3rd Edition

Environmental Guide for Small Businesses in Minnesota

Small Business Environmental Assistance Program

Minnesota Pollution Control Agency

CONTENTS

Introduction v

Hazardous Waste 1

Air Quality 17

Water Quality 33

Storage Tanks 47

Cleanup and Remediation 59

Emergency and Pollution Prevention Planning 71

Occupational Safety and Health Administration (OSHA) 87

Agriculture 107

Financial Assistance 113

Assistance Providers 123

Index 137

Cover Photo: IStock

Third edition, August 2007; Second edition, May 2003; First edition, August 1999.

50% Post-consumer waste paper.
Processed chlorine-free paper.

QUESTION 4: DOES YOUR BUSINESS WORK WITH OIL-CONTAINING EQUIPMENT OR FLUORESCENT LIGHT BALLASTS THAT CONTAIN POLYCHLORINATED BIPHENYLS (PCBS)?

Wastes containing PCBs at a concentration of 50 parts per million (ppm) or more are hazardous. Ballasts from old light fixtures may contain PCBs.

Review your answers to questions 1 through 4. If you answered 'no' to question 1 or 'yes' to questions 2, 3, or 4, you probably generate hazardous waste. Continue to the next step.

If you determine your facility does not generate any hazardous wastes, you are not subject to hazardous waste regulations. If your facility's operations change, you must re-evaluate to determine whether any new wastes are hazardous.

STEP 1B: Determine your generator size

To figure out which hazardous waste requirements apply to your facility, first determine how much waste your facility generates. Remember, exempted wastes are not counted when determining generator size. The table below will help determine your facility's generator size.

If your facility generates:	Then your facility's size is:
220 pounds of hazardous waste or less per month (about one-half a 55-gallon drum of liquid waste)	VSQG (Very Small Quantity Generator)
More than 220 pounds but less than 2,200 pounds of hazardous waste per month (about one-half to four 55-gallon drums of liquid waste)	SQG (Small Quantity Generator)
2,200 pounds or more of hazardous waste per month (four or more 55-gallon drums of liquid waste)	LQG (Large Quantity Generator)

Remember, the less waste generated, the fewer the requirements.

STEP 2: Obtain a Hazardous Waste Identification Number

Hazardous Waste ID numbers (formerly called EPA ID numbers) are each assigned to a specific location and are used for tracking where wastes are generated and where they are disposed of. If you have more than one facility, you will need a number for each location. There is no charge to obtain a number. You may not ship wastes legally without an ID number. In certain cases, VSQGs may not need an ID number; see the VSQG drop-off site information in Step 6.

A

75070	Acetaldehyde
60355	Acetamide
75058	Acetonitrile
98862	Acetophenone
53963	2-Acetylaminofluorene
107028	Acrolein
79061	Acrylamide
79107	Acrylic acid
107131	Acrylonitrile
107051	Allyl chloride
92671	4-Aminobiphenyl
62533	Aniline
90040	o-Anisidine
1332214	Asbestos

B

71432	Benzene
92875	Benzidine
98077	Benzotrichloride
100447	Benzyl chloride
92524	Biphenyl
117817	Bis (2-ethylhexyl) phthalate (DEHP)
542881	Bis (chloromethyl) ether
75252	Bromoform
106990	1,3-Butadiene

C

156627	Calcium cyanamide
133062	Captan
63252	Carbaryl
75150	Carbon disulfide
56235	Carbon tetrachloride
463581	Carbonyl sulfide
120809	Catechol
133904	Chloramben
57749	Chlordane
7782505	Chlorine
79118	Chloroacetic acid
532274	2-Chloroacetophenone
108907	Chlorobenzene
510156	Chlorobenzilate
67663	Chloroform
107302	Chloromethyl methyl ether
126998	Chloroprene
1319773	Cresols/Cresylic acid (isomers and mixtures)
95487	o-Cresol
108394	m-Cresol
106445	p-Cresol
98828	Cumene

D

94757	2,4-D, salts and esters
3547044	DDE
334883	Diazomethane
132649	Dibenzofurans
96128	1,2-Dibromo-3-chloropropane
84742	Dibutylphthalate
106467	1,4-Dichlorobenzene(p)
91941	3,3-Dichlorobenzidene
111444	Dichloroethyl ether (Bis (2-chloroethyl) ether)

