A Citizen's Guide to Water Quality Permitting

Understanding the National Pollutant Discharge Elimination System (NPDES) Program and Its Role in Michigan

TIP OF THE MITT WATERSHED COUNCIL

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Water Quality Permitting

Understanding the National Pollutant Discharge Elimination System (NPDES) Program and Its Role in Michigan

by Ellen J. Kohler

The purpose of this document is to promote citizen involvement in water quality permitting. If you would like to reproduce this book or portions of it for reasons consistent with this purpose, please contact the publisher:

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The project in general and the guidebook specifically were conceived by Wil Cwikiel of the Tip of the Mitt Watershed Council. He has put in many hours shaping its purpose and reviewing its content.

An invaluable part of this publication was the comments provided by individuals who are experts in various aspects of water quality permitting in Michigan. While their comments improved the text of this document, it is important to note that they do not necessarily endorse every aspect of the document. Despite ever increasing work loads, many staff members from the Michigan Department of Environmental Quality spent quite a bit of time reviewing the document and finding information, including Amy Kohlhepp, Daniel Dell, David Drullinger, Judith Woodcock, Mark Fife, Mike Stifler, Sylvia Heaton, and Mike Bitondo. We also greatly appreciate the comments of the following individuals: Jennifer Crawford of Consumers Energy, Rita Jack of the Sierra Club, Neil Kagan of the National Wildlife Federation, Cortland Overmyer of the Environmental Protection Services Department of the City of Grand Rapids, and Grenetta Thomassey of Tip of the Mitt Watershed Council. A special thank you to Scott Blair of OMI Inc. and Richard Lewis, City Manager for the City of Traverse City for allowing us to use Traverse City Waste Water Treatment Plant's NPDES permit as a sample permit throughout the document. A heartfelt thank-you to all who contributed to this effort. This document is a reflection of their great concern and dedication to protecting water quality in Michigan.

The document would not have come together without the assistance of Ardis Bauer and Jennifer McKay. And the document would be only words on white paper without the expertise of Kristy Beyer of Dog Eat Dog Graphic Design.

This guidebook is dedicated to Anna, Peter, Kate, and Sadie, and all the children who love to splash, play, swim, fish, paddle, and boat in the waters of our great state.

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JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

JOHN D. CHERRY, JR.
LT. GOVERNOR

June 28, 2005

Dear Michigan Citizen:

We in Michigan are so fortunate to be surrounded by a water wonderland. Michigan is literally defined by the Great Lakes. There are more than 11,000 inland lakes and 36,000 miles of constantly flowing rivers. Wherever you are in Michigan you are never more than 6 miles from a lake or river, or 85 miles from one of the Great Lakes.

The quality of these waters directly impacts the quality of our lives. They provide us with drinking water and means to swim, boat and fish. They are transportation routes for Michigan products and they help sustain industries and manufacturing throughout the state.

Citizen involvement is crucial to water resource protection in Michigan. Both federal and state water resource protection laws require citizen input. In addition to participating in water quality permitting, citizens and non-governmental organizations are the foundation of water quality education, water resource restoration, and water resource regulation and management by local government. The citizens of Michigan are the voice of our rivers, lakes, wetlands and ground water.

Some believe citizen involvement in government is waning but I don't think that is true in Michigan. We are at the heart of the Great Lakes basin. We know we have a responsibility to ourselves and the rest of the world to take care of our amazing freshwater resources and we know that protecting these resources is essential to our economy and our life, now and in the future.

I ask you to get involved, no matter what motivates you: your favorite fishing stream, a swimming hole in a nearby inland lake, the majestic Great Lakes coastline, or the shared resource that we tap into to provide water for our homes and businesses. This guidebook and the more than 100 organizations and governmental agencies listed in the appendices will help you get started. Thank you for your citizen involvement.

Sincerely yours,

Jennifer M. Granholm
Governor

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Preface

This guidebook is part of a larger project funded by the Joyce Foundation of Chicago, Illinois. The over-arching purpose of this effort is to restore the citizen's voice in environmental decision-making. Other elements of the project include surveys of attitudes around citizen involvement, research on opportunities for citizen involvement, training programs for citizens and agency staff, and facilitated dialogue between citizens and agency staff. All elements of this project have been conducted and coordinated in the spirit of collaboration.

The guidebook is designed to help the engaged citizen – you – participate more fully in water quality permitting in Michigan. Specifically, it focuses on the National Pollutant Discharge Elimination System (NPDES) program established under the federal Clean Water Act and as administered in Michigan by the Department of Environmental Quality (DEQ). The NPDES program is central to maintaining and protecting the quality of our water resources, though it is only one of several DEQ programs addressing water quality.

