

Hint:

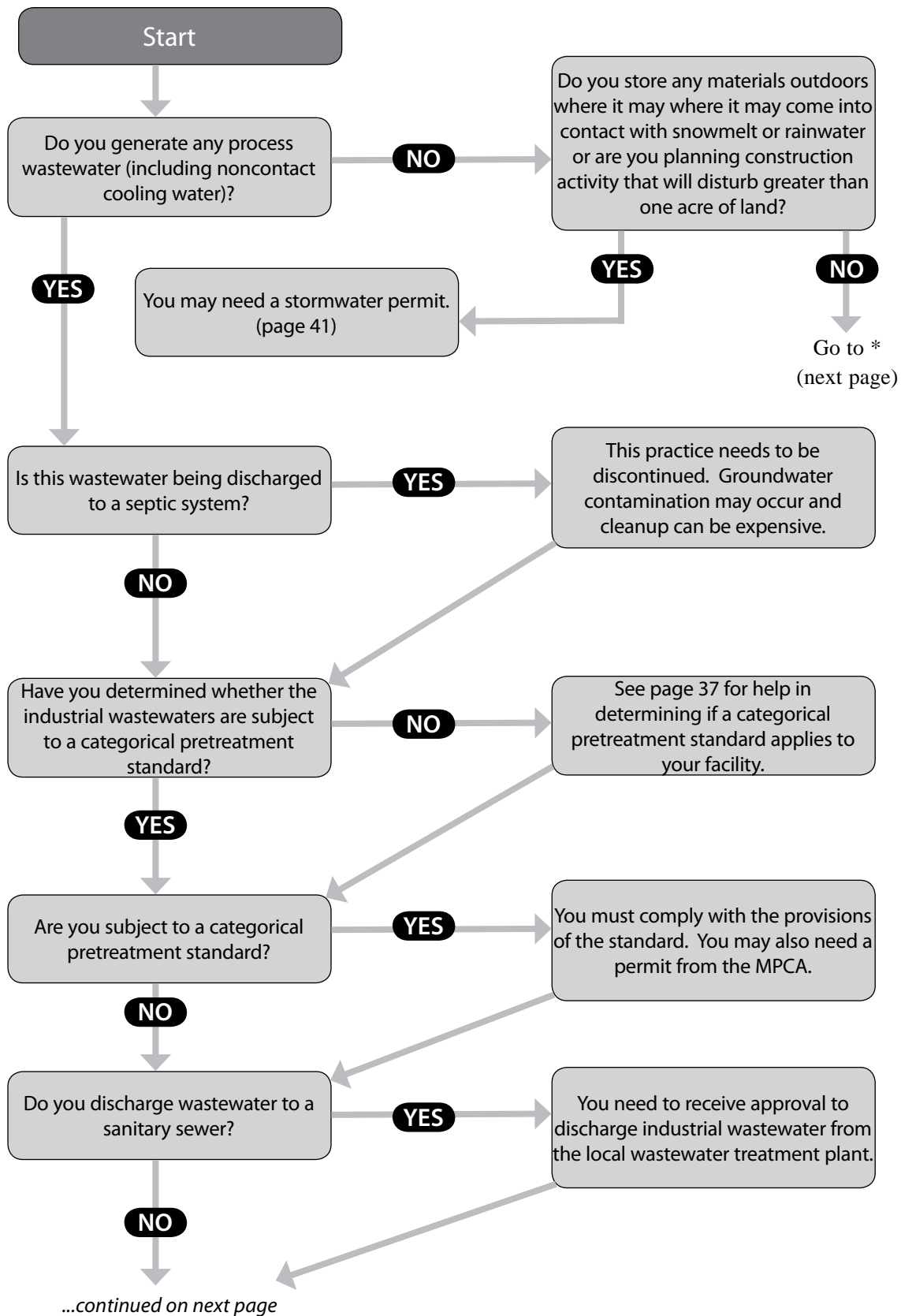
Keep materials off the floor and away from drains. Low- or non-phosphorus products should be used for cleaning and sanitizing. When dealing with wastewater, equipment is available to help recover process materials or to help reduce the volume of wastewater that needs to be treated as hazardous waste. Select equipment to meet your specific goals, such as lowering overall treatment cost per liter or better removal of specific contaminants.

