DEQ recommends records be kept to verify proper management.

Accumulation Time Limits

- ☐ Universal waste handlers can store universal waste up to **one year** after generation or after receiving the waste from another handler. A longer storage time may be allowed if it is proven that it is necessary to accumulate enough universal waste to facilitate proper recovery, treatment, or disposal.

UNIVERSAL WASTE REQUIREMENTS *(continued)*

☐ You must be able to show how long you have had the waste. This can be done by one of the following:

- Labeling the container with the first date universal waste was put into it or when the container was received.
- Labeling the individual item with the date it was considered a waste or received as a universal waste.
- Maintaining an inventory system on-site which identifies the date it became a waste or was received.
- Placing the universal waste in a specific storage area and identifying the earliest date that any universal waste was put in that area.
- Using any other method that clearly demonstrates how long the universal waste has been accumulated.

Container

☐ Universal waste must be stored in a way that prevents any spills or releases. Containers must be kept closed, in good condition, and be compatible with the type of universal waste stored in the containers.

Labeling

☐ You will need to label the individual universal waste (such as each thermostat) or the container holding the waste with the following:

- Electric lamps: the words "*universal waste electric lamps*," or "*waste electric lamps*," or "*used electric lamps.*"
- Batteries: the words "*universal waste battery(ies)*," or "*waste battery(ies)*," or "*used battery(ies).*"
- Mercury and devices containing mercury (e.g., thermostats, mercury switches, mercury thermometers): the words "*universal waste mercury thermometers*," or "*waste mercury thermometers*," or "*used mercury thermometers*."
- Pesticides: include the legible label that was on or accompanied the original product and the words "*universal waste pesticide(s)*" or "*waste pesticide(s)*." If the pesticide label is not readable, then use the appropriate label as required by the U.S. Department of Transportation (DOT).

Emergency Training

☐ Inform employees who handle or have responsibility for managing universal waste about the proper handling and emergency procedures relative to their responsibilities and appropriate for the type of universal waste handled at that facility.

AUDIT QUESTION B9

Are you managing your universal waste according to the universal waste requirements identified in Table 2-4?

☐ **YES**

☐ **NO - These wastes must be managed as hazardous wastes. Include them in the Worksheet in Step 4.**

STEP 3: Determine If You Generate Hazardous Waste

Federal and state regulations define wastes as hazardous if they are either included on specific **lists** or exhibit certain hazardous **characteristics**. These wastes have been determined to be a threat to human health or the environment. Hazardous wastes have specific numbers assigned to the different constituents or processes that generate the waste. Depending on the waste, you may have some waste to which several waste numbers apply. For example perc waste may have F002, U210, and D039 waste codes.

All waste generators, except households, are required by law to determine if any of their waste is hazardous waste. Your business must keep records of its waste evaluations and other information used to determine what type of waste you have. These records must be kept at least three years after the waste was shipped for treatment, storage, or disposal.

If you don't know whether or not a waste you are generating is "hazardous," contact your WHMD inspector or an environmental consultant.

Use the descriptions and examples provided below to determine if you generate hazardous wastes that are listed or characteristic.

Listed Waste

Listed waste includes waste materials listed by name or generation sources on the federal and Michigan lists of hazardous waste. Table 2-5 identifies the types of listed waste as well as listed wastes that may be found at dry cleaning establishments.

TABLE 2-5: LISTED WASTES

List	Description	Common Examples
"F" list	Waste from listed nonspecific sources.	Spent solvents, cooked powder residue (from perc plants), still residues, and spent cartridge filters containing perc that have a hazardous waste number of F002 and xylene which has a waste number of F003.
"K" list	Waste from listed specific sources. These are wastes from specifically identified industries.	Dry cleaning facilities typically do not generate these hazardous wastes.
"P" & "U" lists	Discarded commercial chemical products.	Unused perc which has a hazardous waste number of U210, xylene with a waste number of U239, Toluene with a waste number of U220, and other spotters (e.g., trichloro acetic acid [TCA] and trichloroehlene [TCE]).

IMPORTANT: If a small quantity generator of hazardous waste mixes any listed hazardous waste (Table 2-5) with other wastes, **all** the waste in the container is considered a listed hazardous waste. It is recommended that conditionally exempt small quantity generators not mix wastes. Contact your WHMD inspector before mixing wastes to discuss waste determinations.

Characteristic waste

Even if your waste does not appear on one of the hazardous waste lists, it still might be regulated as hazardous waste if it exhibits one or more of the characteristics in Table 2-6.

TABLE 2-6: CHARACTERISTIC WASTES

Characteristic	Common Examples
Ignitable - Starts burning easily; liquid with a flash point below 140° F, solid that spontaneously ignites, or oxidizing material. These wastes have a hazardous waste number of D001.	Stoddard solvent, isopropanol, naphtha, methyl isobutyl ketone, mineral spirits, still residues containing petroleum solvents, solvent-soaked rags, and oxidizers (e.g., bleach, nitrates, and peroxides)
Corrosive - Dissolves metals or burns skin; pH less than or equal to 2.0 or greater than or equal to 12.5. These wastes have a hazardous waste number of D002.	Caustics like alkaline cleaners and ammonia solutions
Reactive - Undergoes rapid or violent chemical reaction and necessitates special handling requirements. These wastes have a hazardous waste number of D003.	Organic peroxides, perchlorates, acetyle chloride, cyanides, sulfides, and explosives
Toxic - Poisonous to humans and other living organisms. These are sometimes called TCLP wastes. Hazardous waste numbers are assigned to specific materials and include D004 through D043.	Perc (can be both a listed and characteristic waste) fluorescent lamps, dry cell batteries, various metal-bearing solutions, some pesticides, and other organic chemicals
Severely toxic - These wastes contain one part per million (ppm) or more of a severely toxic material. These materials are regulated at quantities of one kilogram, which is just over two pounds or more. The hazardous waste numbers include 001S through 007S.	Dry cleaning facilities typically do not generate these hazardous wastes

AUDIT QUESTION B10

Do you generate any listed or characteristic hazardous wastes that are not managed as universal wastes? (review the examples in Tables 2-5 and 2-6)

☐ **YES**

☐ **NO – Go to Chapter 3**

AUDIT QUESTION B11

Have you kept the records, test results, MSDSs, or other documentation used for your waste determinations for at least three years from the last date your hazardous waste was sent to a disposal facility?

☐ **YES**

☐ **NO – Out of Compliance**

STEP 4: Determine How Much Hazardous Waste You Generate

Use the worksheet below to estimate how many pounds of hazardous waste your facility generates in an average month. *Note: This worksheet provides only an approximation of the amount of waste you might generate. If you have a more accurate estimation you should use it to determine your generator status in Step 5.*

HAZARDOUS WASTE WORKSHEET

Hazardous Waste		Monthly Generation		
		Gallons	lbs/gallon*	Pounds
Spent solvent *(do not include spent solvents that are reclaimed and returned to the dry cleaning process for reuse as long as the entire process is enclosed)*	☐ Perc		x 13.5 =	
	☐ Petroleum solvents (flash point below 140° F)**		x 7 =	
	☐ Other solvents (flash point below 140° F)**		x 8 =	
Unused products which are to be discarded	☐ Perc		x 13.5 =	
	☐ Petroleum solvents (flash point below 140° F)**		x 7 =	
	☐ Other unused *liquids* that are hazardous		x 8 =	
	☐ Other unused *solids* that are hazardous			
Water contaminated with cleaning solvent that is stored on-site			x 8.4 =	
Spent filter cartridges				
Cooked powder residue				
Still residues from solvent distillation (solids)				
Solvent soaked rags or towels that are not being sent to a commercial cleaning service or cleaned on-site for reuse				
Universal wastes that are **not** being managed according to the universal waste requirements (see Step 2)				
			TOTAL:	

* Multiply the number of gallons generated by this number to determine the number of pounds generated.

**Solvents with a flash point above 140° F (e.g., Green Earth, Drylene 800, DR-2000, Rynex) are not considered a hazardous waste if not mixed with other hazardous waste and should be managed as a liquid industrial waste see 2.2.

Use this number to determine your generator status in Step 5.

STEP 5: Determine Your Hazardous Waste Generator Status

Your company's generator status is based on the total quantity of all the hazardous waste being generated and accumulated at your site over a specific time period. To determine your hazardous waste generator status, use the total from the hazardous waste worksheet in Step 4.

Generator Category	Monthly Hazardous Waste Generation Rate	Maximum Amount of Hazardous Waste that can be accumulated on-site
Conditionally Exempt Small Quantity Generator (CESQG)	220 pounds (100 kg) or less per month	2,200 pounds (1,000 kg)
Small Quantity Generator (SQG)	Greater than 220 pounds (100 kg) but less than 2,200 pounds (1,000 kg) per month	13,200 pounds (6,000 kg)
Large Quantity Generator (LQG)	2,200 pounds (1,000 kg) or more per month	No maximum amount

The rest of this chapter provides the requirements that apply to each generator category.

- If you are a **Conditionally Exempt Small Quantity Generator** go to Section 2.3.1, which starts on the next page, to find the requirements that apply to your business.
- If you are a **Small Quantity Generator** go to Section 2.3.2, which starts on page 2-25, to find the requirements that apply to your business.
- If you are a **Large Quantity Generator (LQG)** it is recommended that you contact your WHMD district office (see Appendix C). This workbook is not intended for LQGs. Your WHMD inspector can provide you with appropriate information and assistance for complying with the hazardous waste regulations.

AUDIT QUESTION B12

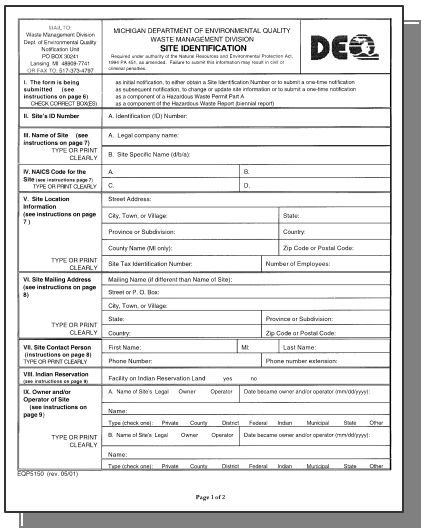
What is your generator status?

- ☐ **Conditionally Exempt Small Quantity Generator (CESQG)** – Go to Section 2.3.1
- ☐ **Small Quantity Generator (SQG)** – Go to Section 2.3.2
- ☐ **Large Quantity Generator (LQG)** – Go to Chapter 3

2.3.1 Conditionally Exempt Small Quantity Generator (CESQG) Requirements

(These requirements also apply to generators of liquid industrial waste)

CESQG Identification Numbers


MAIL TO:
Waste Management Division
Dept. of Environmental Quality
Notification Unit
PO BOX 30241
Lansing MI 48909-7741
OR FAX TO: 517-373-4797

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE MANAGEMENT DIVISION
SITE IDENTIFICATION

Required under authority of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Failure to submit this information may result in civil or criminal penalties.

DEQ

I. The form is being submitted (see instructions on page 6) CHECK CORRECT BOX(ES): as initial notification, to either obtain a Site Identification Number or to submit a one-time notification; as subsequent notification, to change or update site information or to submit a one-time notification; as a component of a Hazardous Waste Permit Part A; as a component of the Hazardous Waste Report (biennial report)

II. Site's ID Number: A. Identification (ID) Number:

III. Name of Site (see instructions on page 7) TYPE OR PRINT CLEARLY: A. Legal company name: B. Site Specific Name (d/b/a):

IV. NAICS Code for this Site (see instructions page 7) TYPE OR PRINT CLEARLY: A. B. C. D.

V. Site Location Information (see instructions on page 7) TYPE OR PRINT CLEARLY: Street Address: City, Town, or Village: State: Province or Subdivision: Country: County Name (MI only): Zip Code or Postal Code: Site Tax Identification Number: Number of Employees:

VI. Site Mailing Address (see instructions on page 8) TYPE OR PRINT CLEARLY: Mailing Name (if different than Name of Site): Street or P. O. Box: City, Town, or Village: State: Province or Subdivision: Country: Zip Code or Postal Code:

VII. Site Contact Person (instructions on page 8) TYPE OR PRINT CLEARLY: First Name: MI: Last Name: Phone Number: Phone number extension:

VIII. Indian Reservation (see instructions on page 8): Facility on Indian Reservation Land yes no

IX. Owner and/or Operator of Site (see instructions on page 9) TYPE OR PRINT CLEARLY: A. Name of Site's Legal Owner Operator Date became owner and/or operator (mm/dd/yyyy): Name: Type (check one): Private County District Federal Indian Municipal State Other; B. Name of Site's Legal Owner Operator Date became owner and/or operator (mm/dd/yyyy): Name: Type (check one): Private County District Federal Indian Municipal State Other

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CESQGs and generators of liquid industrial waste have to obtain a site identification number if they **ship liquid wastes off-site**. These numbers are used to track hazardous and liquid industrial wastes. The number is used on the shipping manifests which are discussed later.

To obtain a site identification number, complete, sign, and submit the **"Site Identification Form" (EQP5150)**. The form and instructions may be downloaded off the Internet at **www.michigan.gov/deq** (select "Waste," "Hazardous Waste," "Hazardous Waste Management," then look under "Forms" for the "Hazardous Waste Forms and Permit Applications" link), or you may call 517-335-5035 or 800-662-9278 to obtain a printed copy. There is a fee to obtain a number.

Do I need to get a new Identification Number if I already have a US EPA or Michigan Identification Number?

No. However, a facility may need to obtain a new site identification number and update notification information previously submitted if there are changes regarding their hazardous waste or liquid industrial waste management at the site. If your facility changes its generator status or makes other changes that may affect the requirements that you are subject to, contact the DEQ's Waste and Hazardous Materials Division to see if you need to obtain a new Identification Number.

AUDIT QUESTION B13

Does your CESQG facility ship liquid waste off-site?

☐ **YES**

☐ **NO - Go to "CESQG Accumulation"** (page 2-15)

AUDIT QUESTION B14

Does your CESQG facility have a site identification number?

☐ **YES**

☐ **NO - Out of Compliance**

CESQG Accumulation

CESQGs may accumulate up to 2,200 pounds (1,000 kg) of hazardous waste on-site. However, a facility may wish to send waste off-site long before approaching this threshold. This limit was set so that a small business could accumulate enough hazardous waste to make shipping and disposal more economical.

During this time period, hazardous waste must be properly stored at your facility to prevent contamination of the environment. It is recommended that you keep a log to document when waste was generated.

AUDIT QUESTION B15
Is there less than 2,200 pounds of hazardous waste on-site?

☐ **YES**
☐ **NO - Out of Compliance**

CESQG Container Management

Hazardous waste is commonly stored in either portable containers such as pails, 55 gallon drums, totes, or in aboveground storage tanks. Contact your WHMD district office for information regarding specific hazardous waste storage requirements. Chapter 4 provides more information on regulations affecting storage tanks. In addition, the aboveground storage of flammable and combustible liquids may also be regulated by the **MIOSHA General Industry Safety Standards - Part 75, Flammable and Combustible Liquids**, and your local municipality's fire prevention code.

TABLE 2-7: GENERAL REQUIREMENTS FOR ALL STORAGE CONTAINERS

- ☐ Containers must be maintained in good condition.
- ☐ Any leaking containers must be replaced.
- ☐ Containers must be kept closed except when adding or removing waste.
- ☐ Containers must be compatible with the type of waste being stored in them.
- ☐ Incompatible wastes must not be placed in the same container.
- ☐ All containers holding hazardous materials must be inspected weekly for signs of corrosion and leaks.
- ☐ Containers must be kept in an area that meets the required isolation distance from property lines. Check for any local requirements.
- ☐ Containers must be protected from weather and fire and secure from vandalism and physical damage such as that caused by fork lifts or other equipment. Keep adequate aisle space for unobstructed movement of emergency equipment and personnel.

GENERAL REQUIREMENTS FOR ALL STORAGE CONTAINERS *(continued)*

- ☐ Containers holding flammable and combustible hazardous waste must be protected to avoid fire hazards. The use of a bonding strip and ground clamps is a common method for meeting this requirement (this may be required by your fire department or insurance company). Also, MIOSHA requires containers containing flammable material that are stacked to have some barrier, like pallets between drums, to prevent sparking when the containers are moved.
- ☐ Conduct accumulation so that hazardous waste cannot escape into air, water, or land.
- ☐ Spills must be cleaned up promptly.
- ☐ Container must be properly labeled (see Table 2-9).

AUDIT QUESTION B16
Are you managing your hazardous waste containers in accordance with the requirements identified in Table 2-7?

☐ **YES**
☐ **NO - Out of Compliance**

TABLE 2-8: BEST MANAGEMENT PRACTICES FOR CESQG CONTAINER MANAGEMENT

BEST MANAGEMENT PRACTICES - *Recommended*

Container Management

- ☐ Keep containers that have wastes that could react with each other separated by a physical barrier, like a dike, berm, or wall, or by a safe distance.
- ☐ Store hazardous waste containers on a surface that prevents spills and leaks to the environment. The surface should not allow any material to leak through, and it should have no cracks or gaps. The surface should also prevent spills and leaks from running over the edge onto the ground. A sealed concrete pad with a sealed curb around it, overpack drum, or a spill control pallet is recommended.
- ☐ Store containers on a raised platform off the ground to prevent flooding.

Container Inspections and Recordkeeping

- ☐ Check all containers at least once a week to ensure that they are not leaking or rusting and that they have no bulges. You should also check to see how much waste is stored in your containers to make sure you do not exceed the 2,200 lbs (five drum) limit.
- ☐ Keep a record of the results of your weekly container inspections, including:
  - Date and time of the inspection;
  - Name of the person who inspected the containers;
  - Total number of containers;
  - Condition of the containers;
  - Any notes or observations about the containers; and
  - Date and nature of any repairs or corrective actions.

  The WHMD's "Required Weekly Hazardous Waste Maintenance Checklist" is provided at the end of Chapter 2.
- ☐ Keep the records of your container inspections at your shop for three years.

BEST MANAGEMENT PRACTICES - *Recommended (continued)*

Container Spill Control

- ☐ When you are opening, handling, or storing containers, be very careful to avoid rupturing the containers or causing them to leak or spill.
- ☐ If you have a leak or spill, you should immediately stop and contain the leak and repair or replace the container.
- ☐ Maintain a spill kit for the accumulation area.

AUDIT QUESTION B17
Have you instituted any of the best management practices for container management identified in Table 2-8?

☐ **YES**
☐ **NO - Recommended**

CESQG Labeling Requirements

The proper labeling of waste helps to ensure that it is not mismanaged. It is a good idea to put one person in charge of making sure the wastes are correctly identified and labeled. Labeling also helps to protect the workers. If the contents of drums are not known, the chances of a worker being exposed to hazards or being injured are great. An explosion could occur if wastes that are incompatible are mixed with unknown wastes in a drum.

You are not required to use any specific label. However, you should identify the container as a hazardous waste and include what is being stored in the container (e.g., “spent perc” or “spent solvent”). You can stencil the information on the containers or you can purchase commercially-prepared labels. You may also use the shipping label as long as the information is filled out. Make sure the label you use does not become unreadable or dissolve if exposed to the weather or hazardous materials. This can be a problem with containers holding solvents.

AUDIT QUESTION B18
Is the CESQG hazardous waste that is stored in accumulation areas labeled?

☐ **YES**
☐ **NO - Out of Compliance**

TABLE 2-9: CESQG LABELING REQUIREMENTS FOR HAZARDOUS WASTE SHIPMENT

Hazardous materials must be shipped in containers acceptable for transportation and properly labeled according to the US DOT requirements.

A container must have the headings "*Generator Name and Address*" and "*Manifest Document Number*," with that information provided. This label and others are available from commercial firms including mail order companies. Properly labeled containers also include:

- ☐ Labels clearly identifying the type of waste and its hazards in that particular container.
- ☐ Words or symbols for characteristics such as "flammable" and "corrosive" that are clear and understandable to employees.
- ☐ Protection of the label from solvents and weather. This can be done by covering the label with varnish or clear packing tape and keeping the container under roof cover.

Your hazardous waste hauler should be able to assist you in properly labeling the containers for transport. Contact the Michigan State Police, Motor Carrier Division at 517-336-6580 for additional transportation requirements.

AUDIT QUESTION B19

Is hazardous waste that is being shipped off-site in compliance with the labeling requirements identified in Table 2-9?

☐ **YES**

☐ **NO - Out of Compliance**

CESQG Employee Emergency Training

CESQGs do not have specific training requirements under the hazardous waste regulations; however it is recommended that you familiarize employees with emergency procedures; emergency equipment; emergency systems (such as communication or alarm systems, response to fires or explosions, shutdown of operations, response to unplanned sudden or non-sudden releases of hazardous waste); and their roles in implementing the hazardous waste contingency plan relevant to their positions.

TABLE 2-10: BEST MANAGEMENT PRACTICES FOR CESQG EMERGENCY TRAINING

BEST MANAGEMENT PRACTICES - *Recommended*

TRAINING
A good employee training program should teach your shop's staff how to:

☐ Identify hazardous waste. After being trained, your employees should:
- Know which materials and wastes in your shop are hazardous;
- Be able to tell when a new product or waste might be hazardous;
- Know how to read and use Material Safety Data Sheets (MSDSs); and
- Understand warning labels on hazardous products.

☐ Inspect and handle hazardous wastes. After being trained, your employees should:
- Avoid spills (for example, by using funnels, drip pans, and absorbent materials);
- Use equipment to protect themselves (such as gloves and respirators);
- Keep hazardous wastes separate from one another and from other materials;
- Store materials and wastes correctly (such as labeling waste containers and marking the date when you first put waste into an empty container); and
- Avoid improper disposal of waste (by not dumping hazardous waste on the ground, in drains, or dumpsters; by not burning hazardous waste or letting it evaporate; and by not mixing hazardous waste with non-hazardous waste).

☐ Follow Emergency Response Procedures. After being trained, your employees should know how to:
- Respond to spills or other accidents;
- Respond to communications and alarm systems;
- Contact emergency responders (fire, police, and ambulance);
- Find emergency equipment;
- Extinguish a small fire and when to try to do so;
- Contain and clean up a waste spill;
- Follow your shop's emergency plan; and
- Use evacuation plans and routes.

☐ Prevent Pollution. After being trained, your employees should:
- Know how to reduce the amount of hazardous waste they generate by carefully managing inventories, substituting less toxic materials where possible, and recovering and recycling waste.

☐ You should provide training to all new employees within six months of hiring them. You should provide refresher training every year.

AUDIT QUESTION B20
Have you instituted any of the best management practices for employee emergency training identified in Table 2-10?

☐ **YES**
☐ **NO - Recommended**

CESQG HAZARDOUS WASTE DISPOSAL

CESQGs are not required to hire a permitted and registered hazardous waste transporter or dispose of their "solid" hazardous waste at a permitted or licensed hazardous waste disposal facility. However, it is recommended that you use a hazardous waste disposal facility or recycle your waste. In a few Michigan areas, the local household hazardous waste collection programs accept hazardous waste from CESQGs for a fee. A list of local collection sites is available at **www.michigan.gov/deq** (select "Pollution Prevention" then "Recycling").

TABLE 2-11: CESQG DISPOSAL REQUIREMENTS

- ☐ Your waste that is **NOT** considered a "**liquid**" waste can be disposed of at a sanitary landfill if the landfill authority will accept it. Contact the landfill before putting solid hazardous wastes into your dumpster.
- ☐ Dispose of "liquid" waste in one of the following ways:
  - Ship it to an authorized hazardous waste recycling, treatment, storage, or disposal facility.
  - Take your waste to a household hazardous waste collection site that is willing to accept your waste and will send the waste to an authorized hazardous waste disposal facility.
  - Sanitary sewer with prior authorization (see next bullet).
- ☐ Do not dispose of your liquid waste into the municipal sewer system unless you have received authorization from your local wastewater treatment plant (see Chapter 3).
- ☐ Do not dispose of your liquid waste by flushing it into the septic tank, down the storm drain, into a stream, or on the ground.
- ☐ Do not dispose of your liquid waste in a solid waste landfill, municipal waste incinerator, or in a dumpster.
- ☐ Do not treat your waste at your shop by burning it or allowing it to evaporate into the air.