The guidebook is available in two formats: a print copy and a web-based version available on the Tip of the Mitt Watershed Council's website at www.watershedcouncil.org. The print copy gives you an easy-to-use guidebook that you can take to meetings or share with a friend or neighbor. The web-based version provides all the information in the book and has been designed to be easily down-loaded so you can print out copies of chapters or graphics.

Don't feel that you have to read this guidebook from cover to cover. Although designed to work together as a whole, each of the following chapters can stand alone, depending on your needs.

- Chapter 1 of the guidebook presents some introductory material about the nature of Michigan's water resources, our history in managing water resources, and a brief look at where we are today.
- Chapter 2 describes the legal and regulatory framework for water quality permitting in Michigan.
- Chapter 3 discusses the standards that are applied in an NPDES permit.
- Chapter 4 outlines the permitting process.
- Chapter 5 addresses some permitting topics in more detail.
- Chapter 6 describes how the governmental agencies address enforcement.
- Chapter 7 outlines how to be an effective participant in the NPDES program, including other parts of the program such as addressing non-point source pollution.

Included in the appendices are a list of state and federal governmental contacts, a list of organizations throughout Michigan that work on water quality issues, as well as a list of informational resources, other helpful resources on water quality permitting, a list of toxics, a glossary, and a list of acronyms.

Several terms used in this guidebook can have specific meanings in the regulatory setting. As they are used here, they may not have the exact same meanings. We have used the terms "pollutant"

and "parameter" interchangeably to refer to the aspects of discharge regulated through the NPDES program. Though it is often used in a much broader manner, “pollutant” has a specific definition under the Clean Water Act. Many aspects of discharge, including organic and inorganic chemicals, are not considered pollutants at low levels but may become pollutants of concern at high levels. We have used the terms "point source" and "facility" interchangeably, though not all point sources are buildings. And we have used “effluent” and “discharge” interchangeably.

The Tip of the Mitt Watershed Council and the Joyce Foundation hope that you find the information presented here useful in your efforts to protect Michigan’s water resources. If you find you need more information, consult Appendices A and B for a list of state and federal governmental contacts and a list of organizations throughout Michigan that work on water quality issues. Thank you for your efforts to maintain and protect the waters of our state.

CHAPTER 1

Water Quality: Why It's So Important

Michigan – a Native American word for "Great Waters" – is defined by water. Michigan's almost 3,300 miles of Great Lakes shoreline border four of the five Great Lakes. That's more than enough shoreline to stretch from Lansing to the Grand Canyon and back. And it's more shoreline than any state except Alaska. The state has jurisdiction over 38,865 square miles of Great Lakes surface area, or 45 percent of the total surface area of the five lakes. Over 54,000 miles of rivers and streams – about 34,000 miles of perennial reaches and 20,000 miles of intermittent reaches – course through the state. We have over 11,000 inland lakes one acre or larger, with another 24,000 ponds at least 1/10 of an acre. These inland lakes have a total surface area of 1,390 square miles.[1] A diversity of wetlands, from coastal marshes to small bogs, covers 9,750 square miles. The lakes, ponds, and wetlands encompass more than 50 percent of the total surface area of the state.

Amazingly, there is no spot in the state more than six miles from a lake or stream, or more than 85 miles from one of the Great Lakes. Many of us have childhood memories of playing in a river, lake, or stream, catching fish, chasing frogs, and swimming through the waves. Today, many of us spend our leisure time on or near water.

Water is essential to our everyday lives, for drinking, cooking, and washing. It is essential in many businesses as well, used as part of a product, in manufacturing processes, to cool machinery, or to clean equipment, among other functions. The state advertises its water resources as "abundant, exceptionally clean, and inexpensive."

Many sectors of our economy are dependent on clean water. Much of the tourism industry, which brought in $16 billion in 2004, revolves around the rivers, lakes, and streams of the state. Michigan boasts the highest number of registered recreational boats in the country. The agricultural industry, which produces a variety of different crops, registered over $3.7 billion in sales in 2003. Many manufacturing industries, the sector that employs the most workers in Michigan, need water for their processes.