<http://mntap.umn.edu/water>

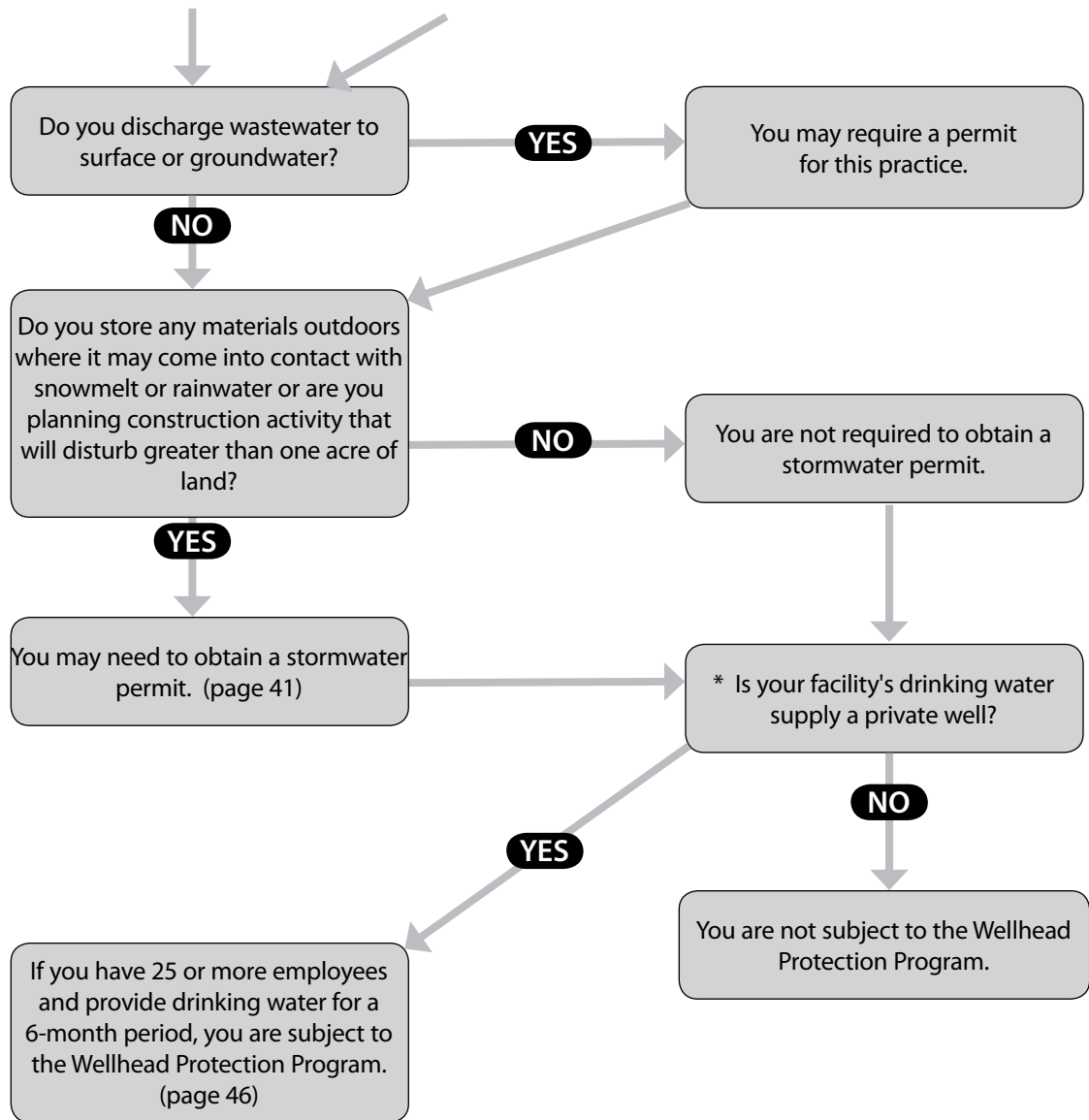
Sunny Fresh Foods changed its cleaning and sanitizing chemicals to low- or no phosphorus products. As a result of the change, phosphorus in the company's wastewater effluent was reduced 80 percent.

- MnTAP Source newsletter, 2006 issue 2

<http://mntap.umn.edu/source/2006-2/sunnyfresh.htm>



WATER QUALITY



Industrial wastewater is any wastewater generated from an industrial process. Wash water, rinse water, spent baths and cooling water are all examples of industrial wastewater. Depending on what your business generates and how you dispose of the wastewater, you may be affected by a number of water quality regulations.

The storage of materials outdoors may be regulated under the General Stormwater Permit Program for Industrial Activity. Construction activities that disturb more than one acre of land may be regulated under the Construction Stormwater Permit. These regulations will be discussed in this chapter.