AUDIT QUESTION B21

Are you complying with the hazardous waste disposal requirements identified in Table 2-11?

☐ **YES**
☐ **NO - Out of Compliance**

TABLE 2-12: BEST MANAGEMENT PRACTICES FOR CESQG WASTE DISPOSAL

BEST MANAGEMENT PRACTICES - *Not Required but Recommended*
Disposal
☐ Dispose of your hazardous wastes that are solids in one of the following ways: • Ship the hazardous waste to a licensed recycling, treatment, storage, or disposal facility. • Take the waste to a household hazardous waste collection site that is willing to accept your hazardous waste.
☐ Do not dispose of your "solid" hazardous wastes in a solid waste landfill, municipal waste incinerator, or in a dumpster.

AUDIT QUESTION B22

Have you instituted any of the best management practices for waste disposal identified in Table 2-12?

☐ **YES**
☐ **NO - Recommended**

CESQG Manifests

The multi-copy manifest forms are designed to track hazardous and liquid industrial waste shipments from their point of generation to their final destination. Specific requirements depend on the type of waste shipped. **CESQGs are only required to manifest hazardous wastes that are liquids (e.g., waste solvents).**

When are Manifests Not Required?

For the majority of generators, manifesting will be required. However, manifesting is not required if either of the following apply:

1. CESQGs haul their own **liquid waste** in amounts of 55 gallons or less to a designated facility if the following conditions are met:
   - ✓ A record of the source and quantity of waste and where the waste is being transported to accompanies the waste shipment.
   - ✓ The generator obtains a signature from the designated facility acknowledging receipt of the waste and provides a copy of the record to that facility.
   - ✓ The generator keeps a copy of the shipment records for at least three years.
   - ✓ The designated facility is managed according to the liquid industrial waste regulations.

2. A permitted or registered transporter picks up waste on a "consolidated manifest." The hauler must provide a receipt showing:
   - ✓ The transporter's company
   - ✓ Driver's signature
   - ✓ Date of pickup
   - ✓ Type and quantity of waste removed
   - ✓ Consolidated manifest number
   - ✓ Name of a designated facility

It is advised that you discuss these manifest exemptions with your WHMD district office (see Appendix C for phone numbers).

AUDIT QUESTION B23
Are you required to manifest your hazardous wastes?

☐ **YES**
☐ **NO – Go to Chapter 3**

TABLE 2-13: MANIFEST REQUIREMENTS FOR CESQGs

- ☐ CESQGs must manifest hazardous wastes that are liquids (e.g., waste solvents) unless exempt (see "When are Manifests Not Required" on the previous page).
- ☐ Use the manifest form instructions to properly list your wastes on the manifest form.
- ☐ The generator of the waste, the transporter, and the disposal facility that receives the waste must each sign and keep a copy of the manifest as they handle the waste (review the diagram on the next page).
- ☐ Submit the appropriate manifest copy to the WHMD according to the Manifest Procedure diagram on the following page.
- ☐ Keep a copy signed by the hauler and disposal facility on file for at least three years.
- ☐ If shipping out of state, submit a copy of the manifest returned by disposal company to WHMD within ten days after the end of the month when copy was received.

AUDIT QUESTION B24
Are you complying with the manifest requirements identified in Table 2-13?

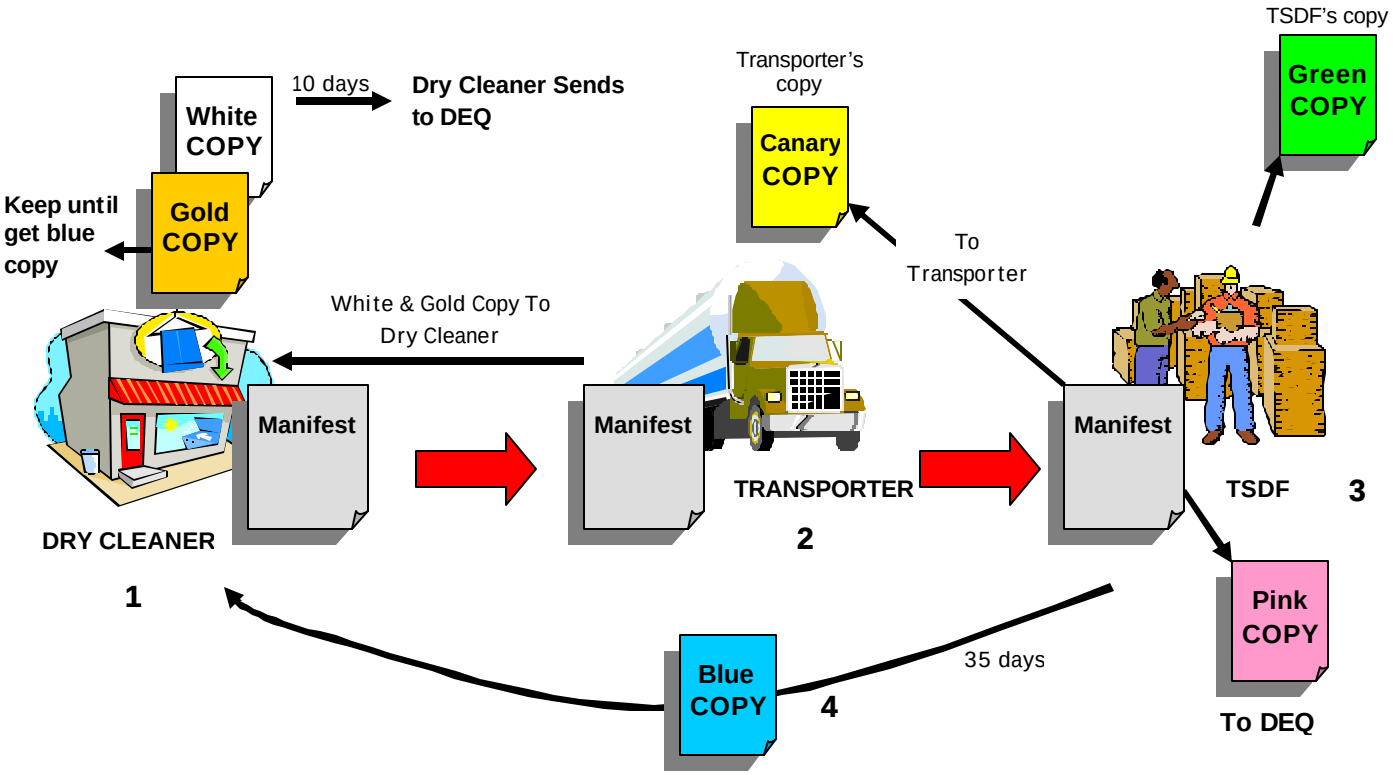
☐ **YES**
☐ **NO - Out of Compliance**

Where Can I Get Manifests?

Usually your waste transporter will provide you with the proper manifest; however, you can also obtain blank copies of Michigan manifests by contacting the WHMD, Manifest Unit. Ordering information is at **www.michigan.gov/deq** (select "Waste," "Hazardous Waste," "Hazardous Waste Management," then look under the "Forms" heading). Currently, there is a charge for the manifests. The WHMD requires that Michigan manifests be used in place of the US EPA manifests or another state's forms for shipments to any Michigan disposal facility. Both liquid industrial waste and hazardous waste shipments are listed on the DEQ "Uniform Hazardous Waste Manifest" (EQP 5110). If you are shipping your hazardous waste out of state, check with the respective state as to which manifest you should use.

NOTE: A national manifest system is being developed by US EPA and US DOT. Information and instructions will be posted on the DEQ waste website when it is finalized. It is anticipated to go into effect in 2004. Continue to use the Michigan Manifests as described in this section until the new national manifest system is implemented in Michigan.

MANIFEST PROCEDURE FOR SHIPMENTS WITHIN MICHIGAN



1. Complete the manifest forms using the instructions provided.
2. Your transporter will sign the manifest forms and provide you with two copies. You must submit the white copy to the WHMD within 10 days after the end of the month in which you shipped the waste. The gold copy should be kept in your records until you receive a copy of the manifest from your treatment, storage, or disposal facility (TSDF) in Step 4.
3. The disposal facility will sign the manifest forms and provide the transporter with a copy.
4. The disposal facility will send you a copy of the manifest form with the Transporter and disposal facility signature within 35 days. When you receive the blue copy you can dispose of the gold copy you received from the transporter in Step 2. The TSDF will also send a copy of the manifest to the DEQ.

NOTE: If the waste was shipped out of state you will need to:

a. Meet the receiving state's requirements
b. Submit a copy of the manifest to the WHMD as in Step 2 above.
c. Send a copy of the manifest you receive from the TSDF to the WHMD. Submit it no later than 10 days after the end of the month from receiving the TSDF signed manifest (you may need to make photo copies of the signed manifest forms to ensure that you have enough copies to send).

What Should I Do if I Don't Receive My Copy of the Manifest from My Disposal Facility?

If you shipped liquid industrial waste or are a Conditionally Exempt Small Quantity Generator and have not received a copy of the manifest from your disposal facility within 35 days, contact the transporter and disposal facility operator to determine what happened with your shipment. If you still have not received the manifest copy within 45 days after the waste was shipped, file an exception report with the WHMD. Include a copy of the manifest and a letter explaining what contacts you have had with the transporter and disposal facility and any information you have regarding the shipment.

Exception reports to the US EPA should be mailed to:

US EPA REGION 5
SHARON KIDDON (DR-7J)
77 WEST JACKSON BLVD
CHICAGO IL 60604

Exception reports to the DEQ, WHMD should be mailed to:

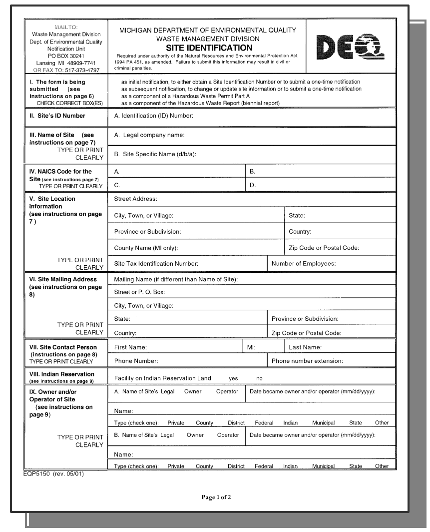
MDEQ WASTE & HAZARDOUS MATERIALS DIV.
DIVISION CHIEF
PO BOX 30241
LANSING MI 48909-7741

2.3.2 Small Quantity Generator (SQG) Requirements

SQG Identification Numbers

All small quantity generators of hazardous waste must obtain a site identification number. These numbers are used to track hazardous and liquid industrial wastes. The number is used on the shipping manifests which are discussed later.

To obtain a site identification number, complete, sign, and submit the **"Site Identification Form" (EQP5150)**. The form and instructions may be downloaded off the Internet at **www.michigan.gov/deq** (select "Waste," "Hazardous Waste," "Hazardous Waste Management," then look under "Forms" for the "Hazardous Waste Forms and Permit Applications" link), or you may call 517-335-5035 or 800-662-9278 to obtain a printed copy. There is a fee to obtain a number. An annual handler user charge will also be assessed for certain hazardous waste activities.



MAILTO:
Waste Management Division
Dept. of Environmental Quality
Notification Unit
PO BOX 30241
Lansing MI 48909-7741
OR FAX TO: 517-373-4797

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE MANAGEMENT DIVISION
SITE IDENTIFICATION
Required under authority of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Failure to submit this information may result in civil or criminal penalties.

DEQ

I. The form is being submitted (see instructions on page 6) CHECK CORRECT BOX(ES)	as initial notification, to either obtain a Site Identification Number or to submit a one-time notification as subsequent notification, to change or update site information or to submit a one-time notification as a component of a Hazardous Waste Permit Part A as a component of the Hazardous Waste Report (biennial report)	
II. Site's ID Number	A. Identification (ID) Number:	
III. Name of Site (see instructions on page 7) TYPE OR PRINT CLEARLY	A. Legal company name:	
	B. Site Specific Name (d/b/a):	
IV. NAICS Code for the Site (see instructions page 7) TYPE OR PRINT CLEARLY	A.	B.
	C.	D.
V. Site Location Information (see instructions on page 7) TYPE OR PRINT CLEARLY	Street Address:	
	City, Town, or Village:	State:
	Province or Subdivision:	Country:
	County Name (MI only):	Zip Code or Postal Code:
	Site Tax Identification Number:	Number of Employees:
VI. Site Mailing Address (see instructions on page 8) TYPE OR PRINT CLEARLY	Mailing Name (if different than Name of Site):	
	Street or P. O. Box:	
	City, Town, or Village:	
	State:	Province or Subdivision:
	Country:	Zip Code or Postal Code:
VII. Site Contact Person (instructions on page 8) TYPE OR PRINT CLEARLY	First Name: MI:	Last Name:
	Phone Number:	Phone number extension:
VIII. Indian Reservation (see instructions on page 9)	Facility on Indian Reservation Land yes no	
IX. Owner and/or Operator of Site (see instructions on page 9) TYPE OR PRINT CLEARLY	A. Name of Site's Legal Owner Operator	Date became owner and/or operator (mm/dd/yyyy):
	Name:	
	Type (check one): Private County District Federal Indian Municipal State Other	
	B. Name of Site's Legal Owner Operator	Date became owner and/or operator (mm/dd/yyyy):
	Name:	
	Type (check one): Private County District Federal Indian Municipal State Other	

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Do I need to get a new Identification Number if I already have a US EPA or Michigan Identification Number?

No. However, a facility may need to obtain a new site identification number and update notification information previously submitted if there are changes regarding their hazardous waste or liquid industrial waste management at the site. If your facility changes its generator status or makes other changes that may affect the requirements that you are subject to, contact the DEQ's Waste and Hazardous Materials Division to see if you need to obtain a new Identification Number.

AUDIT QUESTION B25
Does your facility have a site identification number?

☐ **YES**
☐ **NO - Out of Compliance**

SQG Land Disposal Restrictions

You must send a one-time written notice with the initial shipment of hazardous waste to your disposal facility containing specific language advising the disposal facility whether or not the hazardous waste shipment is prohibited from land disposal. A new notification must be sent when there is a waste or facility change. This is called a land ban notification, also known as a land disposal restriction (LDR).

Keep copies of the land ban notifications and certifications for at least three years after the last shipment of that waste.

Discuss your specific LDR requirements with your disposal facility or WHMD district office. Many disposal facilities have preprinted the specific statements on forms that you can use to meet this requirement and will help you properly fill out the information.

AUDIT QUESTION B26
Have you submitted a land ban notification (land disposal restriction) to your disposal facility?

☐ **YES**
☐ **NO - Out of Compliance**

SQG Accumulation Time Limits

There are specific requirements regarding how long you can store hazardous waste before shipping. Table 2-14 explains the accumulation time limits for hazardous waste being stored in a "satellite container" or a designated storage area.

TABLE 2-14: SQG ACCUMULATION TIME LIMITS

☐ It is permissible to accumulate up to **55 gallons** of hazardous waste, or one quart of acutely hazardous waste, in a labeled storage container at the point of generation as long as the operator has control of the process generating the waste (these are known as **satellite containers**). There is no limit on how long this container can be kept at its location as long as it is being used on a regular basis and the volume limit is not exceeded. Once the container volume exceeds the allowable amount it must be dated and moved into the storage area within three days.

☐ SQGs are allowed to accumulate hazardous waste on-site for up to 180 days (or 270 days if the distance to the disposal site is over 200 miles). The total waste quantity must not exceed 13,200 pounds (6,000 kilograms) of nonacute hazardous waste or 2.2 pounds (1kilogram) of acute or severely toxic hazardous waste. If you exceed this period, you will be required to obtain an operating license for the storage facility from the WHMD.

☐ During this time period, hazardous waste must be properly stored at your facility to prevent contamination of the environment. You must comply with the state and federal regulations discussed in this Chapter.

Remember: You are responsible for any contamination caused by your business.

AUDIT QUESTION B27
Is the hazardous waste in compliance with the accumulation requirements identified in Table 2-14?

☐ **YES**
☐ **NO - Out of Compliance**

SQG Container and Tank Requirements

Hazardous waste is commonly stored in either portable containers such as pails, 55 gallon drums, totes, or in aboveground storage tanks. There are additional regulations for aboveground storage of flammable and combustible liquids, including waste, with a flash point of less than 200° F (see Chapter 4 for more information). The aboveground storage of flammable and combustible liquids may also be regulated by the **MIOSHA General Industry Safety Standards - Part 75, Flammable and Combustible Liquids**, and the local municipality's fire prevention code.

TABLE 2-15: SQG STORAGE CONTAINER REQUIREMENTS

- ☐ Containers must be maintained in good condition.
- ☐ Any leaking containers must be replaced.
- ☐ Containers must be kept closed except when adding or removing waste.
- ☐ Containers must be compatible with the type of waste being stored in them.
- ☐ Incompatible wastes must not be placed in the same container.
- ☐ All containers holding hazardous materials must be inspected weekly for signs of corrosion and leaks.
- ☐ Containers must be kept in an area that meets the required isolation distance from property lines. Check for any local requirements.
- ☐ Containers must be protected from weather and fire and secure from vandalism and physical damage such as that caused by fork lifts or other equipment. Keep adequate aisle space for unobstructed movement of emergency equipment and personnel.
- ☐ Containers holding flammable and combustible hazardous waste must be protected to avoid fire hazards. The use of a bonding strip and ground clamps is a common method for meeting this requirement (this may be required by your fire department or insurance company). Also, MIOSHA requires containers containing flammable material that are stacked to have some barrier, like pallets between drums, to prevent sparking when the containers are moved.
- ☐ Meet the labeling requirements identified in Tables 2-18 and 2-19.

AUDIT QUESTION B28

Are you managing your hazardous waste containers in accordance with the requirements identified in Table 2-15?

☐ **YES**
☐ **NO - Out of Compliance**

AUDIT QUESTION B29

Do you have over 2,200 pounds (1,000 kg) of hazardous waste on-site?

☐ **YES**
☐ **NO – Skip to Table 2-17**

TABLE 2-16: SQG SECONDARY CONTAINMENT REQUIREMENTS

If 2,200 pounds or more of "liquid" hazardous waste, F020, F021, F022, F023, F026, or F027 waste is stored in an accumulation area it must have secondary containment or be managed according to the following:

- ☐ The base must be free of cracks and have an impervious surface.
- ☐ The containment area must be constructed so that it is able to hold either 10 percent of the total liquid volume of all the containers or 100 percent of the volume of the largest container, whichever is greater. If, however, a loss from one container can lead to losses from other containers, the enclosed area must be able to contain 100 percent of the entire liquid portion stored in all the containers.
- ☐ The secondary containment area must be designed to prevent run-on or be designed with sufficient excess capacity to contain any rainwater or snowmelt or other precipitation that might accumulate in the storage area. Containers must be stored in areas protected from the weather.
- ☐ The containers must be elevated or put on a sloped base that prevents them from coming into contact with any liquid accumulating within the containment area.
- ☐ All spills, leaks, and precipitation must be removed in a timely manner to prevent overflow from the containment area.
- ☐ Have squirt protection. Be aware that pallets are not sufficient to meet the secondary containment requirements for liquid hazardous waste because they do not provide adequate protection for "squirt distance," which is the distance a liquid would spurt out if a leak occurred.

Other solid hazardous waste in containers can be put in containment areas where the containers are not in contact with accumulated liquids including precipitation. The containers can be either:

- ☐ Elevated, or otherwise protected; OR
- ☐ Stored on a sloped surface, or the containment area can be of another design and operated to drain and remove precipitation.

The hazardous waste regulations do not specify exactly how secondary containment areas must be constructed. You can install a curb, a ramped pad, or a containment room; have structures custom-made for your situation; or use commercially available portable pallets that have a holding structure included in their design. Other design factors and regulations should also be considered when planning secondary containment. See Chapter 4 for more information about secondary containment and storage of other materials besides waste.

AUDIT QUESTION B30

Are you complying with the secondary containment requirements identified in Table 2-16?

☐ **YES**

☐ **NO – Out of Compliance**

TABLE 2-17: BEST MANAGEMENT PRACTICES FOR SQG CONTAINER MANAGEMENT

BEST MANAGEMENT PRACTICES - *Recommended*

Container Management

- ☐ Store only one type of hazardous waste per container. Do not mix different kinds of wastes. Mixing wastes can cause dangerous reactions and makes waste disposal more expensive and difficult.
- ☐ Avoid overfilling containers, especially if they are stored outdoors. Fifty-five gallons of some hazardous liquids can expand to 60 gallons or more when exposed to the heat and sun and may overflow.
- ☐ Use drip pans under the spigots of containers storing liquid materials. Make sure the drip pans are routinely emptied into the appropriate waste container.
- ☐ Store hazardous waste containers on a surface that prevents spills and leaks to the environment. The surface should not allow any material to leak through, and it should have no cracks or gaps. The surface should also prevent spills and leaks from running over the edge onto the ground. A sealed concrete pad with a curb around it or a spill control pallet is recommended.
- ☐ Keep containers with ignitable or flammable hazardous waste at least 50 feet inside your property line. Post large "No Smoking" signs near these containers.
- ☐ Keep a record of the results of your weekly inspections, including
  - Date and time of inspection
  - Name of the person who inspected the containers
  - Total number of containers
  - Condition of the containers
  - Any notes or observations about the containers
  - Date and nature of any repairs or corrective actions

  The WHMD's "Required Weekly Hazardous Waste Maintenance Checklist" is provided at the end of Chapter 2 for your use in meeting this record keeping requirement; however, you are not required to use this form.
- ☐ Keep the records of container inspections at your business for at least three years.
- ☐ Store containers on a raised platform off the ground to prevent flooding.

AUDIT QUESTION B31

Have you instituted any of the best management practices for container management identified in Table 2-17?

☐ **YES**
☐ **NO - Recommended**

SQG Labeling Requirements

Proper labeling of waste helps to ensure that it is not mismanaged. Labeling also helps to protect the workers. If the contents of drums are not known, the chances of a worker being exposed to hazards or being injured are great. An explosion could occur if wastes that are incompatible are mixed with unknown wastes in a drum. It is a good idea to put one person in charge of making sure the wastes are correctly identified and labeled. You may want to post an example of how the label should be completed above the drum's location.

TABLE 2-18: SQG LABELING REQUIREMENTS

When a waste is stored on-site in an **accumulation area**, each container must be labeled with the following:

- ☐ The words "Hazardous Waste"
- ☐ The hazardous waste number
- ☐ An accumulation date (meaning the date waste was first put into the container, unless it was a satellite container—then it would be the date the volume in the container met or exceeded the allowable amount)

Although not required, it is helpful to also label the storage containers with the common name of the waste with which it is being filled. For example, containers might be labeled with "Perc Waste."

Satellite containers must meet the following requirements:

- ☐ Labeled with the words **"Hazardous Waste"** and the waste number OR the chemical name of the contents
- ☐ Once the container volume exceeds the allowable amount (55 gallons), the containers must be:
  - Labeled with that date (which would be considered the accumulation date)
  - Labeled with the hazardous waste number if the chemical name was initially used on the label.
  - Moved into the accumulation area within three days.