Photo courtesy of Tip of Mitt Watershed Council

Our Water History

Though it is hard to remember, Michigan's waters were not always as clean as they are today. As early as the 1870s, there were reports that the saw dust from saw mills was covering spawning grounds and causing a decline in commercial fishing on the Great Lakes. An expert in a court case about water pollution in the early 1900s testified that all the streams in Michigan were more or less polluted. A 1935-1936 report of the Stream Pollution Control Commission estimated that, across the state, 31 municipalities had adequate sewage treatment, while 81 municipalities had no acceptable means of sewage treatment. The Kalamazoo River suffered for decades, from the 1920s through the 1970s, as a result of polluted discharge from paper mills, sewage, oil, and polychlorinated biphenyls (PCBs). Some people remember that, in the 1940s, the river looked gray from paper waste 40 miles downstream from the mills. In 1953, the pollution killed thousands of carp near Allegan, resulting in areas where as much as four acres of dead fish backed up behind dams. In the early 1930s, chlorides in the Saginaw River averaged over 500 parts per million. Boaters testified in 1945 that the Detroit River was so polluted that paint was eaten off the bottom of their boats. In 1948, industrial oil pollution killed a large number of waterfowl on the same river. In the late 1960s, the state reported that 32 miles of shoreline from Muskegon to Benona in Oceana County had a large accumulations of algae, and that a large majority of monitoring sites on Lake Michigan in the Lower Peninsula had high bacteria counts, above recommended standards for swimming.[2]

Michigan also has a long tradition of taking action to protect our water resources. As you can tell from the examples below, both the legislature and the courts have recognized the importance of water quality for over 125 years.

- In the 1870s, Michigan was one of the first states to establish a health board. Early on, the board focused on the problem of drinking water polluted by sewage and industrial waste.

Rouge River photos courtesy of Dave Dempsey

- In *Attorney General v. City of Grand Rapids*, 175 Mich 503 (1913), the Michigan Supreme Court found that untreated sewage dumped into the Grand River from the Grand Rapids sewer system caused a nuisance in downstream communities when it was deposited on lands near the river after flooding. The court barred dumping raw sewage into the river without some form of treatment so as "not to contain the foul, offensive, or noxious matter" causing the nuisance, but delayed the effective date of the prohibition for 12 months to allow Grand Rapids to build a treatment facility. The court found, for the first time in Michigan, that there is no right to pollute a stream to the extent that it is injurious to the public. This case was the first of many brought in municipalities throughout the state to protect water resources.
- In 1929, the legislature established the Stream Pollution Control Commission through Public Act 245 of 1929. Its charge was to police the public and private pollution of the state's waters. The Commission issued orders requiring municipalities to construct sewage treatment plants, as was the case in 1936 when it issued such an order to Port Huron. The act stated it would be unlawful for any person to discharge any substance that would be injurious to fish or public health.
- In 1942, the Stream Pollution Control Commission became the Water Resources Commission. A few years later, the Commission was provided with authority to issue Orders of Determination for new water uses through Public Act 117 of 1949.
- A few decades later, in 1966, Public Act 245 was amended to make the discharge of raw sewage illegal. In 1968, it was amended to establish water quality standards. And in 1972, the act was amended to require permits for all discharges into surface waters of the state, a requirement now found in Part 31 of the Natural Resources and Environmental Protection Act. The federal Clean Water Act was passed the same year, requiring permits for discharges into surface waters throughout the country.
- In 1977, Michigan instituted a rule limiting the amount of phosphate in household laundry detergents. It was the first such limitation in the Great Lakes region and it had an almost immediate impact on phosphate levels in Lake Erie.

Michigan's current law states:

"A person shall not discharge any waste or waste effluent into the waters of the state unless the person is in possession of a valid permit from the [DEQ]."
MCL 324.3112; Public Act 451 of 1994, Section 3112.

While these actions were taken by institutions of state government, they were inspired, informed, and shaped by individuals who cared and got involved. Four doctors who were concerned about public health have been credited with pushing for a state health board. One of these doctors, Henry Baker, served as an expert in the 1913 Grand Rapids litigation and demonstrated, contrary to the city's argument, that the untreated sewage had to have come from the city and that there was so much of it, it could not be diluted by the flow of the river. John Bird, the Attorney General at the time, pursued what was then a novel legal theory that a municipality did not have a right to pollute public waters. The court agreed. In 1932, a group of farmers sued the city of Jackson because they didn't feel the state was doing enough to protect the water resources. The court ruled for the farmers, and ordered the city to build a sewage treatment plant. And over the years, members of hunting and fishing organizations have been influential in shaping legislation to protect water resources.