542756	1,3-Dichloropropene
62737	Dichlorvos
111422	Diethanolamine
121697	N,N-Dimethylaniline
64675	Diethyl sulfate
119904	3,3-Dimethoxybenzidine
60117	Dimethyl aminoazobenzene
119937	3,3-Dimethyl benzidine
79447	Dimethyl carbamoyl chloride
68122	Dimethyl formamide
57147	1,1 Dimethyl hydrazine
131113	Dimethyl phthalate
77781	Dimethyl sulfate
534521	4,6-Dinitro-o-cresol, and salts
51285	2,4-Dinitrophenol
121142	2,4-Dinitrotoluene
123911	1,4-Dioxane (1,4-Diethyleneoxide)
122667	1,2-Diphenylhydrazine

E

106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
106887	1,2-Epoxybutane
140885	Ethyl acrylate
100414	Ethyl benzene
51796	Ethyl carbamate (Urethane)
75003	Ethyl chloride (Chloroethane)
106934	Ethylene dibromide (Dibromoethane)
107062	Ethylene dichloride (1,2-Dichloroethane)
107211	Ethylene glycol
151564	Ethylene imine (Aziridine)
75218	Ethylene oxide
96457	Ethylene thiourea
75343	Ethylidene dichloride (1,1-Dichloroethane)

F

50000	Formaldehyde

H

76448	Heptacholor
118741	Hexachlorobenzene
87683	Hexachlorobutadiene
77474	Hexachlorocyclopentadiene
67721	Hexachloroethane
822060	Hexamethylene-1,6-diisocyanate
680319	Hexamethylphosphoramide
110543	Hexane
302012	Hydrazine
7647010	Hydrochloric acid
7664393	Hydrogen fluoride (hydrofluoric acid)
123319	Hydroquinone

I

78591	Isophorone

L

58899	Lindane (all isomers)

M

108316	Maleic anhydride
67561	Methanol
72435	Methoxychlor
74839	Methyl bromide (Bromomethane)
74873	Methyl chloride (Chloromethane)
71556	Methyl chloroform (1,1,1-Trichoroethane)
78933	Methyl ethyl ketone (2-Butanone)
60344	Methyl hydrazine
74884	Methyl iodide (Iodomethane)
108101	Methyl isobutyl ketone (Hexone)
624839	Methyl isocyanate
80626	Methyl methacrylate
1634044	Methyl tert butyl ether
101144	4,4-Methylene bis (2-chloroaniline)
75092	Methylene chloride (Dichloromethane)
101688	Methylene diphenyl diisocyanate (MDI)
101779	4,4-Methylenedianiline

N

91203	Naphthalene
98953	Nitrobenzene
92933	4-Nitrobiphenyl
100027	4-Nitrophenol
79469	2-Nitropropane
684935	N-Nitroso-N-methylurea
62759	N-Nitrosodimethylamine
59892	N-Nitrosomorpholine

P

56382	Parathion
82688	Pentachloronitrobenzene (Quintobenzene)
87865	Pentachlorophenol
108952	Phenol
106503	p-Phenylenediamine
75445	Phosgene
7803512	Phosphine
7723140	Phosphorus
85449	Phthalic anhydride
1336363	Polychlorinated biphenyls (aroclors)
1120714	1,3-Propane sultone
57578	beta-Propiolactone
123386	Propionaldehyde
114261	Propoxur (Baygon)
78875	Propylene dichloride (1,2-Dichloropropane)
75569	Propylene oxide
75558	1,2-Propylenimine (2-Methyl aziridine)

Q

91225	Quinoline
106514	Quinone

S

100425	Styrene
96093	Styrene oxide

T

1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin

79345	1,1,2,2-Tetrachloroethane
127184	Tetrachloroethylene (Perchloroethylene)
7550450	Titanium tetrachloride
108883	Toluene
95807	2,4-Toluene diamine
584849	2,4-Toluene diisocyanate
95534	o-Toluidine
8001352	Toxaphene (chlorinated camphene)
120821	1,2,4-Trichlorobenzene
79005	1,1,2-Trichloroethane
79016	Trichloroethylene
95954	2,4,5-Trichlorophenol
88062	2,4,6-Trichlorophenol
121448	Triethylamine
1582098	Trifluralin
540841	2,2,4-Trimethylpentane

V

108054	Vinyl acetate
593602	Vinyl bromide
75014	Vinyl chloride
75354	Vinylidene chloride (1,1-Dichloroethylene)

X

1330207	Xylenes (isomers and mixtures)
95476	o-Xylenes
108383	m-Xylenes
106423	p-Xylenes

COMPOUNDS

Antimony compounds

Arsenic compounds (inorganic including arsine)