You are not required to use any specific label to meet these requirements. You can stencil the information on the containers or you can purchase commercially-prepared labels. You may also use the shipping label as long as the above information is filled out. Make sure the label you use does not become unreadable or dissolve if exposed to the weather or hazardous materials. This can be a problem with containers holding solvents.

AUDIT QUESTION B32

Is the hazardous waste that is stored in accumulation areas and satellite containers in compliance with the labeling requirements identified in Table 2-18?

- ☐ **YES**
- ☐ **NO - Out of Compliance**

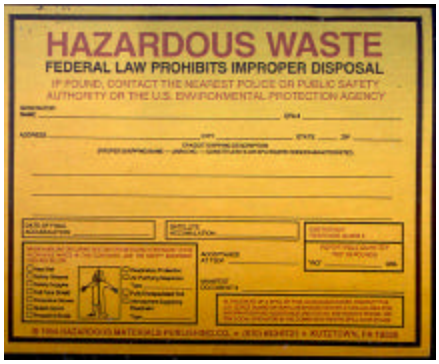
TABLE 2-19: LABELING REQUIREMENTS FOR HAZARDOUS WASTE SHIPMENT

Hazardous waste must be shipped in containers acceptable for transportation and properly labeled according to US DOT regulations. Each container of 110 gallons or less must have the hazardous waste number identifying the waste and the following statement:

"Hazardous Waste - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency."

A container must also have the headings "*Generator Name and Address*" and "*Manifest Document Number*," with that information provided. This label and others are available from commercial firms including mail order companies. Properly labeled containers also include:

- ☐ Labels clearly identifying the type of waste and its hazards in that particular container.
- ☐ The accumulation date.
- ☐ Words or symbols for characteristics such as "flammable" and "corrosive" that are clear and understandable to employees.
- ☐ Protection of the label from solvents and weather. This can be done by covering the label with varnish or clear packing tape and keeping the container under roof cover.



Your hazardous waste hauler should be able to assist you in properly labeling the containers for transport. Contact the Michigan State Police, Motor Carrier Division at 517-336-6580 for additional transportation requirements.

AUDIT QUESTION B33

Is hazardous waste that is being shipped off-site in compliance with the labeling requirements identified in Table 2-19?

☐ **YES**
☐ **NO - Out of Compliance**

SQG Employee Emergency Training

Training is required for all employees who are involved with hazardous waste management, such as personnel at the areas of generation, their supervisors, hi-low drivers who move the hazardous waste, shipping dock employees, emergency coordinators, or anyone else who handles the waste. You can tailor your training specifically to the hazardous waste procedures relevant to your facility and employee involvement.

TABLE 2-20: SQG TRAINING REQUIREMENTS

Routine Hazardous Waste Handling

☐ You must train your employees in how to properly handle hazardous waste that they may generate in their normal job duties, including the chemical and physical characteristics of the hazardous wastes they handle.

Emergency Preparedness

☐ You must train your employees in what to do during an emergency, including:

- How to respond to serious spills or other accidents;
- How to respond to communication and alarm systems;
- How to contact emergency responders (fire, police, and ambulance);
- Where to find emergency equipment;
- Be able to use evacuation plans and routes;
- How to extinguish a fire and when to try to do so;
- How to contain and clean up a spill;
- Who to inform if an emergency occurs; and
- How to follow your shop's emergency plan.

AUDIT QUESTION B34

Is your facility in compliance with the training requirements identified in Table 2-20?

☐ **YES**

☐ **NO - Out of Compliance**

TABLE 2-21: BEST MANAGEMENT PRACTICES FOR SQG EMPLOYEE TRAINING

BEST MANAGEMENT PRACTICES - *Recommended*

TRAINING

In addition to the requirements listed above, a good employee training program should teach your shop's staff how to:

☐ Identify hazardous waste. After being trained, your employees should:
- Know which materials and wastes in your shop are hazardous;
- Be able to tell when a new product or waste might be hazardous;
- Know how to read and use Material Safety Data Sheets (MSDSs); and
- Understand warning labels on hazardous products.

☐ Inspect and handle hazardous wastes. After being trained, your employees should:
- Avoid spills (for example, by using funnels, drip pans, and absorbent materials);
- Use equipment to protect themselves (such as gloves and respirators);
- Keep hazardous wastes separate from one another and from other materials;
- Store materials and wastes correctly (such as labeling waste containers and marking the date when you first put waste into an empty container); and
- Avoid improper disposal of waste (by not dumping hazardous waste on the ground, in drains, or dumpsters; by not burning hazardous waste or letting it evaporate; and by not mixing hazardous waste with non-hazardous waste).

☐ Follow Emergency Response Procedures. After being trained, your employees should:
- Know how to give basic first aid.

☐ Prevent Pollution. After being trained, your employees should:
- Know how to reduce the amount of hazardous waste they generate by carefully managing inventories, substituting less toxic materials where possible, and recovering and recycling waste materials.

You should provide training to all new employees within six months of hiring them. You should provide refresher training every year.

DOCUMENTATION

☐ Keep a record of your hazardous waste training. You should record:
- The dates and times of the training;
- What topics the training covered;
- Who attended the training and their job descriptions; and
- Who provided the training.

Keep these training records at your establishment for three years.

AUDIT QUESTION B35

Have you instituted any of the best management practices for employee training identified in Table 2-21?

☐ **YES**
☐ **NO - Recommended**

SQG Waste Disposal

Ultimately, you (as the generator), are responsible for assuring proper transportation and disposal of your waste after it leaves your business. As such, you will need to prepare the shipment properly and hire reputable firms to handle the waste. It is important for you to select a waste transporter and treatment, storage, and disposal facility that you are comfortable doing business with and who provides you the best services for your particular circumstances at a reasonable price.

TABLE 2-22: SQG HAZARDOUS WASTE DISPOSAL REQUIREMENTS

- ☐ Never attempt to transport your own hazardous waste to another location.
- ☐ Ship your hazardous waste only to a permitted or licensed hazardous waste treatment, storage or disposal facility, or a legitimate recycler.
- ☐ Select a hazardous waste transporter that is registered and permitted with the DEQ.
- ☐ Do not dispose of your hazardous waste in a solid waste landfill, incinerator, or dumpster.
- ☐ Do not dispose of your hazardous waste by flushing it into the septic tank, down the storm drain, into a stream, or on the ground.
- ☐ Do not dispose of your hazardous waste by dumping it into the municipal sewer system unless you have received authorization from your local wastewater treatment plant (see Chapter 3).
- ☐ Do not treat your hazardous waste at your shop by burning it or allowing it to evaporate into the air.
- ☐ Prepare a hazardous waste manifest for all hazardous waste that is shipped off-site. Fill in all parts of the manifest.

AUDIT QUESTION B36

Are you complying with the SQG hazardous waste disposal requirements identified in Table 2-22?

☐ **YES**
☐ **NO - Out of Compliance**

SQG Manifests

The multi-copy manifest forms are designed to track hazardous and liquid industrial waste shipments from their point of generation to their final destination. **SQGs are required to manifest all hazardous wastes and liquid industrial wastes EXCEPT in the situations identified below.**

When are Manifests Not Required?
For the majority of generators, manifesting will be required. However, manifests may not be required if:

1. The waste is being transported off-site and reclaimed under a contractual agreement and if certain procedures are followed. However, if it is a liquid then it must be manifested as a liquid industrial waste.
   - ✓ The contract must specify the type of waste and the frequency of shipments.
   - ✓ The vehicle used to transport the waste to the recycling facility and deliver the regenerated material back to the generator is owned and operated by the reclaimer.
   - ✓ The generator maintains a copy of the reclamation agreement for at least three years after the contract expires.

2. You haul your own liquid industrial waste in amounts of 55 gallons or less to a designated facility and the following conditions are met:
   - ✓ A record of the source and quantity of waste and where the waste is being transported to accompanies the waste shipment.
   - ✓ The generator obtains a signature from the designated facility acknowledging receipt of the waste and provides a copy of the record to that facility.
   - ✓ The generator keeps a copy of the shipment records for at least three years.
   - ✓ The designated facility is managed according to the liquid industrial waste regulations.

3. A generator is having liquid industrial waste picked up on a transporter consolidated manifest. If the transporter picks up waste on a consolidated manifest they must provide a receipt showing:
   - ✓ The transporter's company
   - ✓ Driver's signature
   - ✓ Date of pickup
   - ✓ Type and quantity of waste removed
   - ✓ Consolidated manifest number
   - ✓ Name of a designated facility

You may want to discuss these manifest exemptions with your WHMD district office (see Appendix C for phone numbers).

AUDIT QUESTION B37
Are you required to manifest your hazardous waste or liquid industrial waste?

☐ **YES**
☐ **NO – skip to Section 2.3.3** (page 2-38)

TABLE 2-23: SQG MANIFEST REQUIREMENTS

- ☐ List all the applicable hazardous waste numbers for each hazardous and liquid industrial waste you ship with the manifests. The liquid industrial waste descriptions and numbers are included in the manifest instructions.
- ☐ The generator of the waste, the transporter, and the TSDF that receives the waste must each sign and keep a copy of the manifest as they handle the waste (review the diagram on the next page).
- ☐ Submit the appropriate manifest copy to the WHMD according to the diagram on the following page.
- ☐ Keep the copy signed by the hauler and TSDF on file for at least three years.

AUDIT QUESTION B38

Are you complying with the SQG manifest requirements identified in Table 2-23?

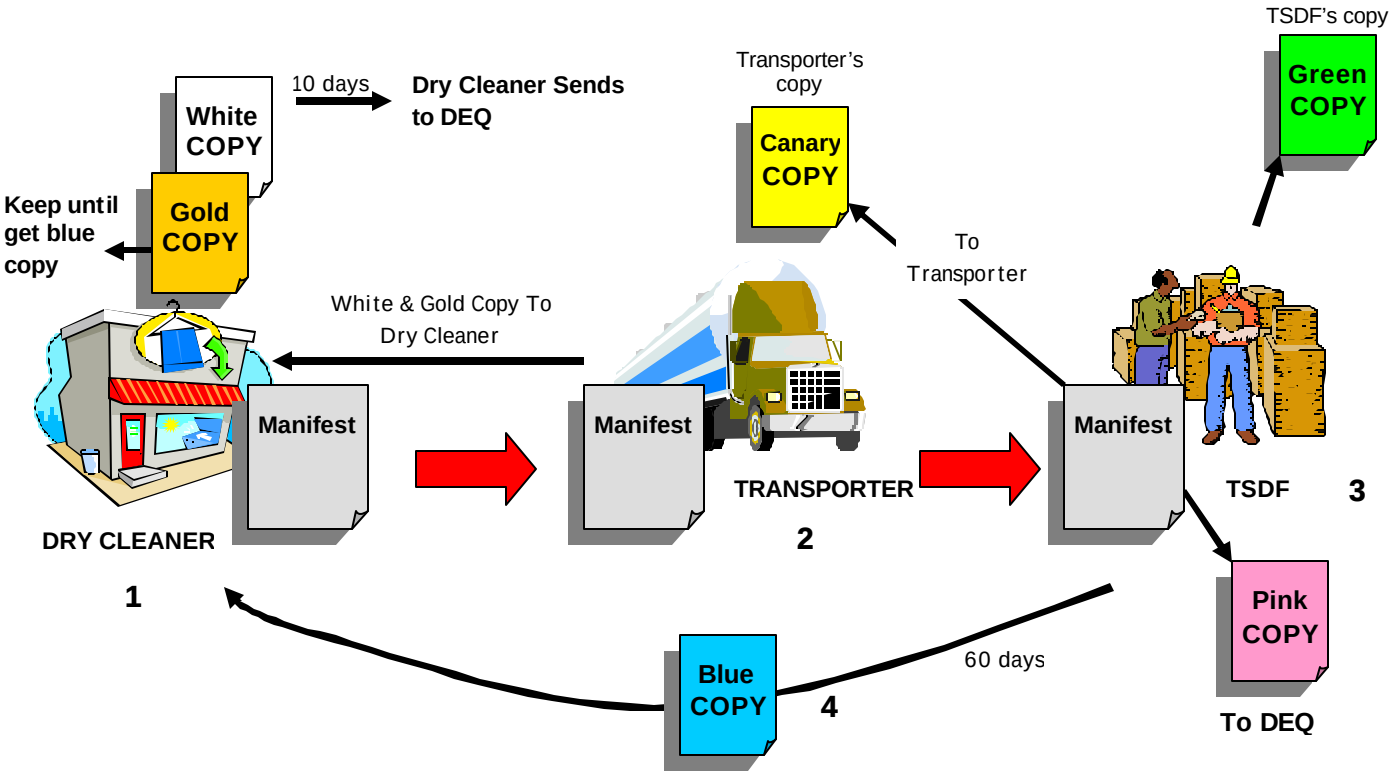
☐ **YES**
☐ **NO - Out of Compliance**

Where Can I Get Manifests?

Usually your waste transporter will provide you with the proper manifest; however, you can also obtain blank copies of Michigan manifests by contacting the WHMD, Manifest Unit. Ordering information is at **www.michigan.gov/deq** (select "Waste," "Hazardous Waste," "Hazardous Waste Management," then look under the "Forms" heading). Currently, there is a charge for the manifests. The WHMD requires that Michigan manifests be used in place of US EPA manifests or another state's forms for shipments to any Michigan disposal facility. Both liquid industrial waste and hazardous waste shipments are listed on the DEQ "Uniform Hazardous Waste Manifest" (EQP 5110). If you are shipping your hazardous waste out of state, check with the respective state as to which manifest you should use.

NOTE: A national manifest system is being developed by EPA and US DOT. Information and instructions will be posted on the DEQ waste website when it is finalized. It is anticipated to go into effect in 2004. Continue to use the Michigan Manifests as described in this section until the new national manifest system is implemented in Michigan.

MANIFEST PROCEDURE FOR SHIPMENTS WITHIN MICHIGAN



1. Complete the manifest forms using the instructions provided.
2. Your transporter will sign the manifest forms and provide you with two copies. You must submit the white copy to the WHMD within 10 days after the end of the month in which you shipped the waste. The gold copy should be kept in your records until you receive a copy of the manifest from your treatment, storage, or disposal facility (TSDF) in Step 4.
3. The disposal facility will sign the manifest forms and provide the transporter with a copy.
4. The disposal facility will send you a copy of the manifest form with the Transporter and disposal facility signature within 60 days. When you receive the blue copy you can dispose of the gold copy you received from the transporter in Step 2. The TSDF will also send a copy of the manifest to the DEQ.

NOTE: If the waste was shipped out of state you will need to:

d. Meet the receiving state's requirements

e. Submit a copy of the manifest to the WHMD as in Step 2 above.

f. Send a copy of the manifest you receive from the TSDF to the WHMD. Submit it no later than 10 days after the end of the month from receiving the TSDF signed manifest (you may need to make photo copies of the signed manifest forms to ensure that you have enough copies to send).

What Should I Do if I Don't Receive My Copy of the Manifest from My Disposal Facility?
If you are a Small Quantity Generator, make sure that you received a manifest copy from the TSDF within 60 days after you shipped the hazardous waste. If you have not received it, send a copy of the manifest along with an explanation to the WHMD and EPA Region 5 stating you have not received confirmation of the delivery from the TSDF.

Exception reports to the US EPA should be mailed to:	Exception reports to the WHMD should be mailed to:
US EPA REGION 5 SHARON KIDDON (DR-7J) 77 WEST JACKSON BLVD CHICAGO IL 60604	MDEQ WASTE & HAZARDOUS MATERIALS DIV. DIVISION CHIEF PO BOX 30241 LANSING MI 48909-7741

2.3.3 Selecting a Transporter and Treatment, Storage, or Disposal Facility

Transporters can assist you by reviewing the manifest for correct and complete information, providing information on disposal facility options and costs, and providing for the safe and timely transport of your wastes. Transporters may be independent companies or may be affiliated with a treatment, storage, or disposal facility (TSDF). A listing of permitted and licensed transporters and TSDFs is available via the DEQ's web site **www.michigan.gov/deq**, (select "Waste" then "Hazardous & Liquid Industrial Waste Transportation"). There are requirements for transporters transporting either hazardous waste or liquid industrial waste. A transporter needs to be permitted and registered under both uniform transporter programs to transport either of these wastes.

You will want to select a TSDF that will be able to handle, treat, and dispose of the waste you generate. A TSDF will accept only those types of wastes allowed by its permit or license. Special fees may be charged for small quantities of hazardous waste requiring extra handling by the facility. In addition, some facilities have their own requirements as to how they will accept waste material. For example, some companies will not accept hazardous waste in drums even though this is a common storage and transportation method.

Because transporter and TSDF services, costs, and qualifications are highly varied, you should contact and interview several facilities to obtain price estimates before making a selection. You might also want to tour the TSDF yourself to see its operations. Remember, that as the generator you are ultimately responsible for how your waste is transported and disposed, so it is wise to choose a company on more than price. Use the list of questions below as a starting point for your interviews and compare the companies' responses before making your selection.

Questions to Ask Prospective Transporters and TSDFs

1. Is the waste transporter permitted and registered in Michigan?

2. Does the hazardous waste TSDF have an operating license? Does the destination facility operate according to the liquid industrial waste regulations?

3. What type and amount of insurance does the transporter or TSDF carry? Because you are ultimately responsible for the waste you generate, you should make sure that the company has insurance to cover accidents and environmental spills. To protect yourself financially, ask to see proof of the insurance.

4. If you are hiring an independent hauler, find out what TSDF the transporter uses for your type of waste. If the waste is going to a treatment facility before disposal, where is the ultimate place of disposal for the treated wastes?

5. Does the transporter or the facility offer special services for small volumes of waste? Some haulers might not service SQGs or CESQGs.

6. What must you do before your waste will be picked up by the transporter or accepted at the TSDF?

7. Does the transporter or TSDF serve other businesses similar to yours? If they do, obtain telephone numbers of these business references and contact them to evaluate the services received.

8. Does the transporter deliver waste to the TSDF on the same day that it was picked up? If not, also ask questions about the company/location where the waste will be stored. Hazardous waste must reach its final destination within ten days.

9. What steps has the transporter or TSDF operator taken to avoid spills or leaks, and minimize the facility's own legal liability? You may want to note for your records the method of temporary waste storage used at a treatment or recycling facility. If your waste is going to a hazardous waste landfill, then also ask about their leachate control and groundwater monitoring provisions. Use this information when comparing companies. A company that costs more to take your waste but practices an extensive environmental protection program, may actually be cheaper in the long run than a company that initially costs less but does not practice adequate environmental protection. If contamination occurs, you can be held financially responsible for cleanup costs of the site.

10. Have any violations of state regulations occurred? Call the appropriate WHMD district office (Appendix C) to find out whether any transporter or TSDF you are considering has been subject to fines or citations for violations of state regulations. Most transporter and treatment, storage, and disposal facility files are available for public review. Transporter files and TSDF inspection files are kept at the WHMD district office responsible for the area where the hauling business is located. Contact the district office to confirm the appropriate office and set up an appointment. Call the WHMD Lansing office (Appendix C) for information regarding out-of-state haulers, for TSDF licensing information, and to set up an appointment to review TSDF licensing files.

11. Will they enter into a written contract with you? It is a good idea to have a written contract for liability protection clearly identifying what specific services that company will provide. Be cautious of firms who do not want to offer a written contract for services.

2.4 Where To Go For Help

SUBJECT	**Confidential and free waste reduction assessments**
CONTACT	DEQ, Environmental Science and Services Division, RETAP Coordinator
TELEPHONE	(800) 662-9278
SUBJECT	**Hazardous waste and liquid industrial waste permitted and registered transporters**
CONTACT	DEQ, Waste and Hazardous Materials Division, Transportation Program
TELEPHONE	(734) 432-1256
WEB SITE	www.michigan.gov/deq (select "Waste" then "Hazardous & Liquid Industrial Waste Transportation")
SUBJECT	**Hazardous waste licensed treatment, storage, and disposal facilities**
CONTACT	DEQ, Waste and Hazardous Materials Division, Hazardous Waste Program
TELEPHONE	(517) 373-9875
WEB SITE	www.michigan.gov/deq (select "Waste," "Hazardous Waste," then "Hazardous Waste Management")
SUBJECT	**Household hazardous waste collection programs**
CONTACT	DEQ, Environmental Science and Services Division
WEB SITE	www.michigan.gov/deq (select "Pollution Prevention" then "Recycling")
SUBJECT	**Ordering Hazardous Waste Manifests**
CONTACT	DEQ, Waste and Hazardous Materials Division, Manifest Unit
TELEPHONE	(517) 373-7314
WEBSITE	www.michigan.gov/deq (select "Waste," "Hazardous Waste," then "Hazardous Waste Management")
PUBLICATIONS	1. Uniform Hazardous Waste Manifest (EQP 5110)
SUBJECT	**Liquid, solid, and hazardous waste regulation questions and publications**
CONTACT	DEQ, Environmental Science and Services Division, Environmental Assistance Center
TELEPHONE	(800) 662-9278
WEB SITE	www.michigan.gov/deq (select "Assistance & Support Services")
PUBLICATIONS	1. Directory of Environmental Testing Laboratories 2. Emergency Information Poster 3. Guide to Understanding Secondary Containment Requirements in Michigan 4. Manifest Tracking Log 5. Recycled Materials Market Directory 6. Required Weekly Hazardous Waste Maintenance Checklist

SUBJECT	**Solid waste planning agency contacts**
CONTACT	DEQ, Waste and Hazardous Materials Division, Solid Waste Program
TELEPHONE	(517) 335-4035
WEB SITE	www.michigan.gov/deq (select "Waste," "Solid Waste," then "Solid Waste Planning"
SUBJECT	**Hazardous waste identification number**
CONTACT	DEQ, Waste and Hazardous Materials Division
TELEPHONE	(517) 335-5035
WEB SITE	www.michigan.gov/deq (select "Waste," "Hazardous Waste," then "Hazardous Waste Management")
PUBLICATIONS	1. Site Identification Form (EQP 5150)
SUBJECT	**Hazardous materials transportation compliance assistance publications**
CONTACT	Michigan State Police, Motor Carrier Division
TELEPHONE	(517) 336-6580
WEB SITE	www.michigan.gov/msp (select "Services to Governmental Agencies," "Motor Carrier Division," then "Hazardous Materials")
SUBJECT	**Hazardous material transportation**
CONTACT	U.S. Department of Transportation
TELEPHONE	(800) 467-4922 or (517) 377-1866
WEBSITE	hazmat.dot.gov
SUBJECT	**Federal waste compliance assistance publications**
CONTACT	U.S. Environmental Protection Agency
WEB SITE	www.epa.gov/epaoswer/osw/index.htm (select "Publications")
PUBLICATIONS	1. RCRA Orientation Manual 2. RCRA, Superfund, and EPCRA Hotline Training Modules
SUBJECT	**Materials Safety Data Sheets**
WEB SITE	www.hazard.com
SUBJECT	**Waste recycling and disposal options**
CONTACT	DEQ, ESSD Recycling Coordinator
TELEPHONE	(800) 662-9278
WEB SITE	www.michigan.gov/deq (select "Pollution Prevention" then "Recycling")
PUBLICATIONS	1. Material Exchange: Reduce Disposal Costs, Increase Your Profits 2. Recycled Materials Market Directory

DEQ, Waste & Hazardous Materials Division

Hazardous Waste Management Forms

These forms are also available on the Internet at **www.michigan.gov/deq** (select "Waste," "Hazardous Waste," then "Hazardous Waste Management")

- Manifest Tracking Log
- Hazardous Waste Maintenance Checklist

HAZARDOUS AND LIQUID INDUSTRIAL WASTE MANIFEST TRACKING LOG [3, 4]								
State Manifest Number	Date shipped off-Site	LDR [1] submitted	Date copy received from TSDF	Date copy sent to MDEQ [2]	Out of State Shipments[2]		Waste Type	Quantity and unit of measure (e.g. pounds, tons, gallons, cubic yd, etc.)
					Date copy sent to receiving state	Ensure copy signed by TSDF sent to MDEQ		

1. Indicate if a LDR (land disposal restriction, also called land ban notice) was sent to the TSDF with original shipment. A new LDR is required when waste changes.
2. Copies of all manifested waste shipments must be sent to MDEQ, Waste and Hazardous Materials Division, PO Box 30038, Lansing MI 48909-7538. For waste shipments out of state, also meet the receiving state's manifest submittal requirements and ensure copy signed by TSDF was submitted to MDEQ.
3. See regulations and Chapter 2 of the MDEQ Michigan Manufacturers' Guide to Environmental Safety, and Health Regulations for more information.
4. MDEQ does not require this log to be used to record submittal and receipt of hazardous and liquid industrial waste manifests. Revised 2/03.