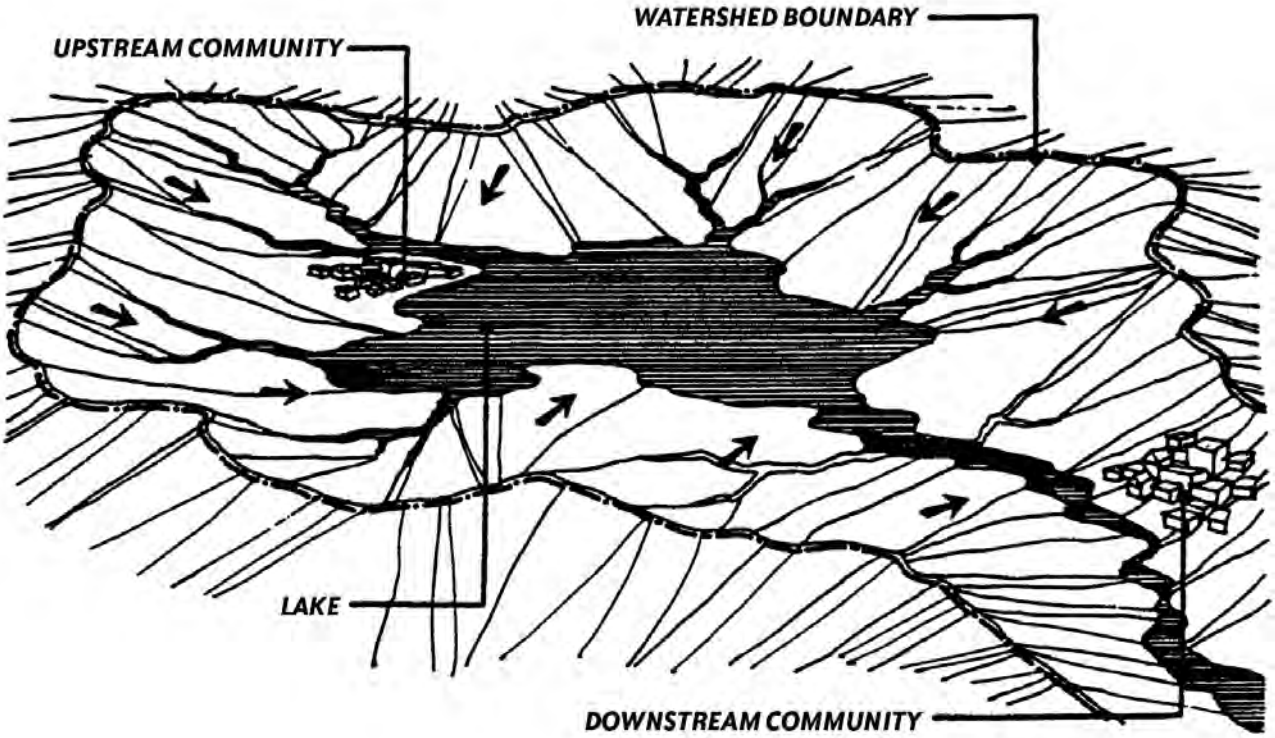
What is a Watershed?

Michigan has long benefited from vast supplies of fresh water. Nonetheless, we must keep in mind that these supplies are finite. Though Earth is "the water planet," available fresh surface water is only a fraction of one percent of all the water on the planet. And we can not create more water. It is our responsibility to our children and grandchildren to ensure that our rivers, lakes, and streams are clean, healthy, functioning systems that will continue to support their communities in the future.

With respect to water systems, we often talk about watersheds. Watersheds catch, store, and release water. When rain falls or snow melts, the water flows downhill, collecting into wetlands, small streams, and drainages, which then feed streams, rivers, lakes, and recharge groundwater. In Michigan, these waters then flow into or connect to one of the Great Lakes. The land area that collects the water that feeds a body of water is called a watershed.

As water flows across land, it gathers sediments, debris, and dissolved substances. Along the way, physical, chemical, and biological processes also affect the amount and quality of the water. As a result, water quality at any point in the watershed may have a significant impact on the water quality of the entire watershed.

PICTURING A WATERSHED



DEQ "Guidebook of Best Management Practices for Michigan Watersheds" © 1998

The health of the watershed and its ability to function properly is a direct reflection of the health of the land area within the watershed. Healthy watersheds recharge aquifers and release high quality water into larger bodies of water. Healthy watersheds create good habitat for aquatic species. Healthy watersheds are resilient to floods, fire, and drought, and they are capable of ameliorating the impacts of some human activity. Healthy watersheds provide clean, safe drinking water. Because healthy watersheds are essential to maintaining and protecting water quality, both the state and federal government agencies involved in water quality permitting emphasize watershed management.

Our Waters – Today and Tomorrow

Water is a public resource. Protecting water quality is not only in our own best interest but it is also a civic responsibility. We must take care of the lakes, streams, and ponds that provide us with drinking water, places to recreate, habitats for wildlife, and a vital resource for commerce.