For additional information on water quality regulations:

Septic Systems..... (651) 282-6246

Pretreatment Standards (651) 296-8006

Water Quality Discharge Permits..... (651) 296-6300

Industrial and Construction

Stormwater Permits

Minnesota Pollution Control Agency (MPCA) at **(651) 296-6300 or (800) 657-3864**

- If your business has 100 or fewer employees, call the MPCA's Small Business Assistance Program at **(651)282-6143 or (800)657-3938**

One other water quality program that could affect small manufacturers is the Wellhead Protection Program. This program is administered by the Minnesota Department of Health. For more information, call the Department of Health at (651) 201-4700.

INDUSTRIAL WASTEWATER

STEP 1: Inventory waste streams

In order to determine which water quality regulations affect your facility, first inventory the places water is used in your processes and whether industrial wastewater is generated. Even cooling water should be included in the inventory.

Knowing where wastewater is generated is important in determining both the best disposal method and what regulations apply.

STEP 2: Determine whether specific standards apply

The EPA has regulations called Categorical Pretreatment Standards that regulate wastewater coming from specific processes. Industries performing any of the processes listed in Table 1 are likely to be subject to one or more categorical pretreatment standard. The most current list can be found at www.pca.state.mn.us/programs/pubs/sbap-ncps.pdf.

WATER QUALITY

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

If your business generates any wastewater from the processes listed in Table 1, you must determine whether you are subject to the pretreatment standard. For information on the standard, call the MPCA at (651) 296-8006.

STEP 3: Determine where to discharge wastewaters

DISPOSAL TO SEPTIC TANKS

Industrial wastewaters cannot be discharged to a septic system (individual sewage treatment system or ISTS). Septic systems are designed to handle kitchen and bathroom wastewater, not industrial wastewater. Industrial wastewater discharged to a septic system may lead to groundwater contamination that can be expensive and difficult to clean up.

An alternative is to dispose of the wastewater at a local wastewater treatment plant.

Wastewater is collected in a tank, pumped out periodically and transported to a drop-off point in the sanitary sewer district or at the treatment plant. Companies that pump out septic systems usually provide a pumping and transporting service for industrial wastewater. **Prior to discharging any material, you must receive approval from the local wastewater treatment plant.** If the wastewater is covered by a categorical pretreatment standard, you may also be required to obtain a permit from the MPCA.

If you need assistance in finding a wastewater treatment plant to process industrial wastewater or you need information on permits, call the MPCA at (651) 282-6246 or visit www.pca.state.mn.us/water/permits. Small amounts of wastewater (less than 10 gallons per day) may be evaporated provided it does not contain any hazardous material (e.g., chromium, solvents) or is not covered by a categorical pretreatment standard.

DISCHARGE TO A SANITARY SEWER

Discharge of industrial wastewater to a sanitary sewer requires approval of the local wastewater treatment plant. If you are subject to a categorical pretreatment standard (see Step 2), you may also need a permit from the MPCA.

Since industrial wastewater can have characteristics that are very different from household wastewater, you may be required to treat your industrial wastewater streams prior to discharge. This process is generally known as “pretreatment” and can be required on any waste streams, not just those subject to a categorical pretreatment standard. Pretreatment may involve: many things, some examples are:

- neutralizing the pH of acidic or basic waste streams
- removing toxic metals (e.g., lead, chrome, copper, arsenic)
- reducing high-strength or concentrated wastes (e.g., food-processing or rendering wastes)
- reducing temperature

You may be required to periodically analyze the industrial wastewater you discharge to ensure compliance with standards. Local wastewater treatment plants may assess an extra charge for waste that requires more treatment than normal domestic sewage.

WATER QUALITY

DISCHARGE TO SURFACE WATER OR GROUND WATER

Discharging industrial wastewater to surface water (e.g., lake, stream, storm sewer) or ground water requires a permit. This includes noncontact cooling water discharged to a storm drain or wastewater applied to land.

These permits are known as NPDES/SDS (National Pollutant Discharge Elimination System/State Disposal System) permits and are issued by the MPCA. Storage or transfer of materials and products outdoors is also covered under a general permit, which is described in the stormwater program section of this chapter.



Pretreatment, as previously described, removes pollutants that could interfere with the operations of a wastewater treatment plant. Additional treatment steps are generally necessary in order to discharge to surface or ground water. Discharge standards vary in different locations in order to best protect the local environment.

Information needed for an NPDES/SDS permit includes:

- characterize the wastewater streams generated (e.g., pH, solids, oxygen demand, toxic chemicals)
- define how materials will be treated
- define design flow, discharge duration and frequency.

The permit requires that you test the wastewater periodically to ensure compliance with standards, submit a monitoring report to the MPCA and pay annual permit fees.