REQUIRED WEEKLY HAZARDOUS WASTE MAINTENANCE CHECKLIST

MONTH: YEAR:																				
WEEK #	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Labeled																				
Dated																				
Containers Closed																				
Spills																				
Containment																				
Corrective Measures																				
Date																				
Initials																				

Labeled: Check that all drums and all other containers are properly labeled ("Hazardous Waste" and waste number).

Dated: Check to see if the container is dated with the date accumulation began and the date on the container has not exceeded 90 or 180 days, which ever is applicable. If container date has exceeded 90 or 180 days, contact management.

Containers Closed: Make sure that containers are closed (i.e. both bungs are in drums, drum ring top is secure, funnel tops closed, funnel valve closed, or tarp over roll-off box).

Spills: Check that all containers are not leaking, bulged, or in poor condition. Are spills present?

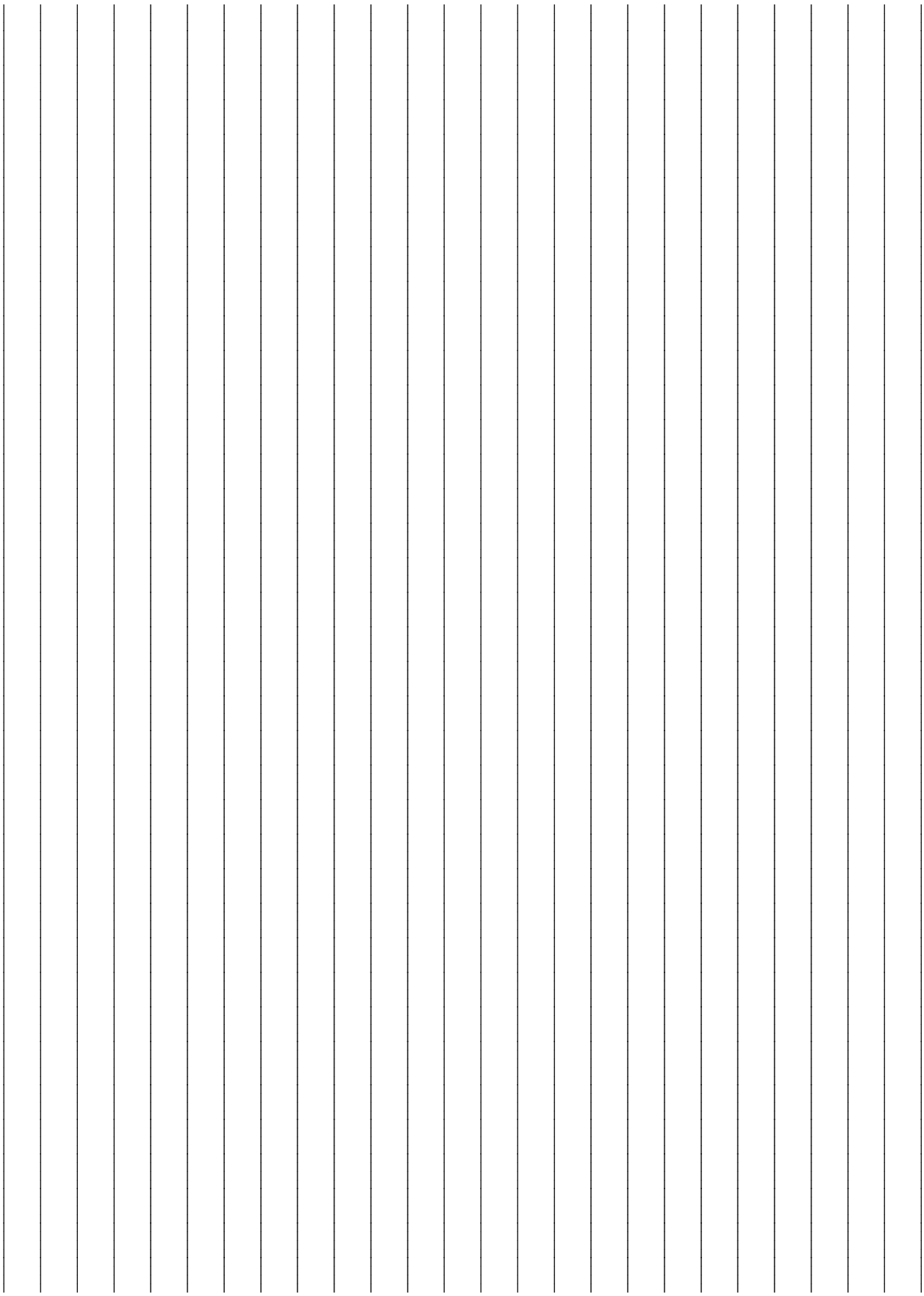
Containment: Make sure that there hasn't been any degradation to the secondary containment, (i.e., any cracks, is coating sufficient?) (Is there enough set back distance of containers for squirt protection? Are all containers in the con tainment area?)

Corrective Measures: Are corrective measures needed?

Date & Initials: Inspector dates and initials.

On the back write comments on any areas above that were not in compliance (include the date). Also, record any measures being taken to correct the problems (include the date).

(rev. on 5/14/97 by-clz::\doc\y\required weekly hazardous waste maintenance checklist: EAB))



Chapter 3

Wastewater Management Regulations

Compliance Audit Questions C1 through C9

CHAPTER 3: Wastewater Management Regulations

You are responsible for managing any waste, including wastewater, generated from your business. Discharge of improperly treated wastewater can result in both soil and water contamination and potentially cost your business a great deal in cleanup costs and fines. The sections below will help you determine what kind of wastewater you generate and how to dispose of it properly.

3.1 Do You Discharge Wastewater?

Drycleaners discharge sanitary and/or nonsanitary wastewater.

- **Sanitary wastewater** is the wastewater from your restrooms, breakrooms, and sinks. Sanitary wastewater does not include wastes from dry cleaning machines or pouring waste fluids down the drain.
- **Nonsanitary wastewater** is the wastewater that results from your business activities that might contain one or more pollutants. It includes any wastewater from your drycleaning process (e.g., wastewater resulting from machine wash down, separator water, filter cleaning and cooling water from your solvent condenser(s), compressor(s), or still(s)). This also includes any wastewater that is discharged through floor drains. Nonsanitary wastewater is also referred to as industrial or commercial wastewater.

AUDIT QUESTION C1

What type of wastewater does your business generate?

- ☐ **Sanitary**
- ☐ **Nonsanitary**
- ☐ **Both**

3.2 Where Does Your Wastewater Go?

Wastewater may be disposed of in the following ways:

- Municipal sewer system
- Septic system
- Holding tanks
- Surface water (includes direct discharge to a river, stream, or ditch)

Determine how your wastewater is disposed and then identify your requirements in Section 3.3.

IN THIS CHAPTER ...

AUDIT QUESTION C2

How do you dispose of wastewater generated at your establishment?

- ☐ **Municipal Sewer System** – Go to Section 3.3.1 (below)
- ☐ **On-Site Septic System** – Go to Section 3.3.2 (page 3-4)
- ☐ **Holding Tank** – Go to Section 3.3.3 (page 3-5)
- ☐ **Surface water (ditch, river, lake, stream)** – Go to Section 3.3.4 (page 3-6)

3.3 Disposal Requirements

The sections below describe the requirements associated with the four disposal options discussed in 3.2.

3.3.1 Municipal Sewer System

There are two types of sewer systems, generally referred to as "combined" and "separate" (see Figures 3-1 and 3-2 below).

A **combined sewer system** is designed to carry both the storm water and sanitary wastewater to a publicly owned treatment works (POTW) for treatment.

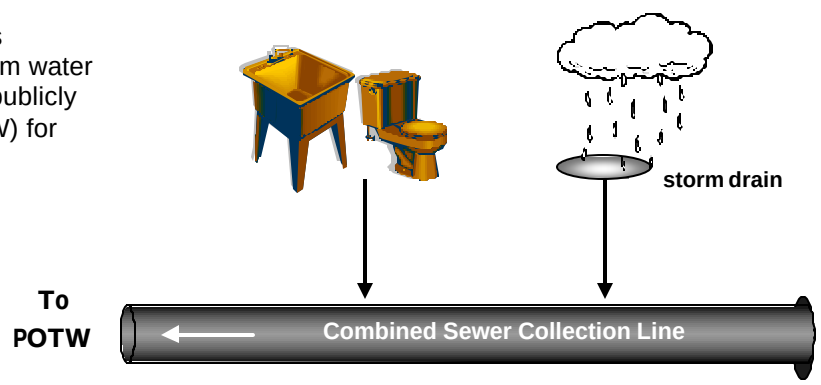


Figure 3-1: Combined Sewer System

A **separate storm sewer system** takes storm water directly to nearby surface waters.

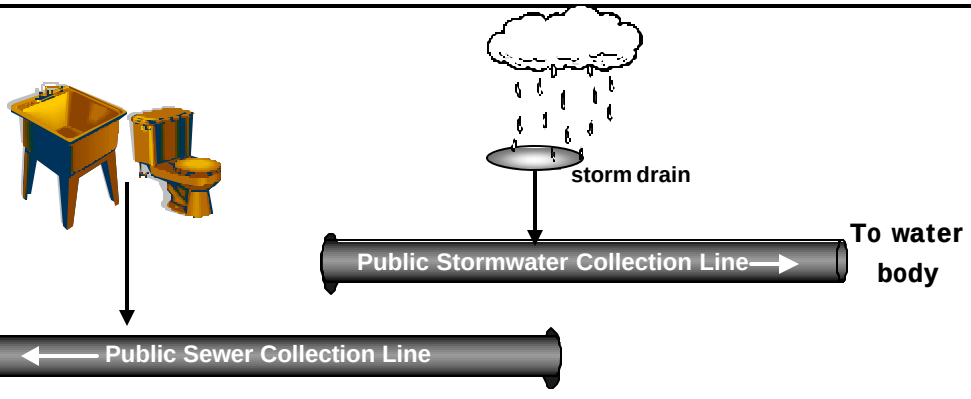


Figure 3-2: Separated Sewer System

TABLE 3-1: SEWER SYSTEM DISCHARGE REQUIREMENTS

- ☐ Determine if you are connected to a "combined" or "separated" sewer system. For information on the sewer system type that services your area, call the local sewer authority or public works department.

- ☐ Obtain authorization from your publicly owned treatment works (POTW) to discharge waste into the sewer system. Generally, you will be required to fill out an application detailing what wastes you are requesting permission to discharge. Your sewer authority will review the application and notify you if you can or cannot discharge the waste to their treatment facility.

You must have an authorization from your local POTW before discharging any of your wastewater to the sewer system.

- ☐ Review with your POTW any requirements for discharge such as monitoring, recordkeeping, sampling, and whether industrial pretreatment regulations apply.

- ☐ Comply with any pretreatment standards or other requirements established by your POTW before discharging wastewater to the sewer system.

- ☐ Do not pour separator water into the sink or toilet unless you have obtained authorization from your POTW to do so.

- ☐ Notify your POTW before discharging any NEW wastes to the system.

- ☐ Do not discharge any wastewater to the storm drains. **Be sure that floor drains are <u>not</u> connected to the storm sewer**.

- ☐ All floor drains should discharge to your POTW or a holding tank (see 3.1.3). Most POTWs will accept waste and wastewater from floor drains, such as building wash down water, small quantities of oily substances, etc., at specific rates and times as long as you have permission from them to do so.

- ☐ Any floor drains that do NOT discharge to your POTW or a holding tank must be plugged (e.g., with concrete) or rerouted. Do NOT discharge your wastewater to storm drains.

AUDIT QUESTION C3

Are you complying with the sewer system discharge requirements identified in Table 3-1?

☐ **YES - Skip to Section 3.4**

☐ **NO – Out of Compliance**
(Skip to Section 3.4)

3.3.2 Septic System

When a municipal sewer system is not available, most facilities dispose of their sink and bathroom generated domestic (sanitary) wastewater to an on-site sewage disposal system. Sewage disposal systems consist of a septic tank and a tile field and are designed to capture solids, provide some biological decomposition, and discharge the remaining wastewater to the ground and groundwater through the tile field.

Since the discharge of the treated wastewater is to the ground and groundwater, septic systems are to be used solely for disposal of domestic septage (sanitary wastewater). **Do not discharge your hazardous or liquid industrial waste into septic systems.** Septic tanks should be pumped out by a DEQ licensed septic waste hauler every two to three years, or when needed. A directory of licensed septic haulers is available at the DEQ's web site at **www.michigan.gov/deq** (click on "Water," "Surface Water," then "Septage").

If you have a septic system you may only use it to discharge sanitary waste. Nonsanitary wastes need to be collected in a holding tank and then hauled away to a disposal facility.

TABLE 3-2: SEPTIC SYSTEM DISCHARGE REQUIREMENTS

- ☐ Only discharge sanitary wastes to your septic system. Sanitary waste includes bathroom and breakroom wastewater.
- ☐ Do not dispose of nonsanitary wastewater (e.g. wastewater from your dry cleaning operations) in toilets, sinks, or floor drains.
- ☐ Nonsanitary wastewater should be collected in a holding tank then transported to an appropriate disposal facility (see 3.2.3)
- ☐ **Floor drains should not be connected to your septic system**. If you have floor drains they should be plugged (e.g, with concrete) or rerouted to a holding tank.

AUDIT QUESTION C4

Are you complying with the septic system discharge requirements identified in Table 3-2?

☐ **YES - Skip to Section 3.4**

☐ **NO – Out of Compliance** (Skip to Section 3.4)

3.3.3 Holding Tanks

Wastewater, excluding septage waste, may be collected in a holding tank and then transported to a recycling or disposal facility. You may haul your own liquid waste without being licensed by the Waste and Hazardous Materials Division (WHMD) if conditions in Chapter 2.2 are met, or you may hire a permitted and registered hazardous or liquid waste transporter. Industrial wastewater hauled by a permitted and registered transporter must have manifests accompanying the shipment (see page 2-21). Manifests are not required for septage waste hauled by licensed septage waste transporters. Licensed septage waste haulers cannot transport liquid industrial or hazardous waste.

TABLE 3-3: HOLDING TANK DISCHARGE REQUIREMENTS

- ☐ Wastewater contained in a holding tank must adhere to the liquid industrial waste requirements while being stored on-site. Chapter 2.2 provides the liquid industrial waste requirements.
- ☐ The wastewater must be pumped out and hauled away by a permitted and licensed hazardous or liquid waste transporter. You can find a list of these transporters at: **www.michigan.gov/deq** (click on "Waste," then "Hazardous and Liquid Industrial Waste Transportation").
- ☐ You must manifest any shipment of hazardous and liquid industrial waste (see page 2-21).

AUDIT QUESTION C5

Are you complying with the holding tank discharge requirements identified in Table 3-3?

☐ **YES - Skip to Section 3.4**

☐ **NO – Out of Compliance**
(Skip to Section 3.4)

3.3.4 Surface Water Discharge

The DEQ and the U.S. Environmental Protection Agency (US EPA) regulate direct discharges to surface water. You are "directly discharging" to the surface water if your wastewater goes to any lake, stream, river, county drain, roadside ditch, or local storm sewer that goes to a lake, stream, etc.

Dry cleaners in Michigan should not dispose of wastewater in this manner. However, if your establishment wishes to do so, you must obtain a wastewater discharge permit (also called a National Pollutant Discharge Elimination System or NPDES permit).

Contact your DEQ Water Division district office for information about applying for a NPDES permit.

TABLE 3-4: SURFACE WATER DISCHARGE REQUIREMENTS

☐ You must obtain an NPDES Permit before discharging any wastewater to surface waters.
☐ Be sure that your floor drains are not connected to a storm sewer that empties to a ditch, river, stream, or other body of water. Plug any floor drain (e.g., with concrete) that does not discharge to a publicly owned treatment works (POTW) or a holding tank.

AUDIT QUESTION C6

Are you complying with the surface water discharge requirements identified in Table 3-4?

☐ **YES**

☐ **NO – Out of Compliance**

3.4 Best Management Practices for Wastewater Discharge

BEST MANAGEMENT PRACTICES - *Not Required but Recommended*

Pollution Prevention

- ☐ Keep your establishment clean. Prevent spills and leaks that may add contaminants to floor rinse waters.
- ☐ Minimize your establishment's water usage. If you use less water, there will be less wastewater to manage.

Training

- ☐ Train staff on good housekeeping skills. At the end of the day, spend 15 minutes to clean up materials.

Running a Dry Shop

A dry shop is one that uses no water, or very little water, to clean floors

How to Run a Dry Shop

- ☐ Do not wash the floors or use wet mops to clean up spills.
- ☐ Clean up small spills with rags. Do not saturate rags.
- ☐ If the spills are solvents, use appropriate absorbents to clean the spill and dispose of the absorbents as hazardous waste.

AUDIT QUESTION C7

Have you instituted any of the best management practices for wastewater discharge identified in 3.4?

- ☐ **YES**
- ☐ **NO – Recommended**

3.5 Spills

Do not wash, sweep, or in any way direct a spill outside to the ground or down a drain. Contain and collect the spilled material and dispose of it properly. See Chapter 5 for more information regarding spill reporting requirements and cleanups.

3.6 Annual Wastewater Reporting

A completed Annual Wastewater Report (AWR) must be submitted to the DEQ by every business doing business within the state who either discharges wastewater to a sewer system or to waters of the state. Wastewater reports are due every year on August 1st.

"Wastewater" means all liquid waste discharged resulting from industrial or commercial processes, including contact cooling and condensing waters, **but excludes** noncontact cooling water, sanitary sewage, and storm water run off that does not come in contact with process materials, products, or byproducts.

AUDIT QUESTION C8

Do you discharge any "wastewater" from your dry cleaning process to a sewer system or waters of the state? (see definition of wastewater above)

☐ **YES**
☐ **NO - Go to Chapter 4**

Do I Submit the Abbreviated or Full Wastewater Report?

Companies that discharge wastewater (as defined above) to the sewer system or waters of the state must submit either an *Abbreviated Wastewater Report* or a *Full Wastewater Report*. Which report you submit depends on whether or not you **use** or **discharge** perchloroethylene (also know as perc or Tetrachloroethylene).

Complete the FULL wastewater report if you:

- Use over 7.4 gallons of perc in a year, **OR**
- Discharge **any** perc to the sewer system or waters of the state.

If the wastewater from your dry cleaning process is collected and hauled away, you do not have to submit an Annual Wastewater Report.

Complete the ABBREVIATED wastewater report if you:

- Do not use perc or use less than 7.4 gallons of perc in a year, **AND**
- Do not discharge any **perc** to the sewer system or waters of the state.

The wastewater report is submitted on forms provided by the DEQ. For more information about the Annual Wastewater report, including the wastewater report forms and instructions, go to **www.michigan.gov/deq** (click on "Assistance & Support Services," then "Environmental Reporting") or contact the Environmental Assistance Center at 800-662-9278.

AUDIT QUESTION C9

Have you been submitting either an Abbreviated or Full Annual Wastewater Report to the DEQ?

☐ **YES**
☐ **NO – Out of Compliance**

3.7 Where To Go For Help

SUBJECT	**NPDES wastewater discharge permitting**
CONTACT	DEQ, Water Division District Office
TELEPHONE	See Appendix C for the District Office telephone numbers
WEB SITE	www.michigan.gov/deq
SUBJECT	**Wastewater discharges to the groundwater, including septic tank/tilefield systems with more than 10,000 gallons per day discharge**
CONTACT	DEQ, Water Division, Groundwater Section
TELEPHONE	(517) 373-8148
WEB SITE	www.michigan.gov/deq
PUBLICATIONS	1. Preventing Groundwater Contamination 2. Part 22 Groundwater Discharge Authorization Application
SUBJECT	**Lists of permitted and registered hazardous waste and liquid industrial waste transporters**
CONTACT	DEQ, Waste and Hazardous Materials Division
TELEPHONE	(734) 432-1256
WEB SITE	www.michigan.gov/deq
SUBJECT	**Questions concerning septic tank/field systems with less than 10,000 gallons per day discharge that cannot be answered by your local health department**
CONTACT	DEQ, Water Division, Environmental Health Section
TELEPHONE	(517) 241-1313
WEB SITE	www.michigan.gov/deq
PUBLICATONS	1. Michigan Criteria for Subsurface Sewage Disposal – April 1994

Chapter 4

Material Storage Regulations

Compliance Audit Questions D1 through D16

CHAPTER 4: Material Storage Regulations

There are various regulations that address the storage of hazardous materials to protect the environment, employees, and public. This chapter provides a summary of environmental regulations that may apply to the storage of materials usually found at dry cleaning facilities.

4.1 Secondary Containment

Secondary containment is a structural means to control the impact of released materials to groundwater, surface water, and human exposure. Not all drycleaners will have materials that are required by state and federal regulations to be stored in areas with secondary containment, although the practice is highly recommended for all materials that may pose a risk to human health and the environment if released. Some local ordinances and insurance companies may also require containment or other storage requirements. It is usually cheaper to install and utilize containment structures than to clean up releases that contaminate groundwater, surface water, and soils.

Because dry cleaners may have different chemicals, each dry cleaning facility will need to determine if the materials on-site have containment requirements under the various regulations and permits. Materials may be subject to more than one regulation. Following are common situations where containment may be required.

1. You are a Small Quantity Generator (SQG). See Table 2-16 (page 2-28) for containment requirements.
2. You are subject to Pollution Incident Prevention Planning (PIPP) as described in Chapter 5.1.2. Containment, inspections, and precipitation management is required for any outdoor storage area of polluting materials. Containment must be able to hold whichever is larger: not less than 10% of the total volume of containers within the outdoor storage area, or 100% of the largest container within the storage area. Indoor storage and use areas must be designed and operated to prevent any releases from getting into the sewer, and surface water and groundwater.
3. Your facility is subject to federal Spill Prevention Control and Countermeasure (SPCC) planning requirements (see Chapter 5.3). You must meet containment, inspection, and other storage requirements for oils including petroleum solvents (naphtha, mineral spirits, and Stoddard Solvent).
4. Materials are stored in underground or aboveground storage tanks (see Sections 4.2 or 4.3 for any containment requirements).
5. You have flammable and combustible liquids in portable containers and aerosol cans. You must meet MIOSHA requirements for storage rooms and storage cabinets.

IN THIS CHAPTER …

6. You have a permit that requires containment.
7. Your local fire department or insurance company requires containment.

AUDIT QUESTION D1

Do you store any materials that require secondary containment (see above)? *(If you are unsure about what materials require secondary containment contact the Environmental Assistance Center 800-662-9278)*

☐ **YES**

☐ **NO – Go to Section 4.2**

Many environmental regulations do not specify how the containment structures must be built; only that they are capable of keeping releases from reaching surface water, groundwater, and public sewer systems. The containment must also be compatible with the material stored within them, and be impervious. For example, poured concrete floorings are usually given an epoxy or other sealant coating. Cinder or concrete block walls are not impervious. It is also important to incorporate squirt protection so if a container ruptures, or is punctured, the contents cannot squirt out beyond the containment structure. If you feel there is a conflict between the regulations, discuss those with the regulating agencies.