Communities throughout Michigan have made substantial commitments to protect our water resources. A significant amount of money has been spent fixing sanitary and combined sewer overflows. Industrial sources and publicly-owned wastewater treatment plants have instituted pollution treatment measures so that many of the waters throughout the state that were polluted 50 or 60 years ago are remarkably cleaner. Today, some of the biggest problems facing our water resources, such as mercury deposition from air pollution and non-point source pollution, are not confined to the boundaries of our larger cities or industrial sites, and they will not be resolved through additional requirements for point source discharges.

We have come a long way and it is important that we continue efforts to protect our water resources. Michigan residents understand that water is essential to healthy communities. We all need clean water for our homes, our businesses, and our recreational opportunities. To ensure good water quality, and healthy communities, we must all be involved.

Citizen Involvement

There are many different opportunities to get involved in protecting water quality, as discussed in more detail in this guidebook. Because water is a public resource and it is essential to our lives, the federal and state legal framework for regulating discharges into water bodies provides for public participation. Citizens are crucial to efforts to protect water quality in rivers and lakes that have been degraded in the past and to help raise the level of awareness about water quality in particular water bodies. Citizens are also crucial to efforts to educate fellow residents about the kinds of problems facing our waters that go beyond industrial or municipal discharges and to serve as the catalyst for local and state officials to take action.

What will motivate you to get involved? Will it be a childhood memory of canoeing one of Michigan's rivers? Will it be the desire to continue fishing on an inland lake? Will it be the knowledge that good water quality is essential to attracting businesses to your community? Regardless of what it takes to motivate you to get involved in protecting water quality, just do it. There is nothing more important to all of Michigan than its waters. The time to take action is now.

Photo by K. Beyer © 2005

[1] Water Quality and Pollution Control in Michigan: 2004 Sections 303(d) and 305(b) Integrated Report, MI/DEQ/WD-04/029, MDEQ, Water Division, Revised May 2004, available on the DEQ's website at www.michigan.gov/deq, selecting "Inside DEQ", then "Water Division", and then "Assessment of Michigan Waters" under Surface Water Assessment.

[2] Dave Dempsey, Ruin and Recovery, (University of Michigan Press: Ann Arbor, MI) 2001 at 139-152.

CHAPTER 2

The Clean Water Act: Framework for Protection

The Clean Water Act

The Federal Water Pollution Control Act – better known as the Clean Water Act – forms the foundation for protecting the water quality of Michigan's lakes, rivers, and streams. In this chapter, we'll take a brief look at the provisions of this entire federal statute before focusing on one of the most important parts – the National Pollutant Discharge Elimination System (NPDES) – in the remaining chapters.

The Clean Water Act (CWA) was originally passed in 1972, and its objective is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[1] The federal statute sets goals to achieve this objective, including eliminating the discharge of pollutants into navigable waters by 1985, prohibiting the discharge of toxic pollutants in toxic amounts, and establishing an interim goal of fishable and swimmable waters wherever attainable by 1983. These goals were not achieved by the dates set out in the statute, but significant progress has been made in eliminating the direct flow of pollutants to surface waters.

The United States Environmental Protection Agency (EPA) has the authority to administer the Clean Water Act. The statute has been amended twice since its original passage, adding more explicit provisions on toxics and water quality standards. Passage of other laws has changed parts of the Clean Water Act. For example, the Great Lakes Critical Programs Act of 1990 codified parts of the Great Lakes Water Quality Agreement of 1978, signed by the U.S. and Canada, in which the two nations agreed to reduce certain toxic pollutants in the Great Lakes. The law requires EPA to establish water quality criteria for the Great Lakes, addressing 29 toxic pollutants with maximum levels considered safe for humans, wildlife, and aquatic life. It also requires the EPA to help the states implement the criteria on a specific schedule. Despite these changes to the act, the basic purpose of the statute has remained the same.

The Clean Water Act, like many other environmental statutes, envisions active participation by citizens in protection of water quality. It requires the permitting agency to notify the public and accept comment during the permit review process. It provides for public hearings on permits under certain circumstances. It includes similar processes for the development of regulations. It requires that certain records be made available to the public. And it provides for citizens to bring legal challenges. Decisions about discharges into rivers, lakes, and streams can have broad impacts.

Photo by K. Beyer © 2005

So decision-making should include the public. Decisions made with the benefit of public involvement are likely to be better decisions, more thoroughly considered and more broadly reviewed. These public involvement processes are part of our democracy at work, but they are only effective if citizens take advantage of them.

There are six major parts to the CWA, called "titles," and these titles are further broken down into "sections." Many of the programs from the CWA are referred to by their section numbers, so some of the more commonly used section numbers are provided in the discussion below.[2]

Title I, Research and Related Programs
(Sections 101 - 121)

Title I sets out coordinated research programs to further the purposes of the Act. In terms of Michigan's water resources, it also establishes the Great Lakes National Program Office and recognizes the commitments with Canada found in the Great Lakes Water Quality Agreement of 1978.