For more information on septic systems, pretreatment standards or discharge permits, call the MPCA or visit www.pca.state.mn.us/water/pubs/8_01.pdf.

STORMWATER PROGRAM

If materials and products are stored outdoors where potential stormwater (rainwater or snowmelt) contact exists, you may be required to obtain coverage under the industrial stormwater program.

If you are planning construction activity that will disturb more than one acre of land, you may be required to obtain a construction permit. More information can be found starting on page 45.

INDUSTRIAL STORMWATER PROGRAM

STEP 1: Determine whether the program applies to your business

Facilities with certain primary activities and/or SIC codes need industrial stormwater permits or to certify a condition of no exposure.

Primary Activities include:

- hazardous waste treatment, storage, or disposal facilities
- landfills (active, inactive, or closed)
- steam electric power generating facilities
- wastewater treatment facilities
- facilities involved in recycling of material
- transportation activities

A list of the type of manufacturers and activities regulated by the Industrial Stormwater Program is shown in Table 2. Visit www.pca.state.mn.us/water/stormwater/sw-sic.pdf for a complete list of affected sources and activities.

The image shows a form titled "Application for a National Pollutant Discharge Elimination System (NPDES) State Disposal System (SDS) Storm Water Permit for Industrial Activity (Mn Ch 41002)". The form is from the Minnesota Pollution Control Agency. It includes sections for "Name and Ownership Information", "NPDES Permit Information", and a section for the applicant to provide information about the facility and its activities. The form is a standard application form for industrial stormwater permits.

WATER QUALITY

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:

- Using, storing, or cleaning industrial machinery or equipment, and areas where residuals from using, storing, or cleaning industrial machinery or equipment remain and are exposed to storm water.
- Materials or residuals on the ground or in storm water inlets from spills or leaks.
- Materials or products from past industrial activity.
- Material handling equipment (except adequately maintained vehicles).
- Materials or products during loading, unloading, or transporting activities.
- Materials or products stored outdoors (except final products intended for outside use, such as new cars, where exposure to storm water does not result in the discharge of pollutants).
- Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers.
- Materials or products handled or stored on roads or railways owned or maintained by the discharger.
- Waste material (except waste in covered non-leaking containers like a covered dumpster).
- Application or disposal of process wastewater (unless otherwise permitted).
- Particulate matter or visible deposits of residuals from roof stacks and/or vents not otherwise regulated (i.e. under an air quality control permit) and evident in the storm water outflow.

Submit written Certification that the facility meets the definition of “no exposure” to the MPCA once every 5 years using the General Stormwater Permit Application for Industrial Activity. Prior to the expiration of your permit.

Failure to maintain the condition of no exposure or obtain coverage under a Stormwater Discharge Permit (see Step 2B) can lead to the unauthorized discharge of pollutants to water, resulting in penalties under the Clean Water Act.

STEP 2B: Apply for an industrial stormwater permit

All facilities described in Table 2 that do not certify a condition of no exposure (see STEP 2A) must obtain coverage under a General Industrial Stormwater Permit (or an individual National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit.) Information you need to complete the permit application includes:

- Legal description of the property from the Public Land Survey (township, range and quarter section).
- Nearest body of water that receives stormwater or snowmelt (e.g., lake, river, stream or wetland).
- Permit numbers for all other permits from the MPCA.
- Discharge point for any noncontact cooling water and/or process wastewater used at the facility.

Companies required to obtain coverage must develop a stormwater pollution prevention plan before submitting an application to the MPCA.

If you are required to receive permit coverage, an annual \$400 fee is charged.

STEP 2B (cont.): Develop a stormwater pollution-prevention plan

The stormwater permit requires you to develop a stormwater pollution prevention plan. The goal of the plan is to eliminate or minimize stormwater or snowmelt runoff from carrying contaminants into surface waters. The plan needs to include the following:

- A drainage map of your site.
- An inventory of significant materials that can include:
 - raw materials (e.g., petroleum products, stockpiled sand, detergents, plastic pellets, coal, salt, fuels, solvents)
 - byproducts/intermediate products (e.g., sawdust, recycled blacktop, taconite or gravel byproduct)
 - finished materials (e.g., scrap metal, motor vehicle parts, old process equipment, taconite pellets)
 - waste materials (e.g., ash, sludge, slag, liquid wastes)
 - hazardous substances (e.g., solvents, reactive chemicals, toxic substances)
 - chemicals regulated under the emergency response program.
- A site evaluation for exposure of significant materials to stormwater and snow melt.
- A description of appropriate best management practices that will be implemented at the facility. Best management practice from the following categories should be considered and one or more should be incorporated if significant materials are exposed:
 - Source Reduction (e.g., move materials indoors or cover, clean-up old equipment yards, train employees on proper handling of materials)
 - Diversion (e.g., use curbing, berms, sewers to divert stormwater away from exposed materials)
 - Treatment (e.g., use oil/water separators, stormwater retention ponds, vegetated swales)
- An evaluation of discharge conveyances from the site (storm sewers, pipes, tile lines, ditches, floor drains, covered sewer inlets and other drainage mechanisms) to determine whether liquids other than stormwater or snowmelt are being discharged from these devices.
- A preventive maintenance program for any stormwater-management device, such as oil/water separators or catch basins.
- Procedures for spills-prevention and -response.
- Program for training employees on components and goals of the plan.
- List of personnel responsible for managing and implementing the pollution prevention plan.

STEP 2B (cont.): Other permit conditions

Submit an annual report. Report forms are sent to you by the MPCA each January and are due back to the MPCA by March 31.

Pay an annual fee of \$400. Invoices will be sent to you approximately March 31st and payment is due approximately May 16th (check mailings for exact dates).

Complete the Transfer/Modification form if there are any administrative changes to the facility. If your business moves, the existing permit should be terminated and you should apply for a new permit at the new site.

Reapply every 5 years for a new permit 180 days before the expiration date listed on the existing permit. Prior to the expiration of your permit, the MPCA will mail you a reminder to reapply. Failure to maintain the condition of no exposure or obtain coverage under the Industrial Stormwater General Permit can lead to the unauthorized discharge of pollutants to water, resulting in penalties under the Clean Water Act.

Reapply every 5 years for a new permit 180 days before the expiration date listed on the existing permit. Prior to the expiration of your permit, the MPCA will mail you a reminder to reapply.

Failure to maintain the condition of no exposure or obtain coverage under the Industrial Stormwater General Permit can lead to the unauthorized discharge of pollutants to water, resulting in penalties under the Clean Water Act.

CONSTRUCTION STORMWATER PROGRAM

Uncontrolled runoff from construction sites is a water quality concern because of the devastating effects that sedimentation and other pollutants can have on our lakes, rivers, streams, and wetlands.

If you plan to have construction activities that disturbs one or more acres of land, or the activity is part of a common plan of development or sale that disturbs one or more acres of land, you are required to obtain coverage under the Construction Stormwater Permit.

The Construction Stormwater Program requires:

- The development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) with appropriate Best Management Practices (BMPs) to minimize the discharge of pollutants from the site.
- Submission of a Notice of Termination (NOT) when final stabilization of the site has been achieved as defined in the permit or when another operator has assumed control of the site.

The following practices have shown to be efficient, cost effective, and versatile for construction site operators to implement. The practices are divided into two categories: nonstructural and structural.

WATER QUALITY

DEFINITIONS

Construction activities can include road building, construction of residential houses, office building, industrial sites, or demolition.

Land disturbance means exposed soil due to clearing, grading, filling, or excavating activities.

Common plan of development or sale describes a situation in which multiple construction activities are occurring, or will occur, in a contiguous area.

Non-Structural BMPs

- Low Impact Development
- Phasing Land Disturbance
- Minimizing Disturbance
- Preserving Natural Vegetation
- Good Housekeeping

Structural BMPs

Erosion Controls

- Mulch
- Grass
- Stockpile Covers

Sediment Controls

- Silt Fence
- Inlet Protection
- Check Dams
- Stabilized Constructed Exits
- Sediment Traps

Applicants are encouraged to apply for permit coverage electronically, which will allow construction to begin within 48 hours instead of 7 days after receipt of a paper application. There is an application fee for the Construction Stormwater Permit. See www.pca.state.mn.us/water/stormwater/stormwater-c.html for more information.

WELLHEAD PROTECTION PROGRAM



Small manufacturing facilities that provide their own drinking water from one or more wells to 25 or more employees for at least a six-month period are included in this program. The goal of wellhead protection is to protect public drinking water supplies by effectively managing potential contamination sources in the area that supplies water to the well. Specifically, your role is to manage potential contamination sources that are located on your property. Even if you obtain your drinking water from a community, you may still need to manage potential contamination sources on your property if it is located in someone else's wellhead protection area.

The Minnesota Department of Health administers the wellhead protection program and can answer questions about your roles in this program. For more information, contact the Minnesota Department of Health at (651) 201-4700 or visit their web site at www.health.state.mn.us/divs/eh/water/swp/index.htm.