Containment does not have to be expensive to be effective. Examples of secondary containment include:

- Metal drip pans under equipment
- Enclosed cabinets with sealed flooring
- Portable containment units or spill pallets (Note: spill pallets without sides do not meet the hazardous waste containment requirements for liquids because they do not provide squirt protection.)
- Smaller containers placed in another larger container (e.g., a 5-gallon jug put in a plastic storage box or a cut down 55-gallon drum)
- Plastic children's swimming pool
- Curbing, retaining walls, and floors designed with a slight slope to pool released liquids

Prefabricated or fabricated containment units may be purchased or containment structures can be built to your specifications by suppliers or facility employees.

Consider the following when selecting or designing a structure:

☐ **Structural strength** so the containment is capable of supporting the weight of the loads placed on it, including the materials and equipment that will enter the area.

☐ **Impermeability** so the containment is resistant to penetration of the materials contained in the structure. For example, an area storing acids or corrosives should not be a concrete area, unless the concrete has been sealed with a coating that makes it resistant to the chemicals.

☐ **Compatibility** of the construction materials with the substances contained in the structure and the structure's design should provide separation areas for incompatible substances.

- ☐ **Integrity** so there are no drains, other piping, or openings of any kind where liquids may escape. For example, seal all joints and cracks and do not include floor drains in the area or use cinder blocks in the construction.
- ☐ **Security** to prevent vandalism and the entry of unauthorized persons to the area. The containment must allow emergency personnel and equipment to enter. Sumps included in the design should be manually controlled.

Figure 4-1: Secondary Containment

- ☐ **Protection** from extreme temperatures including ignition sources.
- ☐ **Squirt distance** control to contain any liquids spurting from the containers if a leak occurred.

Some other things to consider when designing your secondary containment area include:

- ☐ Avoid creating confined spaces
- ☐ Provide adequate lighting and ventilation
- ☐ Ensure required isolation distances from property lines, public ways, buildings, etc.
- ☐ Specify how employees will move materials in and out of the area
- ☐ Remove precipitation and spilled materials

Releases, and subsequent removal of material from containment areas, can usually be prevented by using common sense and care when storing and transferring materials. Tips include:

- ✓ Train all personnel handling the materials about spill prevention and response techniques. Some regulations indicate who, at a minimum, must be trained.
- ✓ Practice safe loading and unloading procedures.
- ✓ Keep container lids and covers closed to control spills and evaporation. Many regulations require this.
- ✓ Post appropriate warning and instructional signs in usage and storage areas.
- ✓ Adequately label all containers.
- ✓ Use pumps or funnels to transfer liquids.
- ✓ Use seal-less pumps.
- ✓ Install splash guards and drip boards on tanks and faucets.
- ✓ Use drip buckets under liquid spigots.
- ✓ Have sorbent materials (e.g., kitty litter, pigs, pads), and devices or covers that block drains, readily available where they may be used if there is a release.
- ✓ Prohibit transferring or draining of fluids outside over the ground or on pavement not designed for containment.

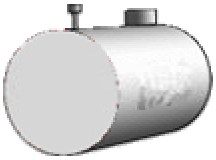
Any collected liquids and materials from secondary containment structures must be characterized to determine if they are a regulated hazardous or liquid industrial waste (see Chapter 2).

- ✓ Conduct regular inspections to identify leaks or other problems.
- ✓ Have inventory control procedures to track materials from receipt to ultimate use or disposal and use to determine if releases have occurred.

AUDIT QUESTION D2
Does your secondary containment comply with the requirements described in Section 4.1?

☐ **YES**
☐ **NO – Out of Compliance**

4.2 Underground Storage Tanks



Your business may utilize underground storage tanks (USTs) in its day-to-day operations. The storage and handling of products (such as perc or petroleum solvents) can have significant environmental and safety consequences if they are not managed properly.

AUDIT QUESTION D3
Do you store any materials in an underground storage tank?

☐ **YES**
☐ **NO – Skip to Section 4.3** (page 4-10)

Is Your UST Regulated?
A **regulated UST** is defined as a UST or combination of USTs and underground connected piping that have at least 10 percent of their volume underground and are, were, or may have been used to contain a "regulated substance."

Petroleum solvents and perchloroethylene are considered **regulated substances**; therefore if you store these substances in an underground storage tank, it is regulated and you must comply with the requirements outlined in this section.

AUDIT QUESTION D4
Is your UST a "regulated UST?"

☐ **YES**
☐ **NO – Skip to Section 4.3** (page 4-10)

In addition to the following requirements for underground storage tanks, there are requirements for the location of tanks and other equipment, dispensing of fuel such as nozzle requirements, warning signs, collision protection, self-serve fueling, and fire extinguishers. Contact the DEQ's Storage Tank Unit at 800-662-9278 for information about these requirements.

TABLE 4-1: GENERAL UST REQUIREMENTS

- ☐ All regulated USTs must be properly registered with the DEQ's Waste and Hazardous Materials Division (WHMD). You must complete a **"Registration for Underground Storage Tanks (EQP 3821)."** To access the registration form and instructions go to **www.michigan.gov/deq** (select "Land," "Storage Tanks," then "Underground Storage Tanks").
- ☐ Submit a $100-per-tank fee. The tank fee is paid annually to the WHMD.
- ☐ You must send an amended form to the WHMD any time the registration information changes. The registration form must be submitted within 30 days from the date of the change.
- ☐ You must have pollution liability insurance or demonstrate financial responsibility to cover the costs of cleanups, property damage, and third party compensation for bodily injury resulting from leaking underground storage tanks. You will be required to show proof of financial responsibility when you register the tanks. For further information regarding financial responsibility requirements go to **www.michigan.gov/deq** (select "Land," "Storage Tanks," then "Underground Storage Tanks").
- ☐ The UST system must be protected from potential releases and monitored.
- ☐ Keep records of your daily operations, purchases of equipment, and other information relating to the operation of your UST system. Records must be kept on routine maintenance of the UST system, release detection, inventory control, site assessment results, reporting of releases, and corrective actions. These records should be kept on-site and be immediately available upon request.
- ☐ Keep records indefinitely.
- ☐ When the material stored in a UST is changed from a regulated substance to a non-regulated substance (such as water or heating oil), you must follow the same procedures as though you permanently closed the UST system (see 4.2.2).
- ☐ Any time a non-emergency release is suspected or confirmed, you must report the release within 24 hours to the WHMD at **800-MICH-UST**. See Chapter 5 for instructions and regulations on how to properly report a spill. Once a suspected release has been reported, you have 14 days to investigate the release and either confirm the release or cancel the suspected release report. If a suspected release is upgraded to a confirmed release or if you initially know that you have a confirmed release, you must begin corrective action as described in Chapter 4.2.3.

AUDIT QUESTION D5

Is your UST in compliance with the requirements identified in Table 4-1?

☐ **YES**

☐ **NO - Out of Compliance**

4.2.1 New UST Installations

If you are installing a new UST you must comply with the requirements identified in Table 4-2.

AUDIT QUESTION D6
Are you installing or planning to install a new UST system?

☐ **YES**
☐ **NO – Skip to Section 4.2.2** (page 4-7)

TABLE 4-2: REQUIREMENTS FOR NEW INSTALLATIONS:

- ☐ A **"Notice of Proposed Installation of Underground Storage Tanks (EQP 3820)"** must be completed and submitted with the site diagram detailing the materials and part numbers used on the UST installation as appropriate.
- ☐ The requirements for spill protection, overfill prevention, corrosion protection, and release detection must be met at the time of installation.
- ☐ At least 30 days before you install or use a UST system, you must submit installation plans for review to the WHMD. The plans submitted for installation approval must include:
  - o a site diagram detailing the location of USTs, property lines, buildings, and drinking water wells;
  - o a list of materials used for the UST installation as described in Michigan Underground Storage Tank Regulations (MUSTR).
- ☐ After approval of the plans, you must notify the WHMD of the installation date of the UST system seven days prior to the installation.
- ☐ Following inspection of the site and prior to use of the UST system, a registration form with a $100 fee per UST must be sent to WHMD's Storage Tank Unit (STU).
- ☐ A certificate will be mailed to the owner/operator to be displayed at the facility location.
- ☐ Any person who installs or removes a UST system in Michigan must obtain $1 million of pollution liability insurance.

AUDIT QUESTION D7
Are you complying with the requirements for installing a new UST system identified in Table 4-2?

☐ **YES**
☐ **NO – Out of Compliance**

4.2.2 UST Removal, Closure, and Changes of Stored Material

There are two types of closures for UST systems that are allowed - temporary and permanent. A temporary closure is allowed for up to a 12-month period, only if it is intended to bring a leaking UST back into service. A UST system is considered permanently closed when the UST system is empty for 30 days or more and does not meet the requirements for temporary closure or change-in-service. If you are temporarily or permanently closing a UST, use Table 4-3 to identify the requirements that apply to you. When the material stored in a UST is changed from a regulated substance to a non-regulated substance (such as water or heating oil), you must follow the same procedures as though you permanently closed the UST system (Table 4-3).

AUDIT QUESTION D8

Are you planning on temporarily or permanently closing a UST system or changing the material stored in the UST?

☐ **YES**

☐ **NO – Skip to Section 4.2.3** (page 4-9)

TABLE 4-3: REQUIREMENTS TO TEMPORARILY OR PERMANENTLY CLOSE A UST SYSTEM:

If Temporarily Closing a UST System:

- ☐ You must submit an **"Intent of Removal, Closure, or Change-in-Service of Underground Storage Tanks" (EQP 3824)** form notifying the WHMD of the temporary closure.
- ☐ You must continue operating the corrosion protection and release detection systems. (Release detection is not required if the UST system is empty).
- ☐ A temporarily closed UST system may not be brought back into service unless it is fully upgraded for corrosion protection, overfill prevention, release detection, and spill protection. The UST system must pass tank and line tightness testing.

If Permanently Closing a UST System:

- ☐ A permanently closed UST system must be emptied and cleaned by removing all liquids and accumulated sludge and purged of all vapors. If this liquid and sludge is characterized as hazardous waste (see Chapter 2.3) and there is enough volume that it may change your hazardous waste generator status for the month(s) the liquid is shipped off-site, you must renotify the WHMD and meet all the applicable hazardous waste requirements for that generator status.
- ☐ All permanently closed UST systems must be removed from the ground and the WHMD must be notified of the pending removal by submitting an **"Intent of Removal, Closure, or Change-in-Service of Underground Storage Tanks" (EQP 3824)** 30 days prior to the pending removal date. A site assessment must be performed as described below.
- ☐ In cases where a permanent structure is above or near the UST, the UST system may be closed in-place. A closed in-place UST must be filled with an inert solid material such as concrete or pea gravel.

REQUIREMENTS TO TEMPORARILY OR PERMANENTLY CLOSE A UST SYSTEM *(continued)*

- ☐ A site assessment must be performed. Once the UST is closed, you must submit an amended **"Registration for Underground Storage Tanks" (EQP 3821)** to the WHMD within 30 days of the closure. In place of an amended EQP 3821, the "**Underground Storage Tank System Site Assessment Report and Closure or Change-In-Service Registration" (EQP 3881)** can be submitted within 45 days of permanent closure or change-in-service.
- ☐ When a UST system is closed or a change-in-service occurs, the UST site must be assessed for past releases where contamination is most likely to be present. A proper site assessment requires sampling of soil and/or water. A laboratory using US EPA or state acceptable methods must analyze these samples.
- ☐ The site assessment results must be submitted to the WHMD on the **"Underground Storage Tank System Site Assessment Report and Closure or Change-in-Service Registration" (EQP 3881)**.
- ☐ A site assessment is not required if contaminated soils, groundwater, or free product are discovered. If you find one of the following indicators of a release of regulated product, you must report a confirmed release to the WHMD within 24 hours of discovery at **800-MICH-UST**: visible or olfactory evidence of contamination at the UST site during excavation, if field screening instrumentation (e.g., a photo ionization meter [PID]) indicates the presence of contamination, or if your site assessment shows contamination. You must then follow the WHMD guidelines for further testing and clean up the contamination as described in Chapter 4.2.3.

You can find more information about tank removal, closure, and changes to stored materials as well as the forms mentioned above at **www.michigan.gov/deq** (select "Land," "Storage Tanks," then "Underground Storage Tanks").

AUDIT QUESTION D9

Are you complying with the appropriate requirements from Table 4-3?

☐ **YES**

☐ **NO – Out of Compliance**

4.2.3 Releases, Reporting, and Investigation

The requirements in Table 4-4 apply if you have a release from a UST. Additional release reporting requirements are provided in Chapter 5.5.

AUDIT QUESTION D10

Have any materials been released from the UST?

☐ **YES**

☐ **NO – Skip to Section 4.3** (page 4-10)

TABLE 4-4: UST RELEASE REPORTING REQUIREMENTS

- ☐ Any time a non-emergency release is suspected or confirmed, you must report the release within 24 hours to the DEQ, Storage Tank Unit (STU) at **800-MICH-UST**. See Chapter 5.5 for instructions and regulations on how to properly report a spill.
- ☐ Once a suspected release has been reported, you have 14 days to investigate the release and either confirm the release or cancel the suspected release report.
- ☐ If a suspected release is upgraded to a confirmed release or if you initially know that you have a confirmed release, you must begin corrective action.
- ☐ You must hire a qualified underground storage tank consultant to perform corrective action at your site. A list of consultants is available at **www.michigan.gov/deq** (select "Land," "Storage Tanks," then "Underground Storage Tanks").
- ☐ The consultant must have $1 million coverage in pollution liability insurance. Be aware that even though you must hire a consultant, you are ultimately liable for assuring that corrective actions are performed at your site.
- ☐ After a release has been reported, you or your consultant must immediately begin to perform initial response actions. If the corrective action is not completed after performing the initial response activities, the consultant must determine the extent of the contamination, conduct a risk-based corrective action assessment, and prepare a Corrective Action Plan to further address the contamination at the site.
- ☐ The consultant must submit the following reports to the WHMD: initial assessment report, final assessment report, and the closure report.
- ☐ Each site must be evaluated and cleaned up based on the current cleanup criteria and the level of risk that the site poses to public health and the environment, as determined by the consultant performing the corrective action.

AUDIT QUESTION D11

Are you complying with the release response requirements identified in Table 4-4?

☐ **YES**

☐ **NO - Out of Compliance**

4.3 Aboveground Storage Tanks

Aboveground storage tanks (ASTs) are often used for the same purposes as USTs. An AST system has less than 10 percent of the volume of the storage tank system underground. While AST systems do not pose the same environmental or human health risks as USTs, the impacts may be significant if their contents are accidentally released. One advantage of ASTs is that they are highly visible so any leaks or defects can be detected early.

AUDIT QUESTION D12
Do you have any aboveground storage tanks (AST)?

☐ **YES**
☐ **NO – Go to Chapter 5**

Are Your ASTs Regulated by the DEQ?

Aboveground storage locations that fit one or more of the following conditions must be plan reviewed and certified by the WHMD:

- Any flammable compressed gas or LPG container filling location.
- A facility that supplies flammable compressed gas or any LPG that has a tank with a water capacity of more than 2,000 gallons, or two or more tanks with an aggregate water capacity of more than 4,000 gallons.
- A facility that supplies flammable liquid or combustible liquid that has an individual tank storage capacity of more than 1,100 gallons.

AUDIT QUESTION D13
Does the AST meet any of the following criteria:

- ☐ A flammable compressed gas or LPG container filling location.
- ☐ An LPG tank with a water capacity of more than 2,000 gallons, or two or more tanks with an aggregate water capacity of more than 4,000 gallons?
- ☐ Used to supply flammable or combustible liquid with a storage capacity of more than 1,100 gallons.

☐ **YES**
☐ **NO – Go to Chapter 5**

TABLE 4-5: ABOVEGROUND STORAGE TANK REQUIREMENTS

- ☐ Prior to installing an AST you must submit the plan review form, **"Application For Installation of Aboveground Storage Tanks" (EQP 3859)**. This form will give you a complete list of materials that must be submitted with your application, including the plan review fee. You may request this form and get assistance completing it by calling the WHMD at 517-335-2690 or go to **www.michigan.gov/deq** (select "Land," "Storage Tank," then "Aboveground Storage Tanks").
- ☐ Most ASTs must have secondary containment. Several containment systems are acceptable to the WHMD: tanks with built in secondary containment, vaulted systems, concrete encasement, and lightweight thermal insulated tanks. For information on secondary containment, call the WHMD directly at 517-335-2690.
- ☐ Most ASTs must have corrosion protection. A single- or double-bottom shop-manufactured tank that has an external mastic-coated bottom can only be installed on a concrete or asphalt pad that is higher than the surrounding dike floor. Cathodic protection that is properly engineered and maintained must be used for the exterior of single- or double-bottom tanks that are installed on earth and gravel. Also, cathodic protection can be used on single- or double-bottom tanks that are installed on a concrete or asphalt pad at the same level as the rest of the dike floor. Additional requirements and guidelines can be found in the Storage and Handling of Flammable/Combustible Liquids (FL/CL) Rules.
- ☐ Precautions should be taken to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to: open flames, cutting and welding, thermal heat, spontaneous ignition, stray currents, smoking, etc. All equipment such as tanks, machinery, and piping must be bonded or otherwise connected to the ground to prevent static electricity.
- ☐ Releases or suspected releases of a regulated substance from flammable and combustible liquid ASTs and heating oil ASTs must be reported to the appropriate Remediation and Redevelopment Division district office (see Appendix C for phone numbers) and the local fire department having jurisdiction, or the Pollution Emergency Alerting System (PEAS) at **800-292-4706**. Some signs that a release has occurred are visibly stained soils, holes in the AST, and odoriferous soils.
- ☐ You need to know what to do in case of a fire, spill, or any on-site emergency. An emergency action plan must be available and made known to employees to respond to fire or other emergencies. (Alternate fire safety measures on-site must be in place while any fire safety equipment is shut down.) This emergency plan should be coordinated with your local emergency response agencies, such as fire, police, etc. In most cases, your local agencies will respond to your alarm or call. Additional requirements for release prevention and response planning is found in Chapter 5.

AUDIT QUESTION D14

Are you complying with the AST requirements identified in Table 4-5?

☐ **YES**

☐ **NO – Out of Compliance**

4.3.1 AST System Out-of-Service

An AST system that is going to be out-of-service for more than 12 months must comply with the requirements in Table 4-6.

AUDIT QUESTION D15
Do you have any ASTs that are out-of-service?

☐ **YES**
☐ **NO – Go to Chapter 5**

TABLE 4-6: AST OUT-OF-SERVICE REQUIREMENTS

- ☐ The AST system owner/operator is required to have the tank and related piping completely emptied and cleaned (professionally) to a vapor free condition.
- ☐ The piping must be disconnected from the AST system.
- ☐ The AST system must also be safeguarded against trespass.
- ☐ The owner/operator has the option of removing the tank system from the property. All tanks removed from the property must be disposed of properly.
- ☐ The facility owner/operator must submit the EQP 3858, "Change of Information Form for ASTs," to notify the WHMD that the AST system is out-of-service or of the AST removal.

AUDIT QUESTION D16
Are you complying with the AST out-of-service requirements identified in Table 4-6?

☐ **YES**
☐ **NO - Out of Compliance**

4.4 Where To Go For Help

SUBJECT	**Secondary containment of flammable and combustible liquids (Act 207)**
CONTACT	DEQ, Waste and Hazardous Materials Division
TELEPHONE	(517) 373-8168
WEB SITE	www.michigan.gov/deq (select "Land" then "Storage Tanks")
SUBJECT	**Container storage of flammable and combustible liquids (MIOSHA)**
CONTACT	MIOSHA, Consultation Education & Training Division
TELEPHONE	(517) 322-1809
WEB SITE	www.michigan.gov/dleg (select "MIOSHA," "Standards and Legislation," "General Industry," then "Part 75 Flammable and Combustible Liquids (1910.106)"
SUBJECT	**Secondary containment of hazardous waste (DEQ)**
CONTACT	DEQ, Waste and Hazardous Materials Division, District Office
TELEPHONE	See Appendix C for phone numbers
WEB SITE	www.michigan.gov/deq (select "Waste," "Hazardous Waste," "Hazardous Waste Management," then "Spill Protection and Reporting")
SUBJECT	**PIPP secondary containment for polluting materials (DEQ)**
CONTACT	DEQ, Water Division District Office
TELEPHONE	For a list of contacts go to: www.deq.state.mi.us/documents/deq-ead-tas-pippcontacts.pdf
WEB SITE	www.michigan.gov/deq (select "Assistance & Support Services," "Environmental Reporting," then "Emergency Planning")
PUBLICATIONS	1. Pollution Incident Prevention Plan (PIPP) and Part 5 Rules Informational Packet
SUBJECT	**Transportation of hazardous material**
CONTACT	Michigan State Police, Motor Carrier Division, Hazardous Materials Section
TELEPHONE	(517) 336-6580
WEB SITE	www.michigan.gov/msp (select "Services to Governmental Agencies," "Motor Carrier Division," then "Hazardous Materials")
SUBJECT	**Transportation of hazardous material**
CONTACT	U.S. Department of Transportation
TELEPHONE	(800) 467-4922
WEB SITE	hazmat.dot.gov
PUBLICATIONS	1. Hazardous Materials Registration Program 2. How to Comply with Federal Hazmat Regulations 3. What Hazardous Materials Regulations Apply to Materials of Trade?

Chapter 5

Environmental Reporting, Planning, and Release Response Regulations

Compliance Audit Questions E1 through E13

CHAPTER 5: Environmental Reporting, Planning, and Release Response

Liquids such as perc can potentially be spilled and illegally allowed to run onto the ground, down drains, or evaporate. If this happens, it might cause serious harm to the environment and may possibly put you, your employees, and neighbors at risk. The reporting, planning, and response requirements identified in this chapter are used to protect public health and the environment from spills and releases that could occur at your business.

5.1 Hazardous Chemical Inventory Reporting

It is especially important for the safety of facility personnel, the community, and the first responders, that the first responders (usually the local fire department) know what hazardous chemicals are in your facility. Hazardous chemical inventory reporting is a federal requirement that was established under Title III of the Superfund Amendments and Reauthorization Act (SARA Title III). It applies to any facility that is required to maintain a Material Data Safety Sheet (MSDS) in accordance with the Occupational Safety and Health Administration (OSHA) regulations. The inventory of hazardous chemicals that you submit provides valuable information regarding hazard potential to first responders in the event of a chemical release emergency.

Who Must Report?

You are required to maintain an MSDS for all your dry cleaning chemicals. **If your facility has 10,000 pounds or more of any dry cleaning chemical on site (in storage, and/or in process) at any one given time, your facility is subject to this reporting requirement.**

10,000 pounds = 740 gallons of perc or
1,470 gallons of petroleum solvent

AUDIT QUESTION E1

Does your facility have 10,000 pounds or more of any dry cleaning chemical on site at any one given time?

☐ **YES**

☐ **NO – Skip to Section 5.2** (page 5-3)

IN THIS CHAPTER ...

If your business is subject to this requirement you must submit an initial report and an annual report of your hazardous chemicals (see 1 and 2 below).

1. *Initial Report of Hazardous Chemicals*

You are required to submit an initial report of OSHA hazardous chemicals on site in amounts greater than 10,000 pounds to the Michigan SARA Title III Program, your Local Emergency Planning Committee (LEPC), and your local fire department. To find your LEPC go to **www.michigan.gov/deq** (select "Assistance & Support Services," "Environmental Reporting," then "SARA Title III") or call 800-662-9278.

The initial report must be submitted within three months after the chemical threshold is exceeded.