Title II, Grants for Construction of Treatment Works
(Sections 201 - 221)

Title II addressed grants for construction of publicly-owned treatment works (POTWs), also known as wastewater treatment plants (WWTPs). It included the grant requirements, a formula for how grant money would be divided among states, and a loan guarantee program for POTW construction. It also created grants for sewer overflow control. These projects were to be based on basin-wide waste treatment management plans. In Michigan, 14 regional plans were developed in the 1970s. An amendment to the statute ended both grant programs and created the State Revolving Fund discussed in Title V.

Title III, Standards and Enforcement
(Sections 301 - 320)

Title III makes discharging any pollutants illegal unless it is done in compliance with the statutory provisions. More specifically, this is the part of the statute that addresses how pollutants will be limited in discharge. The EPA sets what are known as treatment technology-based guidelines for specific kinds of facilities. Water quality standards are developed by each state for the waters of the state. They are based on the uses for the water and the criteria necessary to protect each use. The effluent limitation for a particular pollutant will be calculated using the stricter of the two standards.

This part of the statute also requires the identification by each state of waters where the treatment technology-based guidelines are not stringent enough to meet the state water quality standards. These are known as impaired waters, and the state must determine the total maximum daily load (TMDL) for specific pollutants to meet the water quality standards. Federal regulations require that each state adopt an antidegradation policy that protects existing uses of a water body, maintains high

quality waters, and protects outstanding waters.[3] Chapter 3 will address treatment technology-based guidelines and water quality standards in more detail.

Section 319 of the Clean Water Act requires each state to assess the impacts of non-point source pollution on the state's waters and develop a management program for controlling non-point source pollution. Non-point source pollution results from rain water or snow melt moving over the ground and carrying natural or human-made pollutants into water bodies. It cannot be traced to a single source. The statute provides grant monies for projects to address non-point source pollution. Current policy encourages a focus on watershed restoration projects. The EPA guidance outlines nine key elements for non-point source pollution control projects. States must provide an annual progress report on their non-point source programs.

The Clean Water Act and other links of interest can be reviewed from EPA's website: www.epa.gov/r5water/cwa.htm.

Federal statutes and regulations can be found at the Government Printing Office website: https://www.gpo.gov/

If you do not have a computer, consider going to your local library to learn more.

Title IV, Permits and Licenses
(Sections 401 - 406)

Title IV governs permits and licenses. It establishes the National Pollutant Discharge Elimination System (NPDES) program, which allows for the issuance of permits to discharge pollutants as long as it is done in compliance with the standards set out in Title III. It also allows states to administer the program if they can demonstrate adequate authority to do so. Applicants for federal permits that might result in the discharge of pollutants into water bodies must get certification from the state where the discharge will originate that the discharge meets the state's standards. These topics will be addressed in Chapters 4 and 5.

Section 404 governs the permitting of the discharge of dredge and fill material, also known as wetland permitting. These permits are governed by different guidelines and fall outside the NPDES program. Wetlands play an essential role in water quality protection, and information about this permitting process is available from the DEQ and from some of the organizations involved in water quality protection listed in the appendices.

Title V, General Provisions
(Sections 501 - 519)

Title V of the statute provides for enforcement, judicial review, and citizen suits, which will be discussed in more detail in Chapters 6 and 7. It also allows the EPA to treat Indian tribes as states with respect to authority to issue NPDES permits, develop non-point source management plans, and establish water quality standards for waters held by the tribe or held in trust for the tribe.

Title VI, State Water Pollution Control Revolving Funds
(Sections 601 - 607)

Title VI establishes the State Revolving Fund (SRF) program. The funds can be used to help construct POTWs, for non-point source pollution, and to develop estuary conservation and management plans. The CWA sets out federal requirements for the establishment, administration, and accounting procedures used by the states to manage the fund. The federal regulations regarding the SRF program require,

among other things, that states annually set priorities for SRF funds, provide for public involvement in the SRF program, and establish an environmental review process.[4]

Annual SRF priorities are set through Intended Use Plans (IUP). In addition to listing specific projects for future funding, the IUP must include short- and long-term goals and objectives. It must describe how the state will make funding decisions. The plan must be subject to public comment and review.[5]

The state must conduct environmental reviews of all projects proposing to use SRF funds. The state may choose to follow the federal environmental review process set out in the National Environmental Policy Act (NEPA) or it may adopt its own NEPA-like process, which must meet certain criteria set out in the regulations including public notice and participation, and legal remedies for the public.[6]

The Michigan Constitution of 1963 declares that the state's natural resources are "of paramount public concern in the interest of health, safety and general welfare of the people" and directs the legislature to protect "the air, water and other natural resources of the state from pollution, impairment and destruction."