Beryllium compounds

Cadmium compounds

Chromium compounds

Cobalt compounds

Coke oven emissions

Cyanide compounds

Glycol ethers

Lead compounds

Manganese compounds

Mercury compounds

Mineral fibers

Nickel compounds

Polycyclic organic matter

Radionuclides

Selenium compou

TABLE 1: CATEGORICAL PRETREATMENT STANDARDS

Categorical Standards	Regulation 40 CFR #
Aluminum Forming	467
Battery Manufacturing	461
Centralized Waste Treatment	437
Coil Coating	465
Copper Forming	468
Electrical & Electronic Components	469
Electroplating	413
Incinerators	444
Inorganic Chemicals Manufacturing	415
Iron & Steel Manufacturing	420
Landfills	445
Leather Tanning and Finishing	425
Metal Finishing	433
Metal Molding and Casting	464
Nonferrous Metal Forming	471
Nonferrous Metal Manufacturing	421
Organic Chemicals, Plastics & Synthetic Fibers Manufacturing	414
Pesticide Manufacturing	455
Petroleum Refining	419
Pharmaceutical Manufacturing	439
Porcelain Enameling	466
Pulp, Paper and Paperboard Manufacturing	430
Builder's Paper &Board Mills	431
Steam Electric Power Generating	423
Timber Products Processing	429
Transportation Equipment Cleaning	442

TABLE 2

Business Type or Activity	SIC Code
Metal Mining	10XX
Coal Mining	12XX
Oil and Gas Extraction	13XX
Mining and Quarrying of Nonmetallic Minerals (except fuels)	14XX
Food and Kindred Products	20XX
Tobacco Products	21XX
Textile Mill Products	22XX
Apparel and Other Finished Products Made from Fabrics and Similar Materials	23XX
Lumber and Wood Products	24XX
Furniture and Fixtures	25XX
Printing, Publishing and Allied Industries	27XX
Chemicals and Allied Products	28XX
Petroleum Refining and Related Industries	29XX
Rubber and Miscellaneous Plastic Products	30XX
Leather and Leather Products	31XX
Stone, Clay, Glass and Concrete Products	32XX
Primary Metal Industries	33XX
Fabricated Metal Products except Machinery and Transportation Equipment	34XX
Industrial and Commercial Machinery and Computer Equipment	35XX
Electronic and other Electrical Equipment and Components (except Computer Equipment)	36XX
Transportation Equipment	37XX
Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; and Watches and Clocks	38XX
Miscellaneous Manufacturing Industries	39XX
Transportation Activities 4011- 4581 (see website for details)	
Durable Goods	50XX

STEP 2A: Certify a condition of no exposure

Even if your facility is described in table 2, you may not be required to receive permit coverage. All industrial categories, except construction, may opt out of the permit if all industrial materials and activities are entirely sheltered from stormwater. The Certification of Conditional No Exposure is a simple way of complying with the Clean Water Act. There are no fees for this certification.

A facility is eligible for no exposure if none of the following materials or activities are exposed to precipitation or stormwater runoff now or in the foreseeable future:

Tanks

Cleanup & Remediation

VOLUNTARY INVESTIGATION AND CLEANUP (VIC) PROGRAM

The impetus behind the Land Recycling Act, which established the VIC Program, came from the requirements of property transactions, including quicker regulatory turnaround and the need to resolve liability issues. The VIC Program encourages cooperative relationships with responsible or voluntary parties. This allows for a streamlined regulatory approach to cleaning up sites to the same level of protection required by Superfund. For VIC cleanups, the same cleanup standards must be met in order to receive final approval from the MPCA, but some tasks and issues associated with Superfund are avoided.

The VIC Program uses a decision framework similar to that of Superfund. A Phase I Investigation is conducted to record current and historical activities and potential environmental impacts at the site. The results of a Phase I Investigation are used to develop a Work Plan for a quantitative Phase II Investigation, during which actual impact is measured.

Sometimes an investigation warrants immediate action, such as removal of waste-filled barrels to minimize risk. Most sites do not require immediate action. However, if there is a risk to human health and the environment, a Response Action Plan is proposed.

Remedies implemented to mitigate contamination or a threatened release may involve cleanup of the contamination, developing and maintaining measures to control human and environmental exposure as well as long-term monitoring. A Contingency Plan and Safety Plan is prepared to ensure proper implementation of the remedies and to provide emergency action protocols to follow. Finally, a Response Action Plan Implementation Report is submitted, documenting that cleanup goals have been met.

Written liability assurances from the VIC Program can be issued at various points in the process and may or may not mark closure of the site file. Typically, when cleanup goals are achieved and an environmental assurance issued, the site file is considered closed. However, assurances may include conditions under which the site may be reopened. For example, sites may be reopened if additional evidence of environmental contamination or threat to the public becomes apparent.