The initial report consists of either copies of the MSDSs or a list of the OSHA hazardous chemicals. If you choose to submit a list, it must include the chemical or common name of each substance and must identify the applicable hazard categories.

Michigan SARA Title III Program
Department of Environmental Quality
P.O. Box 30457
Lansing, MI 48909-7957
(517) 373-8481
E-mail: deq-ead-sara@michigan.gov

AUDIT QUESTION E2
Have you submitted an initial report of your hazardous chemicals to the Michigan SARA Title III Program, Local Emergency Planning Committee, and local fire department?

☐ **YES**
☐ **NO – Out of Compliance**

2. *Annual Report of Hazardous Chemicals*

In addition to the initial report you must also submit an **annual** Emergency and Hazardous Chemical Inventory to the Michigan SARA Title III Program, your Local Emergency Planning Committee, and your local fire department. The inventory is submitted on a **Tier Two Report Form** by March 1 of every year. The Tier Two report includes information about the amount and storage of all hazardous chemicals that exceeded the applicable thresholds during the previous calendar year.

For information, the report form, and software to submit Tier Two hazardous chemical inventories in Michigan go to **www.michigan.gov/deq** (select "Assistance & Support Services," "Environmental Reporting," then "SARA Title III – Hazardous Chemical Inventory"). To contact the SARA Title III Program call 800-662-9278 and ask for the "SARA Title III Program."

AUDIT QUESTION E3
Do you submit an annual Hazardous Chemical Inventory (Tier II Report) to the Michigan SARA Title III Program, LEPC, and local fire department?

☐ **YES**
☐ **NO – Out of Compliance**

5.2 Pollution Incident Prevention Plan (PIPP)

Who Is Subject?
A dry cleaning facility that manages 440 or more pounds of "polluting materials" outdoors or 2,200 or more pounds of polluting materials indoors is subject to the PIPP requirements outlined in this section and secondary containment in Chapter 4.1. **For most dry cleaners, this would be approximately 32 gallons of perc outdoors or approximately 163 gallons of perc indoors.** It is necessary to include the amount of perc in the machines when calculating how much polluting materials are on-site. If your facility has products containing other polluting materials in concentrations of one percent or more that do not meet the conditional exemptions on the next page, it is necessary to include those amounts when determining if you meet the threshold. Some polluting materials found in products used in the dry cleaning industry include:

- 1,1,1-Trichloroethane (TCA)
- Acetic acid
- Petroleum naphtha blends, petroleum solvents
- Potassium hydroxide (Lye)
- Sodium bisulfite
- Sodium hydrosulfite
- Sodium hydrosulfite
- Sodium hydroxide (Lye)
- Sodium hypochlorite
- Sulfuric acid
- Tetrachloroethylene (Perchloroethylene or PCE)
- Toluene
- Trichloroethylene (TCE)

See Appendix B for common dry cleaning uses of these chemicals.

Dry cleaners that have an "oil" storage tank with a storage capacity of 660 gallons or greater, or a total storage capacity of 1,320 gallons for all containers, would not be required to have a PIPP. However, they would be subject to federal Spill Prevention Control and Counter Measure (SPCC) requirements (see Chapter 5.3). "Oil" includes lubricating oils and petroleum solvents such as naphtha, mineral spirits, and Stoddard Solvent.

AUDIT QUESTION E4
Do you manage more than 440 pounds of "polluting materials" outdoors or 2,200 pounds indoors?

☐ **YES**
☐ **NO – Skip to Section 5.3** (page 5-6)

PIPP Exemptions

The conditional exemptions include the following:

- Containers that do not individually exceed ten gallons or 100 pounds in size that are stored indoors with adequate safeguards to prevent releases to drains, groundwater, and surface waters.
- Dry cleaner that is in compliance with the following regulations that cover the polluting materials on-site:
  - ✓ Aboveground storage tank requirements for flammable and combustible liquids
  - ✓ Underground storage tank requirements
  - ✓ Hazardous waste management requirements

AUDIT QUESTION E5

Are your "polluting materials" managed in containers that individually do not exceed 10 gallons **AND** stored indoors with adequate safeguards to prevent a release?

☐ **YES – Skip to Section 5.3** (page 5-6)

☐ **NO**

AUDIT QUESTION E6

Are your "polluting materials" stored in an underground storage tank or aboveground storage tank that is in compliance with the requirements described in Chapter 4?

☐ **YES – Skip to Section 5.3** (page 5-6)

☐ **NO**

TABLE 5-1: PIPP REQUIREMENTS

☐ Develop a Pollution Incident Prevention Plan consisting of the following main components:

- Facility information including emergency contacts;
- Emergency notification procedures;
- Spill control and cleanup procedures;
- Inventory of polluting materials exceeding threshold management quantities;
- Site plan;
- Description of outdoor secondary containment for liquid polluting materials;
- Other spill control measures; and
- General facility physical security methods.

☐ Review your PIPP every three years or after any release that required implementation of the plan.

PIPP REQUIREMENTS *(continued)*

☐ Send a notification that a PIPP was prepared to the following:

- The local emergency planning committee.
- The local health department.
- The DEQ, Water Division (WD) district office. A certification stating the facility is in compliance with all the Part 5 rules must also be submitted to the DEQ. If a PIPP was updated, you only have to renotify and recertify compliance with the DEQ.

There is not a specific form required for use when submitting the notification or certification. It is recommended you identify what polluting materials are on-site in your notification. This may help determine if any of these entities would want to request a copy of the facility PIPP. A facility must submit a copy of the plan within 30 days of receiving the request.

A PIPP and Part 5 Rules Informational Packet is available at **www.michigan.gov/deq** (click on "Assistance & Support Services" "Environmental Reporting" "Emergency Planning" to help meet the **Part 5 Rule** requirements.

AUDIT QUESTION E7

Are you complying with the PIPP requirements identified in Table 5-1?

☐ **YES**
☐ **NO – Out of Compliance**

5.3 Spill Prevention, Control, and Countermeasure (SPCC) Plans

A dry cleaning facility that has 1,320 gallons or more storage capacity for petroleum solvents, including naphtha, mineral spirits, and Stoddard Solvent, along with other oils may be subject to the federal SPCC regulations. Containers less than 55 gallons in size do not need to be included when calculating this volume. In addition to preparing an SPCC plan and having it certified by a professional engineer, there are secondary containment requirements, inspections, release reporting, and other requirements. SPCC plans may be combined with other required plans. If you believe you are subject to this requirement contact the Environmental Assistance Center at 800-662-9278 or visit the SPCC Plan web site at **www.epa.gov/oilspill**.

AUDIT QUESTION E8

Does your facility have 1,320 gallons of storage capacity for petroleum solvents, naptha, mineral spirits, or Stoddard Solvent?

☐ **YES**
☐ **NO – Skip to Section 5.4**

AUDIT QUESTION E9

Are you complying with the SPCC requirements?

☐ **YES**
☐ **NO – Out of Compliance**

5.4 Contingency Plans for Hazardous Waste Generators

The hazardous waste regulations require **Large Quantity (LQG)** and **Small Quantity Generators (SQG)** to be prepared in case of a fire, explosion, or release of hazardous waste, and to maintain and operate their businesses in a way that minimizes these risks. **Conditionally Exempt Small Quantity Generators (CESQG)** are highly encouraged to also be prepared. See Chapter 2.3 for an explanation of the generator status levels.

If your dry cleaning establishment is a large quantity generator, you are required to have a written contingency plan. See the DEQ's **"Contingency Plan and Emergency Procedures"** fact sheet designed to help LQGs meet these requirements. To access this fact sheet on the Internet, go to **www.michigan.gov/deq** (select "Waste," "Hazardous Waste," "Hazardous Waste Management," then "Spill Protection and Reporting").

AUDIT QUESTION E10

Are you a SQG or CESQG of hazardous waste (see chapter 2.3 to determine generator status)?

☐ **YES**
☐ **NO – Skip to Section 5.5** (page 5-8)

TABLE 5-2: HAZARDOUS WASTE EMERGENCY PREPAREDNESS AND PREVENTION REQUIREMENTS

☐ Have proper emergency equipment available:

- Communication devices (phones, radios, intercom, etc.);
- Portable fire extinguishers;
- Spill control equipment (absorbents, containers, kits);
- Water for fire control in sufficient volumes;
- Test and maintain equipment as necessary;
- Have immediate access to an internal alarm system (this means personnel can activate an alarm within seconds, not minutes); and
- Provide and maintain sufficient aisle space in the hazardous waste handling areas to ensure access of emergency equipment and emergency personnel.

☐ SQGs must identify one employee who is on site or on call and has the responsibility to coordinate all emergency response activities. It is recommended that you identify alternative coordinators to cover when the primary person is on vacation or otherwise not available. SQGs must post the following next to their telephones:

- Name and telephone number(s) of the emergency coordinator and alternates;
- Locations of fire extinguishers, alarms, and spill control material; and
- Location of fire alarms if direct to fire department, or the telephone number of the local fire department.

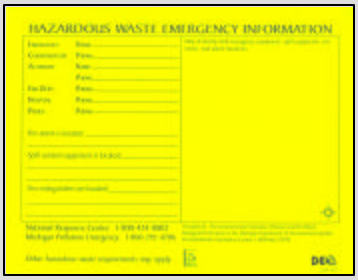
☐ Have arrangements in place with authorities that respond to the types of emergencies regarding the waste handled at your business. Invite police, fire departments, and emergency response teams to tour your business. Keep documentation of any visits by emergency response people, agreements, etc.

☐ SQGs must send a diagram or discuss the layout of their facility, access roads, and evacuation routes with the response agencies. SQGs must also submit to local hospitals a listing of possible injuries or illnesses that might result from the hazardous waste at their businesses. It is recommended that CESQGs also submit this information. If local or state authorities decline your arrangement, you must have written documentation of that refusal. If you use outside contractors to respond to emergencies, you must make arrangements with emergency response contractors and suppliers.

☐ The plan must be updated whenever emergency coordinators or equipment change, or when the plan fails during an emergency. In addition, updates must be made if the facility makes any changes to its design, construction, operations, etc., that increase the potential for fires, explosions, or releases of hazardous waste, or that change the necessary response actions.

☐ SQG must provide emergency training for employees. It is recommended records be kept of training, but not required for SQG or CESQG. There are other training requirements through MIOSHA Hazardous Waste Operations and Emergency Response (HAZWOPER).

The DEQ, Waste and Hazardous Materials Division (WHMD), has a **"Hazardous Waste Emergency Information" (EQP3472)** form you can use to post the required information next to telephones. You are not required to use this particular form; however, failure to have the information posted is a common violation found during hazardous waste inspections. There are other requirements outlined on the back of the self sticking form and in WHMD's **"Small Quantity Generator Requirements"** fact sheet. These documents can be obtained from the Environmental Assistance Center at 800-662-9278.


HAZARDOUS WASTE EMERGENCY INFORMATION

If you are required to prepare another release prevention and response plan, you only need to add the hazardous waste management provisions necessary to make your existing plan comply with these additional requirements.

Not all of the specific requirements have been outlined above; therefore, you should contact your local WHMD district office (see Appendix C for phone numbers) or refer to the regulations for more details.

AUDIT QUESTION E11
Are you in compliance with the hazardous waste emergency preparedness and prevention requirements identified in Table 5-2?

☐ **YES**
☐ **NO – Out of Compliance**

5.5 Release Reporting Requirements

It is extremely important that you know who to contact should a spill/release occur at your facility. Use Table 5-3 to identify who you should contact and when.

- If in doubt whether or not a release should be reported, go ahead and report it to the state Pollution Emergency Alerting System (PEAS) at **800-292-4706** and to the National Response Center at **800-424-8802**. Report the release immediately (within 15 minutes).

*Some spills/releases require that a follow-up written report be completed. You can find information about these report forms as well as a detailed Release Notification Requirements table on the internet at **www.michigan.gov/deq** (select "Assistance & Support Services," Environmental Reporting," then "Spill/Release Reporting").*

AUDIT QUESTION E12
Do you know who to contact if you have a spill/release?

☐ **YES**
☐ **NO – Refer to Table 5-3**

TABLE 5-3: RELEASE REPORTING REQUIREMENTS

If the spill/release involves	Contact	Written Follow –Up Report
Threat to public health or safety	☐ 911 or Fire Department ☐ Local State Police Post ☐ DEQ, Air Quality Division District Office (Appendix C)	Within 30 days submit written report to the DEQ Air Quality Division District Supervisor.
7.4 gallons or more of perc	Within 15 minutes of discovery: ☐ National Response Center 800-424-8802 ☐ DEQ PEAS hotline 800-292-4706 ☐ Local Emergency Planning Committee (LEPC) (if release affects those outside of property boundries)	As soon as practicable after the release submit a written report to LEPC and Michigan SARA Title III Program. Find report at www.michigan.gov/deq (select "Assistance & Support Services," Environmental Reporting," then "Spill/Release Reporting")
Unpermitted release of 0.74 gallons or more of perc, or any amount that causes unnatural turbidity, color, visible sheens, oil films, foams, solids, or deposits in water.	As soon as practicable: ☐ DEQ PEAS hotline 800-292-4706	Within 10 days after release submit written report to DEQ, Water Division chief outlining cause, discovery, response, and prevention of reoccurrence.
Any amount of substance from an underground storage tank (UST)	Within 24 hours: ☐ DEQ PEAS hotline 800-292-4706	Contact DEQ, Remediation and Redevelopment Division for required reports 800-662-9278.
Any amount of petroleum solvent (Stoddard Solvent) that reaches navigable waters or shorelines that can affect water quality standards, or cause a film, sheen or discoloration, or could cause a sludge or emulsion, and it was not a permitted release.	☐ National Response Center 800-424-8802	
Hazardous waste release that reaches groundwater or that could threaten human health or environment	Immediate to: ☐ DEQ PEAS hotline 800-292-4706 ☐ National Response Center 800-424-8802	Only large quantity generators of hazardous waste must submit report. For information call 800-662-9278.
One death or the hospitalization of three or more persons	Within 8 hours: ☐ MIOSHA hotline 800-858-0397	

AUDIT QUESTION E13
Do you know how you will respond to and clean up a spill/release, should one occur at your establishment?

☐ **YES**
☐ **NO – Read Section 5.6**

5.6 Release Response and Cleanup

Responding to and cleaning up a spill can be expensive and detrimental to the health of your employees and environment. Make it a priority to integrate pollution prevention activities into all aspects of your operations, including the prevention of spills.

You must be ready to immediately respond whenever a release occurs. Whether you are legally required to prepare an environmental release prevention and response plan or voluntarily decide to prepare one, it needs to be in effect with personnel who are adequately trained to implement it. This helps to ensure that when a release occurs, appropriate response is taken without delay. At least one person trained in release control and cleanup procedures, equipment use, and disposal methods of recovered materials should be on duty or on call at all times. It is important to remember that you are obligated to respond and clean up all contamination. Failure to do so may result in escalated enforcement, including but not limited to the imposition of civil penalties.

All response actions to releases of materials should encompass the following concerns:

1. Immediately assess the type of release and take appropriate response measures to protect the health and safety of those in the affected area, when and where possible.

2. Quickly contain the release to prevent the spread of contamination. For example, cover floor drains to prevent the release from reaching the sewer and dike the release with absorbents such as spill pillows or cat litter and dirt, if necessary, to prevent it from spreading. Staff responding to the release must be trained and wearing the appropriate personal safety equipment. Most facilities managing materials are required to have an environmental release prevention and response plan in the event of a release. These plans need to be practical, efficient, and provide useful instructions to facility personnel that can be easily followed to clean up a release.

3. Clean up the contamination to prevent further damage(s) to human health and the environment. Release prevention, planning, rapid containment, response, and cleanup may minimize the environmental impact(s) as well as decrease your overall cost of cleanup. This can be as simple as sweeping up an absorbent used to contain a release, or as complex as purging and treating groundwater for years under an approved state remedial action plan or state/federal enforcement order. Waste generated from a cleanup must be properly characterized, managed, and disposed of in accordance with the applicable state and federal requirements. Most importantly, communicate with the environmental regulatory agencies in your area. DEQ staff can provide additional guidance to help assure your response is appropriate and cost-effective.

Some released substances and cleanup materials may pose a health threat to personnel. Have appropriate personal protection equipment (PPE) available and personnel trained in its proper use. Depending on the hazardous nature of the release, PPE may include the appropriate chemical resistant suits, gloves, boots, respirators, self-contained breathing apparatus, and eye protection such as goggles or face shields. MSDSs or the NIOSH Pocket Guide to Chemical Hazards' web sites at **www.cdc.gov/niosh/homepage.html** and **http://hazmat.dot.gov/gydebook.htm** contain valuable information for selecting the appropriate PPE. Persons responding to hazardous releases must be trained in accordance with the Hazardous Waste Operations and Emergency Response (HAZWOPER) procedures. Another option is to procure professional assistance. Look under the headings "Environmental and Ecological Services," "Spill Control Service," or "Waste Reduction, Disposal, and Recycling Service" in the yellow pages of your telephone directory for companies offering environmental cleanup services in your area.

Commercial spill kits are available to help contain releases, or you may assemble equipment specific to your company's needs based on release planning. Many products are used to contain and clean up released materials. Absorbent pads, booms, or portable dikes are often used for large liquid releases. Commercially available absorbent powders and granular clay (like cat litter) are examples of items used to absorb and contain small amounts of released liquids.

Be very careful not to mix incompatible or reactive wastes together. Containers used to store spent cleanup materials must be kept closed and labeled. Remember that the container must be resistant to the absorbed chemicals. If the container is not compatible with the released liquid, the container could dissolve, which could result in a bigger cleanup problem. Once contained, the used cleanup materials must be properly disposed of based on the hazardous characteristics of your waste. Make sure there is no free liquid present with the spent absorbent material, if the used materials are going to a sanitary landfill. If liquid is present, the absorbent material cannot be sent to a sanitary landfill for disposal. If the materials are characterized as hazardous waste, handle the waste in accordance with Chapter 2.3.

If a release cannot be cleaned up by your trained personnel, consider hiring an experienced environmental cleanup contractor. A contractor may provide cost effective response solutions in a more efficient and effective manner.

For more information about response procedures, contact your DEQ district office (see Appendix C). DEQ district office staff can verify that your state reporting obligation(s) have been satisfied and that your cleanup is being conducted properly.

5.7 Where To Go For Help

SUBJECT	**SARA Title III Hazardous Chemical Inventory**
CONTACT	DEQ, Environmental Science and Services Division, SARA TITLE III Program
TELEPHONE	(517) 373-8481
WEB SITE	www.michigan.gov/deq (select "Assistance & Support Services" then "Environmental Reporting")
PUBLICATIONS	1. SARA Title III Fact Sheet
SUBJECT	**Environmental investigation guidance, Remedial Action Plans (RAP), site cleanup requirements, and release reporting**
CONTACT	DEQ, Remediation and Redevelopment Division
TELEPHONE	(517) 373-9837
WEB SITE	www.michigan.gov/deq (select "Land" then "Land Cleanup")
SUBJECT	**Waste characterization, disposal information, and contingency plan**
CONTACT	DEQ, Waste and Hazardous Materials Division, District Office
TELEPHONE	See Appendix C for phone numbers
WEB SITE	www.michigan.gov/deq (select "Waste" "Hazardous Waste" "Hazardous Waste Management")
PUBLICATIONS	1. Hazardous Waste Emergency Information (EQP 3472) (posting for Small Quantity Generators) 2. Contingency Plan and Emergency Procedures (for Large Quantity Generators) 3. Personnel Training Requirements for Fully Regulated Generators of Hazardous Waste
SUBJECT	**Releases from leaking underground storage tanks**
CONTACT	DEQ, Remediation and Redevelopment Division District Office
WEB SITE	www.michigan.gov/deq (select "Land," "Storage Tank," then "Underground Storage Tank")
SUBJECT	**Emergency response planning**
CONTACT	Michigan State Police, Emergency Management Division
TELEPHONE	(517) 336-6198
WEB SITE	www.michigan.gov/msp (select "Services to Governmental Agencies" then "Emergency Management Division")
SUBJECT	**Pollution Incident Prevention Plans (PIPP)**
CONTACT	DEQ, Water Division, District Office
WEB SITE	www.michigan.gov/deq (select "Assistance & Support Services," "Environmental Reporting," then "Emergency Planning")
PUBLICATIONS	1. Pollution Incident Prevention Plan (PIPP) and Part 5 Rules Informational Packet

SUBJECT	**Release of hazardous materials during transportation**
CONTACT	U.S. Department of Transportation
TELEPHONE	(800) 467-4922
WEB SITE	hazmat.dot.gov
PUBLICATIONS	1. Department of Transportation Hazardous Materials Incident Report (DOT F4800.1)
SUBJECT	**Material Safety Data Sheet (MSDS)**
WEB SITE	www.reade.com/MSDS_Links.html
SUBJECT	**Chemical emergency preparedness and prevention**
CONTACT	EPA Chemical Emergency Preparedness Prevention Office
WEBSITE	www.epa.gov/ceppo

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

SPILL OR RELEASE REPORT

NOTE: Some regulations require a specific form to use and procedures to follow when reporting a release. Those forms and procedures **MUST** be used and followed if reporting under that authority. The purpose of this report form is to aid persons reporting releases under the various regulations that do not require a specific form. This report form is not required to be used. **To report a release, you may telephone the PEAS Hotline, or DEQ District Office which oversees the county where it occurred, and other regulating agencies and provide the following information. Keep a copy of this report as documentation that the release was reported. If you prefer to submit this report electronically by FAX or e-mail, contact the regulating agency for the correct telephone number or e-mail address.** Submission of an additional written follow-up report may be required. See the DEQ document, *Release Notification Requirements in Michigan,* or the specific regulations, or contact the regulating DEQ Division for information.

Please print or type all information.

NAME OF PERSON REPORTING RELEASE

TELEPHONE NUMBER (provide area code)

NAME OF BUSINESS

STREET ADDRESS

CITY | **STATE** | **ZIP CODE**

BUSINESS TELEPHONE NUMBER (provide area code)

RELEASE LOCATION (provide address if different than business, if known, and give directions to the spill location. Include nearest highway, town, road intersection, etc.)

EPA IDENTIFICATION NUMBER (if applicable)

COUNTY | **TOWNSHIP** | **TIER/RANGE/SECTION (if known)**

RELEASE DATA. Complete all applicable categories. Check all the boxes that apply to the release. Provide the best available information regarding the release and its impacts. Attach additional pages if necessary.