The Clean Water Act in Michigan

Water quality protection has been a priority in Michigan for a long time, as discussed in the previous chapter. Michigan has regulated water pollution since the 1920s. The legislature created the Stream Pollution Control Commission in 1929. Its task was to end water pollution resulting from inadequate sewage treatment and industrial waste. The Stream Pollution Control Commission later became the Water Resources Commission, which existed until the 1990s when it was eliminated.

Today, the state government's role in protecting water quality is founded upon the Michigan Constitution. It declares that the state's natural resources are "of paramount public concern in the interest of the health, safety and general welfare of the people" and directs the legislature to protect "the air, water and other natural resources of the state from pollution, impairment and destruction."[7]

The provisions of the Natural Resources and Environmental Protection Act that govern water permitting can be found on the DEQ website at www.michigan.gov./deq, then selecting "Key Topics" and then "Laws and Rules".

Michigan's statutes can be found at the Michigan Legislature website at www.michiganlegislature.org.

In 1973, the State of Michigan entered into a Memorandum of Agreement with the federal government regarding implementation of the federal Clean Water Act. The agreement allowed the state to use its existing state statutory authority regarding water resource protection, coupled with new statutory provisions, to become the regulatory authority responsible for implementing parts of the CWA, including the NPDES program. Through what is now Part 31 of the Natural Resources and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended[8], the Michigan Department of Environmental Quality (DEQ) has the regulatory authority to ensure compliance with the CWA in Michigan. It provides the DEQ with authority to issue permits, promulgate regulations, establish standards, conduct monitoring and inspection activities, pursue enforcement activities, and engage in research in order "to protect and conserve the water resources of the state."[9] It also makes it unlawful to directly or indirectly discharge any harmful substances into the waters of the state; discharge of any waste without a permit is illegal.[10]

Other parts of NREPA address specific aspects of water quality permitting, for example:

- Part 35 addresses water permits for low-grade iron ore mining;
- Parts 37, 43, 45 and 47 address the functioning and administration of water treatment facilities and the establishment of treatment districts;
- Part 39 addresses cleaning agents;
- Part 41 addresses sewerage systems;
- Part 49 addresses collecting sewers;
- Part 51 addresses land disposal of wastewater; and
- Part 91 addresses soil erosion and sedimentation control.

These parts of the statute will be further explained as appropriate in Chapters 4 and 5 in the context of the permitting process in Michigan.

Part 53 of NREPA governs Michigan's State Revolving Fund (SRF) program. The statute sets out the criteria for inclusion on the Project Priority List. In addition, the long-term goals set out in Michigan's current Intended Use Plan (IUP) for fund monies include "protect[ing] the public health and environmental quality of our state" and "further integrat[ing] principles of watershed management and water quality restoration within urban, as well as out-state areas." In 2004, Michigan's SRF received approximately $57 million from the federal government, with the required state match being more than $11 million. Over the course of the fund's existence, it has funded 237 projects costing over $2 billion. Much of this money has been spent on correcting problems with combined-sewer overflows in urban areas in the Lower Peninsula. The remaining funds have been used in large part to fund projects implementing secondary treatment at POTWs, interceptor sewers, and collection sewers.[11]