POSSIBLE VIC ASSURANCES AND LETTERS

These assistance letters are provided when a voluntary party asks the MPCA for an opinion about the adequacy of an investigation or cleanup plan. Such opinions are requested when an objective third-party opinion is desired for purposes other than receiving administrative or legal assurances.

PETROLEUM BROWNFIELDS PROGRAM (PBP)

The Petroleum Brownfields Program (PBP) provides technical assistance and liability assurances. Participation in the program is voluntary, but volunteers are expected to meet the same level of investigation and, when necessary, remediation requirements of the Petroleum Remediation Program. Services available through PBP are listed below.

TECHNICAL ASSISTANCE

Expedited review of petroleum contamination investigations and cleanups

Transfer or financing property with petroleum contamination originating from an on-site storage tank often hinges on MPCA approval of corrective actions required under the Petroleum Tank Release Cleanup Act (Minn. Stat. 115C). Because time is often of the essence, the PBP Program offers an expedited review of the reports required. PBP staff will make every effort to respond within 30 days from the receipt of a report. For many properties, quicker review can lead to quicker corrective-action approval and/or file closure.

PBP staff can review investigation and corrective actions for petroleum contamination that did not originate from an on-site storage tank. PBP staff will close the site file when they conclude that investigation and/or cleanup has adequately addressed the contamination. Obtaining file closure can be vital to the sale of these petroleum nontank release sites.

Review of development response action plans

Even after cleanup or MPCA file closure, most properties still have some contamination remaining. State law requires that persons properly manage contaminated soil and water they uncover or disturb, even if they are not the party responsible for contamination.

Owners of property where contaminated soil or water might be encountered must include provisions called “response actions” in development plans, for management of contaminated soil or water. For some properties, actions may be needed to prevent further spreading of the contamination or to prevent vapors from entering buildings or utility access shafts. MPCA can approve proposed response actions. By obtaining MPCA approval, property owners, purchasers, developers and lenders can be reasonably confident of what is required if contamination is uncovered. In addition, cost-saving measures can be approved, such as using contaminated soil on-site as “controlled fill.”

Liability Assurance Letters

Lenders, mortgagors or purchasers often require assurance to demonstrate they are not responsible for contamination at a property. PBP staff can issue several types of letter that confirm this. These letters also cover successive purchasers of the property, as long as they were not in some way responsible or involved with the original release.

Occupational Safety & Health

management will be established, measured, and maintained." The AWAIR program must be supported by all levels of the company to be effective.

STEP 4: Determine methods used to identify, analyze, and control new or existing hazards, conditions, and operations.

Hazard recognition and control is another key component of a comprehensive safety and health program. Certain hazards can be identified because they are common throughout an industry (e.g., ergonomics in meat packing plants or bloodborne pathogens in health care settings) or to a process (e.g., noise, oil mist and amputation in many metalworking operations). Other hazards are specific to a particular workplace (e.g., blocked aisles or fire doors).

Once hazards are identified, they must be analyzed to determine feasible, cost-effect control measures. Methods used to control or eliminate hazards include engineering controls (e.g., ventilation or machine guarding), work practices (i.g., proper job procedures), administrative controls (e.g., job rotation) and, as a last resort, personal protective equipment. All personnel should be aware of the possible hazards of work assignments and be able to take proper precautions to guard against injury and illness.

The written AWAIR program must discuss how the facility identifies and abates hazards, and should discuss the specific hazards to the facility and how they are controlled.

STEP 5: Communicate the AWAIR program to employees

Employees must be informed about existing hazards on their jobs and how to control them. Communication usually refers to formal training but can also include on-the-job training, posters, newsletters, manuals, interaction with safety-committee members and other tools. Because individuals learn differently and some employees may have limited English-speaking or reading abilities, it is important to use a variety of communication techniques. A written AWAIR program must include a description of the various methods used to communicate safety and health hazard information to employees.

STEP 6: Develop procedures for investigating accidents and taking corrective action

Both accidents and near-misses should be investigated to determine causes and to determine how to keep the incident from happening again. A consistent procedure should be established and documented in the written AWAIR program.

STEP 7: Clarify how safe work practices and rules will be enforced

Safe work practices are worthless if employees do not use them. The AWAIR Act requires that employers establish written enforcement procedures for safe work practices and compliance with the employer's safety rules.

STEP 8: Review the written AWAIR program annually

The AWAIR Act requires that employers review programs at least annually to determine how the program is actually operating. Results of this review must be documented. If procedures are not being followed, or if an employer is not making progress towards its occupational safety and health goals, the program or implementation should be revised.

Agriculture

Financial Assistance

Assistance Providers

Index