DATE & TIME OF RELEASE (if known)

____/____/____

_____am/pm

DATE & TIME OF DISCOVERY

____/____/____

_____am/pm

DURATION OF RELEASE (if known)

_____ days

_____ hours

_____ minutes

TYPE OF INCIDENT

- ☐ Explosion
- ☐ Fire
- ☐ Leaking container
- ☐ Loading/unloading release
- ☐ Pipe/valve leak or rupture
- ☐ Vehicle accident
- ☐ Other _____

MATERIAL RELEASED (Chemical or trade name) ☐ CHECK HERE IF ADDITIONAL MATERIALS LISTED ON ATTACHED PAGE.	**CAS NUMBER or HAZARDOUS WASTE CODE**	**ESTIMATED QUANTITY RELEASED (indicate unit e.g. lbs, gals, cu ft or yds)**	**PHYSICAL STATE RELEASED (indicate if solid, liquid, or gas)**

FACTORS CONTRIBUTING TO RELEASE

- ☐ Equipment failure
- ☐ Operator error
- ☐ Faulty process design
- ☐ Training deficiencies
- ☐ Unusual weather conditions
- ☐ Other _____

SOURCE OF LOSS

- ☐ Container
- ☐ Railroad car
- ☐ Pipeline
- ☐ Ship
- ☐ Tank
- ☐ Tanker
- ☐ Truck
- ☐ Other _____

TYPE OF MATERIAL RELEASED

- ☐ Hazardous waste
- ☐ Flammable & combustible material
- ☐ Oil/other petroleum products or waste
- ☐ Polluting material (including salt)
- ☐ Sewage
- ☐ Other _____
- ☐ Unknown

MATERIAL LISTED ON

- ☐ CERCLA Table 302.4 (40 CFR Part 302)
- ☐ Extremely Hazardous Substances (EPCRA Section 302) list (40 CFR Part 355)
- ☐ Michigan Critical Materials Register
- ☐ RCRA and/or Part 111 hazardous waste tables
- ☐ CAA Section 112(r) list (40 CFR Part 68)
- ☐ Other list _____ ☐ Unknown

IMMEDIATE ACTIONS TAKEN

- ☐ Containment
- ☐ Dilution
- ☐ Evacuation
- ☐ Hazard removal
- ☐ Neutralization
- ☐ System shut down
- ☐ Diversion of release to treatment
- ☐ Decontamination of persons or equipment
- ☐ Monitoring
- ☐ Other _____

RELEASE REACHED

- ☐ Surface waters (include name of river, lake, drain involved) _____ Distance from spill location to surface water, in feet_____
- ☐ Drain connected to sanitary sewer (include name of wastewater treatment plant and/or street drain, if known) _____
- ☐ Drain connected to storm sewer (include name of drain or water body it discharges into, if known) _____
- ☐ Groundwater (indicate if it is a known or suspected drinking water source and include name of aquifer, if known) _____
- ☐ Soils (include type e.g. clay, sand, loam, etc.) _____
- ☐ Ambient Air

THIS IS A MASTER COPY. PLEASE MAKE COPIES FROM THIS MASTER COPY AS NEEDED.

EQP 3465 (Rev. 01/03)

EXTENT OF INJURIES, IF ANY	WAS ANYONE HOSPITALIZED?	TOTAL NUMBER OF INJURIES TREATED ON-SITE:
.....	☐ Yes NUMBER HOSPITALIZED:____	
.....	☐ No	

DESCRIBE THE INCIDENT, THE TYPE OF EQUIPMENT INVOLVED IN THE RELEASE, HOW THE VOLUME OF LOSS WAS DETERMINED, ALONG WITH ANY RESULTING ENVIRONMENTAL DAMAGE CAUSED BY THE RELEASE. IDENTIFY WHO IMMEDIATELY RESPONDED TO THE INCIDENT (own employees or contractor — include cleanup company name, contact person, and telephone number). ALSO IDENTIFY WHO DID FURTHER CLEANUP ACTIVITIES, IF PERFORMED OR KNOWN WHEN REPORT SUBMITTED

☐ **CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED ON ATTACHED PAGE**

ESTIMATED QUANTITY OF ANY RECOVERED MATERIALS AND A DESCRIPTION OF HOW THOSE MATERIALS WERE MANAGED (include disposal method if applicable)

☐ **CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED ON ATTACHED PAGE**

ASSESSMENT OF ACTUAL OR POTENTIAL HAZARDS TO HUMAN HEALTH (include known acute or immediate and chronic or delayed effects, and where appropriate, advice regarding medical attention necessary for exposed individuals.)

☐ **CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED ON ATTACHED PAGE**

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY NOTIFIED:

☐ PEAS: 800-292-4706 Log Number Assigned _____

☐ DEQ District or Field Office

- ☐ Cadillac
- ☐ Detroit
- ☐ Gaylord
- ☐ Grand Rapids
- ☐ Jackson
- ☐ Kalamazoo
- ☐ Lansing
- ☐ Marquette
- ☐ Saginaw Bay
- ☐ Southeast Michigan (Livonia)

Division(s) Contacted:

- ☐ Air Quality
- ☐ Geological and Land Management
- ☐ Remediation and Redevelopment
- ☐ Waste and Hazardous Materials
- ☐ Water

RECORD NAME OF DEQ STAFF CONTACTED & PHONE NUMBER

OTHER ENTITIES NOTIFIED:

- ☐ National Response Center (NRC): 800-424-8802
- ☐ US Coast Guard Office Contacted: ☐ Detroit ☐ Grand Haven ☐ Sault Ste. Marie
- ☐ US Environmental Protection Agency
- ☐ Local Fire Department
- ☐ Local Police Department
- ☐ State Police
- ☐ Local Emergency Planning Committee
- ☐ Wastewater Treatment Plant Authority
- ☐ Hazmat Team
- ☐ Local Health Department
- ☐ Michigan Department of Consumer & Industry Services (MIOSHA)
- ☐ Michigan Department of Agriculture: 800-405-0101
- ☐ Other _____

RECORD NAME OF OTHER STAFF CONTACTED & PHONE NUMBER

SIGNATURE OF PERSON REPORTING

DATE REPORTED	TIME REPORTED	ENTITIES CONTACTED BY:
	am/pm	☐ Telephone ☐ Fax ☐ Email ☐ Other _____

Chapter 6

Michigan Dry Cleaning Program Regulations

Compliance Audit Questions F1 through F5

CHAPTER 6: Michigan Dry Cleaning Program Regulations

6.1 A Brief History

In the 1920s and 1930s, Stoddard solvent, carbon tetrachloride, and trichloroethylene were commonly used solvents in dry cleaning. In the 1940s, perchloroethylene (perc) had an increase in usage and is the primary dry cleaning solvent used today. Occupational safety and health hazards have long been recognized in dry cleaning operations. Initially, the primary concern involved highly flammable solvents for cleaning and spotting garments. In the late 1940s, the State Fire Marshal recognized that potentially serious health hazards existed for the use of chlorinated hydrocarbon solvents. The state legislature then enacted the ***Dry Cleaning Act, Public Act 327 of 1947, as amended (Act 327)*** to deal with this hazard. The act was superseded by the ***Michigan Public Health Code, Public Act 368 of 1978, as amended (Act 368)*** which authorized the promulgation of the ***Administrative Rules for Class I, II, III, and IV Dry Cleaning Establishments***. The purpose of these rules is to maximize contaminant control, with an emphasis on preventing employee and public exposure to cleaning solvents within the dry cleaning industry. These rules are administered by the Department of Environmental Quality (DEQ), Dry Cleaning Program.

6.2 Primary Function Of The Dry Cleaning Program

The Dry Cleaning Program licenses, inspects, and regulates Class I, II, III, and IV establishments annually to protect workers, general public, and the environment from overexposure of dry cleaning chemicals. Before a new dry cleaning plant is established or equipment is installed, or an existing establishment is making modifications, prior approval must be obtained from the Dry Cleaning Program.

The specific objectives of the Dry Cleaning Program assure the following:

- Dry cleaning establishments are constructed in such a manner as to isolate and confine solvents to well ventilated areas.
- Dry cleaning machines are designed to be either nonvented, closed loop, or equipped with required ventilation systems and safety controls, and maintained free of solvent leaks and other health hazards.
- All commercial dry cleaning equipment function properly to clean and dry clothing and remove the toxic solvents to prevent the return of solvent laden garments to customers.

IN THIS CHAPTER ...

- Public and employee exposures to perchloroethylene are minimized.
- Solvents are controlled in a manner to minimize air, ground, or hazardous waste contamination.
- The installation is in compliance with other state and local regulations and ordinances.

6.3 Duties Performed by a Dry Cleaning Inspector

Staff from the dry cleaning program inspect commercial and industrial dry cleaning establishments to determine if the establishment is in compliance with requirements for installation and operation. The purpose of the inspection is to identify the nature and extent of potential health hazards to the worker and the general public from exposure to highly toxic solvents associated with machine operation and cleaning processes.

In addition to conducting inspections, dry cleaning program staff review license applications to determine compliance with the installation requirements, including details on ventilation control of toxic solvents.

Dry cleaning plant installation plans must include information about the following:

- building construction
- floor drains
- heating and ventilation specifications
- high pressure steam systems
- water- and Freon-cooling systems
- electrical controls
- system safety interlocks

6.4 When to Notify the DEQ Dry Cleaning Program

You should contact the DEQ Dry Cleaning Program if any of the following will occur at your establishment:

- ✓ A move to a new location
- ✓ There will be a change of ownership
- ✓ Equipment changes are made
- ✓ A major spill occurs
- ✓ A fire occurs
- ✓ Dry cleaning is no longer being performed but the equipment still remains in the building (file becomes inactive and remains in the Dry Cleaning Program)

- ✓ Dry cleaning is no longer being performed and the equipment has been removed from the building

See page 6-6 for DEQ, Dry Cleaning Program contact information.

6.5 Dry Cleaning Licensing and Fees

All dry cleaning establishments must be licensed by the DEQ's Dry Cleaning Program and the license must be renewed annually. Annual renewal applications (figure 6-1) for a dry cleaning license are printed and mailed in November and payment must be submitted no later than January 1.

Licensing Fee for Perc Dry Cleaners
Renewal fees for dry cleaners that use perc are determined by the poundage capacity of the establishment's machines. There is a plant fee and a poundage fee which equals the license fee. For calendar year 2003 the plant fee is $134.97 and a $3.66 poundage fee. The renewal fees are increased annually based on the Detroit Consumer Price Index (DCPI), but cannot be raised more than 5%.

Example

The fee for a perc dry cleaning establishment with a 35 pound machine would be: **$134.97 + [35 x $3.66] = $263.07**

Licensing Fee for Petroleum Dry Cleaners
Renewal fees for dry cleaners that use petroleum blended solvents are figured by the number of active machines. The calendar year 2003 fee is $38.18 for one machine and $16.29 for each additional machine. These fees are also increased based on the DCPI, with no ceiling.

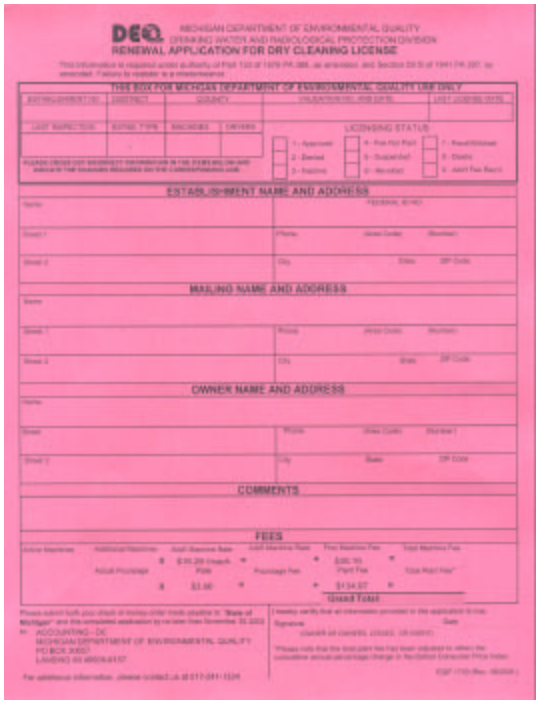

DEQ
RENEWAL APPLICATION FOR DRY CLEANING LICENSE
ESTABLISHMENT NAME AND ADDRESS
MAILING NAME AND ADDRESS
OWNER NAME AND ADDRESS
COMMENTS
FEES

Figure 6-1: Dry Cleaning License Renewal Application

AUDIT QUESTION F1
Is your establishment currently licensed by the DEQ?

☐ **YES**
☐ **NO – Out of Compliance**

6.6 Inspecting Dry Cleaning Equipment

Dry cleaning establishment owners must conduct surveillance checks of each dry cleaning machine and related equipment and perform necessary maintenance in order to prevent unnecessary loss of dry cleaning solvent or solvent vapors. Every time a load of garments is run, look over the equipment to make sure everything is tight and working properly.

It is a good idea for you to make a list of everything that should be checked, starting with the loading door and gasket. Most dry cleaners keep poundage charts; therefore, you may want to use the back of the poundage chart for an inspection list. If you are using transfer equipment, you should have multiple check lists–one for each unit of equipment.

AUDIT QUESTION F2
Do you conduct surveillance checks of your dry cleaning equipment?

☐ **YES**
☐ **NO – Out of Compliance**

Detecting Vapor Leaks

Dry cleaners are encouraged to buy a vapor detection unit. This device will detect vapor leaks as low as a half-ounce loss per year. The unit is sensitive to halogenated vapors, not just perc, so if you are losing refrigerant from your chiller, it will detect that also. It is a durable piece of equipment and only requires battery replacement.

The vapor detector is best suited for dry-to-dry equipment. When utilizing with transfer equipment, the presence of vapors in ambient air is so high that the device will continually be triggered.

AUDIT QUESTION F3
Do you have a vapor detection unit, which is used to detect vapor leaks in your equipment?

☐ **YES**
☐ **NO – Recommended**

6.7 Safety Equipment

Portable Fire Extinguishers
Two portable fire extinguishers with at least a 2a,10bc rating are required and one of those extinguishers must be mounted near the dry cleaning machine in each dry cleaning establishment.

AUDIT QUESTION F4
Are there at least two portable fire extinguishers with at least a 2a,10bc rating at your establishment and is one of those fire extinguishers mounted near the dry cleaning machine?

☐ **YES**
☐ **NO – Out of Compliance**

Respirator
Your dry cleaning establishment must have an approved organic vapor respirator.

The respirator must be:
- ✓ Kept near the dry cleaning machine in a sealed container
- ✓ Properly identified
- ✓ In good working condition
- ✓ Available for immediate use

The chemical specific cartridges for the respirators must be:
- ✓ Approved and used according to the manufacturers specifications
- ✓ Replaced immediately upon noticing an odor penetrating through the mask

AUDIT QUESTION F5
Does your establishment have an approved organic vapor respirator and does that respirator meet the requirements in Section 6.7?

☐ **YES**
☐ **NO – Out of Compliance**

6.8 Where to Go For Help

SUBJECT	**Dry Cleaning Rules, licensing, fees, inspections**
CONTACT	DEQ, Dry Cleaning Program
TELEPHONE	(517) 241-1324
WEB SITE	www.michigan.gov/deq (select "Air," then "Compliance and Enforcement")
SUBJECT	**Dry cleaning education and outreach**
CONTACT	DEQ, Environmental Science and Services Division, Clean Air Assistance Program
TELEPHONE	800-662-9278
WEB SITE	www.michigan.gov/deq (select "Assistance & Support Services" then "Environmental Reporting")
PUBLICATIONS	1. Regulatory Guide for Michigan's Dry Cleaning Industry 2. Air Quality Regulations Affecting Petroleum Dry Cleaning Operations 3. Perchloroethylene Consumption Record 4. Dry-To-Dry Machine Inspection, Monitoring, and Repair Record Form 5. Transfer Machine System Inspection, Monitoring, and Repair Record Forms

Appendices

- **Appendix A: Acronyms**
- **Appendix B: Chemicals Used in Dry Cleaning Operations**
- **Appendix C: DEQ Contacts**

APPENDIX A: Acronyms

AQD ..... Air Quality Division (of DEQ)
AST ..... Aboveground Storage Tank
ASME ..... American Society of Mechanical Engineers
ASTM ..... American Society for Testing and Materials
AWR ..... Annual Wastewater Report
BEA ..... Baseline Environmental Assessment
BTU ..... British Thermal Units
C3 ..... Clean Corporate Citizen Program
CAA ..... Clean Air Act
CAAA ..... Clean Air Act Amendments
CAAP ..... Clean Air Assistance Program (of DEQ, ESSD)
CAP ..... Corrective Action Plan
CAS ..... Chemical Abstract Service
CEPPO ..... Chemical Emergency Preparedness and Prevention Office (EPA)
CERCLA ..... Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also known as Superfund)
CFC ..... Chlorofluorocarbon
CFR ..... Code of Federal Regulations
CIS ..... Michigan Department of Consumer and Industry Services
CNG ..... Compressed Natural Gas
CRT ..... Cathode Ray Tube
CWA ..... Clean Water Act
DEQ ..... Michigan Department of Environmental Quality
EHS ..... Extremely Hazardous Substance
EMS ..... Environmental Management System
EPCRA ..... Emergency Planning and Community Right-To-Know Act
F ..... Fahrenheit
FL/CL ..... Flammable and Combustible Liquids
FP ..... Flashpoint
HAPs ..... Hazardous Air Pollutants
HAZWOPER ..... Hazardous Waste Operations and Emergency Response
IPP ..... Industrial Pretreatment Program
LEPC ..... Local Emergency Planning Commission
LPG ..... Liquefied Petroleum Gas
MAERS ..... Michigan Air Emissions Reporting System
MIOSHA ..... Michigan Occupational Safety and Health Act
MSDS ..... Material Safety Data Sheet
MSP ..... Michigan State Police
MUSTR ..... Michigan Underground Storage Tank Regulations
NAICS ..... North American Industrial Classification System
NESHAP ..... National Emission Standards for Hazardous Air Pollutants
NIOSH ..... National Institute for Occupational Safety and Health
NPDES ..... National Pollutant Discharge Elimination System
NSPS ..... New Source Performance Standards
NRC ..... National Response Center (of the USCG)
OSHA ..... Occupational Safety and Health Administration or Occupational Safety and Health Act

P2 ..... Pollution Prevention
PEAS ..... Pollution Emergency Alerting System
Perc ..... Perchloroethylene
PIPP ..... Pollution Incident Prevention Plan
POTW ..... Publicly Owned Treatment Works
PPE ..... Personal Protective Equipment
PPM ..... Parts Per Million
PTE ..... Potential to Emit
QC ..... Qualified Consultant
RBCA ..... Risk Based Corrective Action
RCRA ..... Resource Conservation and Recovery Act
ROP ..... Renewable Operating Permit
RQ ..... Reportable Quantity
RRD ..... Remediation and Redevelopment Division (of DEQ)
SARA ..... Superfund Amendments and Reauthorization Act of 1986
SIC ..... Standard Industrial Classification Code
SPCC ..... Spill Prevention, Control, and Countermeasures
STU ..... Storage Tank Unit (of DEQ, WHMD)
TCE ..... Tetrachloroethylene
TPQ ..... Threshold Planning Quantity
TQ ..... Threshold Quantity
TSDF ..... Treatment, Storage, and Disposal Facility
USCG ..... United States Coast Guard
US DOT ..... United States Department of Transportation
US EPA ..... United States Environmental Protection Agency
UST ..... Underground Storage Tank
VOC ..... Volatile Organic Compound
WD ..... Water Division (of DEQ)
WHMD ..... Waste and Hazardous Materials Division (of DEQ)

APPENDIX B: Chemicals Used In Dry Cleaning Operations

The following resource was developed for the State Coalition for the Remediation of Drycleaners (SCRD) using material data safety sheets (MSDS) and other sources. The report was prepared by William Linn, Florida Department of Environmental Protection (FDEP) and Chairperson of the SCRD Project Management/Technical Issues Subgroup. Scott Stupak, North Carolina Superfund Section and a member of the Subgroup, provided technical support for database development.

INTRODUCTION

A wide variety of chemical products are and have been used in dry cleaning operations. SCRD has developed this paper and a searchable database that include information about many of these products. These resources are intended to help those engaged in the assessment and remediation of contaminated drycleaner sites and to assist regulators conducting compliance inspections at dry cleaning facilities. This publication and the searchable database can be found on the Internet at: **www.drycleancoalition.org/chemicals/.**

This paper provides current and historical information on the types of chemicals — solvents, other chemicals, pre-cleaning/spotting agents, garment treatments, and solvent and equipment maintenance materials — used in dry cleaning operations. The database provides information on dry cleaning products/trade names (as listed on Material Data Safety Sheets), who manufactures or distributes them, what the products are used for in dry cleaning operations, what chemical ingredients each product contains, the CAS number for each chemical ingredient, any alternate name by which these chemicals are known, and any additional information available.

Chemicals used in dry cleaning operations can be grouped into five broad categories:

- Dry Cleaning Solvents
- Other Chemicals Used In the Dry cleaning Machine
- Pre-cleaning/Spotting Agents
- Garment Treatment Chemicals
- Chemicals Used In Solvent & Equipment Maintenance

DRY CLEANING SOLVENTS

Historically, a number of different chemicals have been utilized as dry cleaning solvents. These include: camphor oil, turpentine spirits, benzene, kerosene, gasoline, petroleum solvents (primarily petroleum naphtha blends), chloroform, carbon tetrachloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloro, 1,1,1-trifluoroethane, propylene glycol ethers, decamethylcylcopentasiloxane and carbon dioxide.

Petroleum Dry Cleaning Solvents

Petroleum-based compounds have been the most widely used solvents in dry cleaning. At the beginning of the twentieth century, gasoline was the dry cleaning solvent of choice in the United States. Because of fires and explosions associated with the use of gasoline, dry cleaning facilities were unable to obtain insurance and many cites banned dry cleaning operations within their city limits. Because of these circumstances, a drycleaner from Atlanta named Joseph Stoddard worked with Lloyd E. Jackson of the Mellon Research Institute and the petroleum refining industry to develop a less volatile petroleum dry cleaning solvent in 1924 which is now known as Stoddard solvent. In 1928, the U.S. Department of Commerce promulgated Commercial Standard CS3-28 which required that petroleum dry cleaning solvents must have a minimum flash point of 100 degrees Fahrenheit. Drycleaners began using Stoddard solvent in 1928 (Martin, 1958). From the late 1920s until the late 1950s Stoddard solvent was the predominant dry cleaning solvent in the United States.

Stoddard solvent is a mixture of petroleum distillate fractions (petroleum naphtha) which is composed of over 200 different compounds. These solvents are composed predominantly of alkanes and cycloalkanes, with some aromatic compounds. Although many people refer to any petroleum dry cleaning solvent as Stoddard solvent, this is incorrect. More properly, Stoddard solvent is a mixture of $C_5 – C_{12}$ petroleum hydrocarbons containing 30 – 50% straight- and branched –chained alkanes, 30 – 40% cycloalkanes, and 10 – 20 % alkyl aromatic compounds (Sciences International). The high aromatic content petroleum solvents are no longer widely used in dry cleaning (Schreiner, 2001).

Since the introduction of Stoddard solvent, the industry trend has been towards the development of higher flash point petroleum dry cleaning solvents including the 140 flash solvents (flash point approximately 140 degrees Fahrenheit), which have a very low aromatics content (generally less than 4%) and most recently, the introduction of the so-called synthetic petroleum dry cleaning solvents - high flashpoint petroleum dry cleaning solvents such as Exxon DF-2000 (flash point 147 degrees Fahrenheit), which contains no aromatic compounds.

Carbon Tetrachloride

Carbon tetrachloride was the first chlorinated solvent used in dry cleaning operations – in the late 1920s. Carbon tetrachloride was commonly blended with other solvents for use as a dry cleaning solvent. Because of its high toxicity and tendency to contribute to machinery corrosion, carbon tetrachloride is no longer used in dry cleaning operations. It was used up to the early 1950s.

Trichloroethylene

In 1930, trichloroethylene (TCE) was introduced as a dry cleaning solvent in the United States (Martin, 1958). TCE causes bleeding of some acetate dyes at temperatures exceeding 75 degrees Fahrenheit. It was never widely used in this country as a primary dry cleaning solvent. TCE is, however, still widely used as a dry-side pre-cleaning and spotting agent.

Perchloroethylene

In 1934, perchloroethylene (PCE) was introduced to the United States as a dry cleaning solvent (Martin, 1958). The superior cleaning ability of PCE, coupled with petroleum shortages during World War II and municipal fire codes prohibiting the use of petroleum solvents in dry cleaning operations resulted in the increasing use of PCE. By the early 1960s, PCE had become the most widely used dry cleaning solvent in the United States.

Dry cleaning-grade PCE is produced in the United States by Dow Chemical (trade name DowPer), Vulcan Chemicals (trade name PerSec), and PPG Industries, Inc. Dry cleaning-grade PCE is also produced by ICI (Ineos Chlor Americas) - trade name Perklone, and exported to the United States. It is estimated that over 80% of the commercial drycleaners in the United States use PCE today (HSIA, 1999).

Perchloroethylene manufacturers claim that dry cleaning grade PCE is 99.9% pure. The impurities are other chlorinated compounds. Perchloroethylene is a very stable solvent and is not normally corrosive. However, in the presence of heat and moisture, acids can form from PCE and cause corrosion problems. The presence of other chlorinated compounds, such as TCA, which has been widely used in spotting agents, can also contribute to acid formation in PCE. To combat this problem stabilizers (acid acceptors) are added to PCE in small quantities (0.05 to 0.2% by volume). Some of the common stabilizers added to dry cleaning-grade PCE are: 4-methylmorpholine, diallylamine, tripropylene, cyclohexene oxide, benzotriazole, and betaethoxypropylnitrile.

Some drycleaners purchase and use reclaimed PCE. This reclaimed solvent has a reported purity of 95 – 99%. Typical impurities in reclaimed PCE are: methyl ethyl ketone, mineral spirits, toluene, 1,1,1-trichloroethane and other chlorinated solvents. A color inhibitor, butylated hydroxytoluene or BHT is added to some reclaimed PCE. Since reclaimed PCE typically does not contain stabilizers, it is often blended by the drycleaner with commercial (stabilized) PCE prior to use.

1,1,2-Trichloro-1,2,2-trifluoroethane

In the late 1960s DuPont began marketing this chlorofluorocarbon (Freon 113) as a dry cleaning solvent. It is known in the dry cleaning industry as Valclene. Since the vapor pressure of Valclene is approximately 20 times that of PCE, clothes cleaned in Valclene can be dried at lower temperatures and it was therefore promoted as the solvent of choice for the dry cleaning of delicate fabrics. Freon 113 is one of the chlorofluorocarbons subject to the Montreal Protocols and is no longer being manufactured in the United States. It was never widely used in dry cleaning and most of the Valclene operations have converted to other solvents.

1,1,1-Trichloroethane

In the early 1980s, Dow Chemical began marketing 1,1,1-trichloroethane (TCA) as a dry cleaning solvent. It was used particularly in leather cleaning operations. Only a few dry cleaning operations ever used TCA as a primary dry cleaning solvent. TCA is not a very stable solvent and there were problems with machine and equipment corrosion. TCA has been used as a pre-cleaning and spotting agent.

RYNEX

Rynex was developed in the late 1990s as an alternative to PCE. It is described as "dipropylene glycol tertiary-butyl ether – DPTB" (US Patent, 2001).

GreenEarth™

GreenEarth is a silicon-based solvent developed in the late 1990s. The chemical name for GreenEarth is decamethylcylcopentasiloxane, a.k.a D5.

PureDry

PureDry was developed by Niran Technologies and was first marketed in 2000. It is described as a "hybrid" solvent and is reportedly composed of $C_9 – C_{12}$ hydrocarbons, hydrofluoroethanes (HFE), and perfluorocarbons. It has a flashpoint of 350 degrees F.

OTHER CHEMICALS USED IN THE DRY CLEANING MACHINE

Detergents

Detergents are used in the dry cleaning process. They perform three different functions:

·carry moisture to aid in the removal of water soluble soils;
·suspend soil after it has been removed from the fabric;
·and act as a spotting agent to penetrate the fabric so that the solvent and water can remove stains.

Based on their charge and how they carry water, there are three classifications of detergents:
·anionic detergents – are negatively charged and carry water by means of solubilization;
·non-anionic detergents - carry no charge and carry water by solubilization;
·cationic detergents – are positively charged and carry water by means of an emulsion. Most cationic detergents are pre-charged with moisture.

Detergents are introduced into the dry cleaning machine by two different systems:

- In charged systems, where detergent is added to the solvent or "charged" as a certain percentage of the solvent (normally 1 to 2%) to maintain a continuous concentration of detergent. Charged systems use anionic detergents. "Pre-charged solvent" (solvents containing the detergent) have been marketed in the industry – particularly for use in coin-operated dry cleaning machines.
- In injection systems, also known as batched detergent injection, solvent is added to the wheel saturating the garments and then detergent is injected into the flow line or into the drum by a pump or dump method. Cationic detergents are used in injection systems.

The earliest dry cleaning detergents were soaps. There were three different types: paste soaps, gel soaps and liquid soaps. Most of these soaps were composed of surfactants, Stoddard

Solvent, free fatty acids and some moisture to create an emulsion. When filtration was first utilized in the dry cleaning process, it was discovered that paste and gel soaps, also known as "true soaps", tended to plug or "slime" the filters, so the soaps became obsolete. The liquid soaps, also known as "filter soaps", sometimes contained a co-solvent such as butyl cellosolve, hexylene glycol, isopropanol, cyclohexanol, ethanolamine or n-butanol, which was used to disperse moisture. By the early 1950s, the industry trend was from liquid soaps to the use of synthetic detergents.

Synthetic detergents are surfactants or mixtures of surfactants with solvents. The following surfactants have been used in commercial dry cleaning detergents: soap-fatty acid mixtures; "mahogany" or petroleum sulfonates; sodium sulfosuccinates; sodium alkylarenesulfonates; amine alkylarenesulfonates; fatty acid esters of sorbitan, etc; ethoxylated alkanolamides; ethoxylated phenols; and ethoxylated phosphate esters (Kirk-Othmer, 1965).

The constituents listed for the dry cleaning detergents included in the spreadsheet include surfactants: phosphate esters, linear alkylbenzenesulfonic acid salt, oxyethylated isononylphenol, diethanolamine, alkearyl sulfonate, sodium sufonate, and sulfosuccinate. They also include dry cleaning solvents and co-solvents that function as carriers. These include perchloroethylene, petroleum solvents and the following cosolvents – butyl cellosolve, hexylene glycol, 2-propanol, isopropyl alcohol, 2-butoxyethanol, diethylene glycol monobutylether, dipropylene glycol monomethylether and glycol ether. The most common solvent contained in the dry cleaning detergent mixtures listed on the spreadsheet is petroleum dry cleaning solvent (petroleum naphtha blends).

Sizing

Sizing is a type of finish used in dry cleaning to impart "body" to a fabric. Sizing is actually applied to fabrics when they are manufactured and is depleted after several fabric cleanings. Most sizing used in dry cleaning operations today is composed of hydrocarbon resins. Alpha methylstyrene was reportedly used in sizing in the past. There are two forms of sizing used in dry cleaning operations - a solid (in a powder or bead form) – and a liquid. The solid form of sizing - the bead form - is commonly used in PCE dry cleaning systems. Most of the liquid sizing used today has a petroleum solvent carrier. It is not uncommon for liquid sizing to contain over 50% petroleum solvent (petroleum naphtha blends) by volume. Anti-static agents and optical brighteners are commonly added to sizing.

Sizing can be applied in three different ways: by a continuous bath in the dry cleaning machine; by dipping garments in a tank of sizing; or by spraying sizing in an aerosol form (generally containing a propane/isobutane carrier) on the garments after they have been drycleaned.

In the continuous bath application method 0.5 to 1.5% charge of sizing is added to the dry cleaning machine. The concentration of sizing used in the dipping method ranges from 1 to 4% (Eisenhauer).

Other Chemicals

Other chemicals used in the dry cleaning machine include: optical brighteners, bactericides, fabric conditioners, and anti-static/anti-lint agents.

Optical brighteners, also known as fluorescent whitening agents, optical bleaches or optical dyes are used to “make white whiter”. These chemicals are normally added to dry cleaning detergents or sizing. Optical brighteners have been widely used in laundry detergents for many years. In recent years, they have been used in dry cleaning.

One of the problems associated with petroleum dry cleaning solvents is biodegradation. Bacteria introduced into the dry cleaning system through the clothing being drycleaned or in water introduced into the system will feed on the petroleum solvent and degrade the petroleum compounds producing “sour smells”. To combat this problem, bactericides or biocides are added to the system, normally in detergents. The biocides used today are reportedly similar to those used in shampoos, laundry products and cosmetics. In the past PCE was added to dry cleaning soaps as a bacterial inhibitor.

Some fabric conditioners are added to the dry cleaning process. These are used primarily to condition or restore luster and shine to suedes, leathers and silks. These products are typically solvent based – petroleum naphtha or perchloroethylene.

Anti-static agents and anti-lint agents (to prevent lint buildup and retention) are available for dry cleaning operations.

PRE-CLEANING/SPOTTING AGENTS

The greatest number and variety of chemicals used in dry cleaning operations are used in pre-cleaning and spotting operations. Prior to being placed in the dry cleaning machine, heavily stained garments are usually pre-cleaned or pre-spotted with cleaning chemicals. The types of chemicals used depend on the type of stain and the type of fabric being cleaned. After they are drycleaned, garments that are still stained or soiled are spot cleaned using the same chemicals as in pre-cleaning. There are three types of pre-cleaning/spotting agents: wet-side agents, dry-side agents and bleaches.

Wet-side Spotting Agents

Wet-side pre-cleaning/spotting agents are used to clean water soluble stains from clothing. Wet-side agents can be subdivided into three different classes: neutral, alkaline, and acidic.

Neutral Wet-Side Agents – Neutral spotting agents include water and neutral synthetic detergents (which contain surfactants). These agents are used to remove water-soluble stains, food, beverages and water-soluble dyes.

Alkaline Wet-Side Agents – Alkaline spotting agents include lye, ammonia, potassium hydroxide, sodium hydroxide and so-called protein formula home detergents. Protein formula detergents contain digester enzymes - Amylase, Cellulase, Lipase and Protease. Digesters can be used to remove: starch, cellulose, fats and oils, and protein stains.

Acidic Wet-Side Agents – Acid agents include acetic acid, hydrofluoric acid, oxalic acid, glycolic acid and sulfuric acid. Tannin or plant-based stains can be removed with wet-side spotting agents (known as tannin formula agents).

Dry-Side Spotting Agents

Dry-side pre-cleaning/spotting agents are used to remove oily-type stains, stains including fats, waxes, grease, cosmetics, paints and plastics. The primary constituents of dry-side agents are non-aqueous solvents and alcohols and include, or have included: perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, methylene chloride, amyl acetate and petroleum solvents. In general, from a contamination and regulatory standpoint, dry-side spotting agents include some of the most toxic chemicals used in dry cleaning operations.

Bleaches

Bleaches are used in stain removal when other spotting techniques have failed to remove a stain. This process is known as "spot bleaching". Bleaches are also used in conventional laundry operations which are conducted at most dry cleaning plants. Bleaches can be classified as either oxidizing or reducing.

Oxidizing Bleaches
- Sodium Perborate
- Hydrogen Peroxide
- Sodium Percarbonate
- Sodium Hypochlorite

Reducing Bleaches
- Sodium Bisulfite
- Sodium Hydrosulfite
- Titanium Sulfate
- Oxalic Acid

GARMENT TREATMENT CHEMICALS

A number of different chemicals are used to treat garments after they are drycleaned. The functions of these chemicals include waterproofing, flame retardants, refurbishing, deodorizing, stain repellents and pest control.

Waterproofing

Waterproofing of garments by the clothing manufacturer is a relatively recent development. Historically, much of garment waterproofing was performed by drycleaners. The water proofing agent was usually a waxed-base product and the predominant carrying agent for waterproofing agents has been nonaqueous solvents – perchloroethylene and petroleum solvents. Several methods have been used to apply the waterproofing agent, including immersion in the waterproofing agent in a dip tank; spraying the waterproofing agent on the garments in a tank; applying the waterproofing agent in the form of an aerosol spray; and in some cases applying the waterproofing agent in an auxiliary tank in a dry cleaning machine (Rising, 1997).

Flame Retardants

Flame retardants are normally applied to garments by the garment manufacturers. However, in the past, some drycleaners have treated or re-treated garments with flame retardants. Some of

the chemicals used in flame retardants include: decabromodiphenyl oxide (DBDPO), organo-phosphates, phosphate salts and phosphated esters. Dry-side application of flame retardants used dry cleaning solvent as the carrying agent. The flame retardant chemicals were applied by immersion or dipping in a tank or by spraying the garment with the flame retardant (IFI, 1995).

Fabric Conditioner

Chemicals are applied to refurbish garments after dry cleaning. Typically, these garments can include suedes, leathers, silks, wools and vinyls. These chemicals are usually applied by spraying the garment (using a spray bottle or aerosol spray). Plasticizers such as di-N-butyl phthalate and di-2-ethylhexyl adipate are used to re-condition vinyl garments.

Stain Repellents

Stain repellents are generally applied by the garment manufacturer, but some drycleaners do apply stain repellents. Historically, these products have been silicone based and the carrying agent has been 1,1,1-trichloroethane (no longer used) or petroleum naphtha (IFI, 1994). Most stain repellents can be applied as an aerosol spray. Scotchgard™ (no longer manufactured) was one of the most commonly used stain/water repellents.

CHEMICALS USED IN SOLVENT & EQUIPMENT MAINTENANCE

Solvent Maintenance & Treatment

From the early part of the twentieth century until the early 1950s, both alkalis and sulfuric acid were used to clarify spent petroleum dry cleaning solvent. The most common alkali used was caustic soda (sodium hydroxide) in a 8-10% solution. The solvent was bubbled through or agitated with the caustic soda solution to help remove soap-fatty acid type detergents. Sulfuric acid was mixed and agitated with the spent solvent and then allowed to settle out (Martin, 1958).

Anti-foaming agents (such as glycol ether acetate) are sometimes added to the distillation unit to prevent contaminants in the spent solvents (pigments, fatty acids, filter powder, detergents water repellents and retexturing agents) from causing excessive foaming during the distillation process.

Chemical agents are sometimes added to prevent the formation of free fatty acids in solvents. Alkaline solutions are also added to buffer destabilized (acidic) perc. Detergents are sometimes added to the system to clean the drum and button trap of the dry cleaning machine.

Filter Maintenance

Trisodium Phosphate was once used to clean tubular (regenerative) filters – used in powder filtration systems. It is doubtful that any of these tubular filters are still being utilized.

Detergent Maintenance

In charged systems, where anionic detergents are used, it is important to maintain a constant detergent concentration. Test kits are utilized to titrate solvent/detergent mixtures to measure the amount of detergent in the system. Chemicals used in these test kits can include: 1,2-dichloroethane, methylene chloride, and chloroform.

Boiler Maintenance

The use of untreated water in a boiler can cause scale buildup and corrosion. Treating the boiler water with chemicals - known as boiler feed water treatment - will increase the life of the boiler and reduce maintenance costs. Scale is formed from calcium and magnesium salts that are carried in solution in the water used in the boiler. Treatment of the boiler water by raising the pH with the addition of alkaline salts – such as sodium or potassium hydroxide – will prohibit most of the calcium and magnesium salts from precipitating and causing scale buildup in the boiler. Sodium sulfite is a constituent of some boiler feed water treatments. This constituent acts as an oxygen scavenger. The presence of oxygen in boiler water will lead to corrosion of the boiler (Faig). A chelating agent, sodium hexametaphosphate is sometimes added to boiler water to inhibit hard water salts from precipitating to form scale. Hydrochloric acid is sometimes utilized in acid boils to remove scale.

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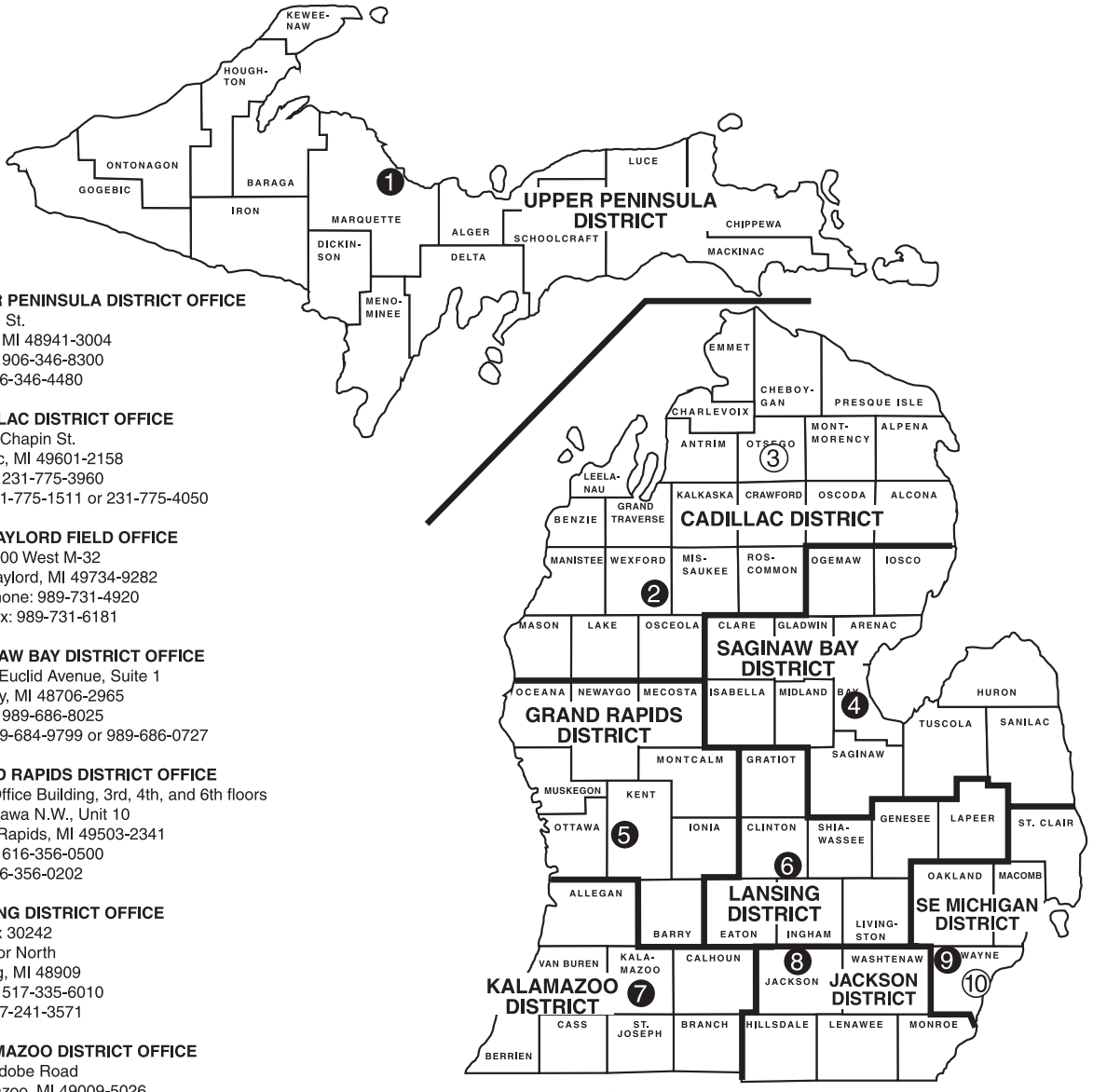
APPENDIX C: DEQ Contact Information



9 denotes district office

10 denotes field office

1 UPPER PENINSULA DISTRICT OFFICE
420 5th St.
Gwinn, MI 48941-3004
Phone: 906-346-8300
Fax: 906-346-4480

2 CADILLAC DISTRICT OFFICE
120 W. Chapin St.
Cadillac, MI 49601-2158
Phone: 231-775-3960
Fax: 231-775-1511 or 231-775-4050

3 GAYLORD FIELD OFFICE
2100 West M-32
Gaylord, MI 49734-9282
Phone: 989-731-4920
Fax: 989-731-6181

4 SAGINAW BAY DISTRICT OFFICE
503 N. Euclid Avenue, Suite 1
Bay City, MI 48706-2965
Phone: 989-686-8025
Fax: 989-684-9799 or 989-686-0727

5 GRAND RAPIDS DISTRICT OFFICE
State Office Building, 3rd, 4th, and 6th floors
350 Ottawa N.W., Unit 10
Grand Rapids, MI 49503-2341
Phone: 616-356-0500
Fax: 616-356-0202

6 LANSING DISTRICT OFFICE
PO Box 30242
4th Floor North
Lansing, MI 48909
Phone: 517-335-6010
Fax: 517-241-3571

7 KALAMAZOO DISTRICT OFFICE
7953 Adobe Road
Kalamazoo, MI 49009-5026
Phone: 269-567-3500
Fax: 269-567-9440

8 JACKSON DISTRICT OFFICE
301 E. Louis Glick Highway
Jackson, MI 49201-1556
Phone: 517-780-7690
Fax: 517-780-7855

9 SOUTHEAST MICHIGAN DISTRICT OFFICE
38980 Seven Mile Road
Livonia, MI 48152-1006
Phone: 734-953-8905
Fax: 734-953-0243 or 734-953-1544

10 DETROIT FIELD OFFICE
Cadillac Place
3058 W. Grand Blvd., Suite.2-300
Detroit, MI 48202-6058
Phone: 313-456-4700
Fax: 313-456-4692 or 313-456-4662

DEQ DISTRICT OFFICES

Upper Peninsula (Entire Upper Peninsula) 420 Fifth Street Gwinn, MI 49841 Phone: 906-346-8300 Fax: 906-346-4480 *Counties: All counties in the upper peninsula*	**Cadillac District (Northwest Lower Peninsula)** 120 W Chapin Street Cadillac, MI 49601-2158 Phone: 231-775-3960 Fax: 231-775-4050 *Counties: Benzie, Grand Traverse, Lake, Leelanau, Manistee, Mason, Missaukee, Osceola, and Wexford*
Gaylord District (Northeast Lower Peninsula) 2100 West M-32 Gaylord, MI 49735 Phone: 989-731-4920 Fax: 989-731-6181 *Counties: Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Crawford, Emmet, Kalkaska, Montmorency, Oscoda, Otsego, Presque Isle, and Roscommon*	**Grand Rapids District (Central West Michigan)** State Office Building, 6th floor 350 Ottawa N W Unit #10 Grand Rapids, MI 49503 Phone: 616-356-0500 Fax: 616-356-0201 *Counties: Barry, Ionia, Kent, Mecosta, Montcalm, Muskegon, Newaygo, Oceana, and Ottawa*
Lansing District (Central Michigan) Constitution Hall, 525 W. Allegan St. Lansing, MI 48909 Phone: 517-335-6010 Fax: 517-241-3571 *Counties: Clinton, Eaton, Genesee, Gratiot, Ingham, Lapeer, Livingston, and Shiawassee*	**Saginaw Bay District (Central East Michigan)** Saginaw Bay District Headquarters 503 N Euclid Avenue Bay City, MI 48706 Phone: 989-686-8025 Fax: 989-684-9799 *Counties: Arenac, Bay, Clare, Gladwin, Huron, Iosco, Isabella, Midland, Ogemaw, Saginaw, Sanilac, and Tuscola*
Kalamazoo District (Southwest Michigan) 7953 Adobe Road Kalamazoo, MI 49009 Phone: 269-567-3500 Fax: 269-567-3555 *Counties: Allegan, Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, and Van Buren*	**Jackson District (South Central Michigan)** State Office Building, 4th Floor 301 E Louis B Glick Highway Jackson, MI 49201 Phone: 517-780-7690 Fax: 517-780-7855 *Counties: Hillsdale, Jackson, Lenawee, Monroe, and Washtenaw*
Southeast Michigan District (Southeast Michigan) Southeast Michigan District Headquarters 38980 Seven Mile Road Livonia, MI 48152 Phone: 734-953-1449 Fax: 734-432-1278 *Counties: Macomb, Oakland, St. Clair, and Wayne*	**Detroit Office (East Michigan)** Cadillac Place, Suite 2-300 3058 West Grand Blvd. Detroit, MI 48202-6058 Phone: 313-456-4700 Fax: 313-456-4662 *Counties: Wayne (City of Detroit)*