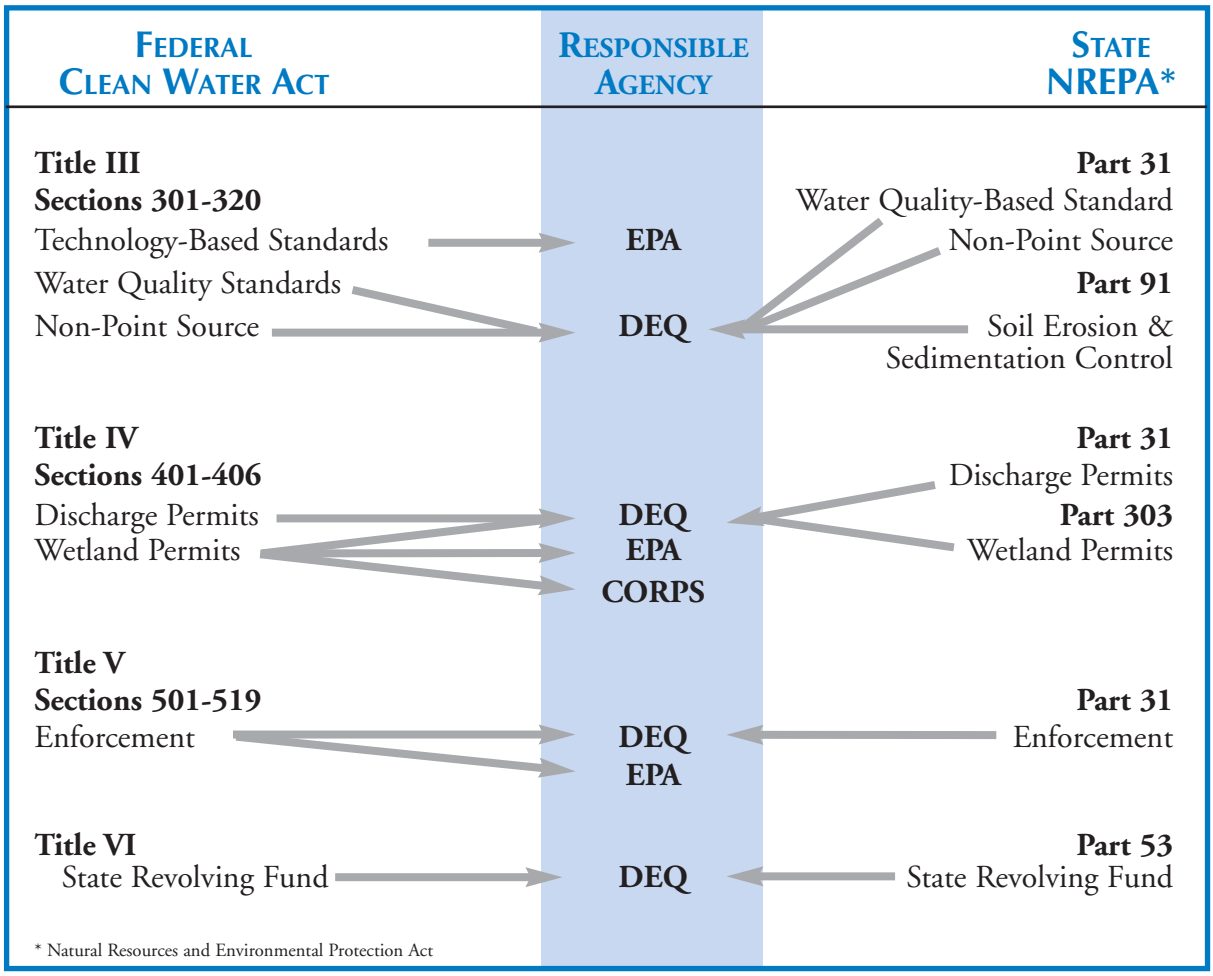
For SRF information...
The most recent IUP, priority list of projects, and annual report can be found on the DEQ website, www.michigan.gov/deq, through the Grants and Loan program page.

Other parts of the NREPA implement other aspects of the Clean Water Act. For example, in 1984, Michigan assumed authority to implement the Section 404 wetland program on inland waters of the state through the existing Wetland Protection Act. It became Part 303 of the NREPA. Still other parts of the NREPA provide additional protections for Michigan's water resources. For example, the Michigan Environmental Protection Act allows for legal challenges to actions that may pollute, impair, or destroy the resources of the state.

Photo by K. Beyer © 2005

Michigan's water resources are diverse and abundant. Over the course of almost a century, Michigan has developed a solid statutory and regulatory framework to address the threats to those resources. The NPDES program is one important aspect of that framework. With the historical and legislative background in place, the following chapters will explain in more detail how that program works to protect Michigan's rivers, lakes, and streams.

State and Federal Agencies and Their Responsibilities for Water Quality Permitting



[1] Federal Statutes are contained in the United States Code (USC). The United States Code is divided into 50 titles by broad subject matter. Each title is divided into multiple sections. The quoted provision can be found in Title 33 of the Code at Section 1251(a), cited as 33 USC § 1251(a).

[2] The Clean Water Act can be found at 33 USC §§ 1251 through 1387.

[3] The Code of Federal Regulations (CFR) contains all the rules published by the executive departments and agencies of the federal government, including the EPA. The CFR is divided into 50 titles that represent broad subject areas of federal regulation. Environmental regulations are contained mainly in Title 40. These rules provide further clarification about how the statute in the Code will be implemented by the federal agency. The quoted regulation can be found in Title 40 of the CFR at Section 131.12, cited as 40 CFR 131.12.

[4] 40 CFR 35.3100 through 35.3170.

[5] 40 CFR 35.3150.

[6] 40 CFR 35.3140; 40 CFR Part 35 Subpart K Appendix A.

[7] Michigan Constitution, Article IV, Section 52 (1963).

[8] The official compilation of Michigan statutes is called the Michigan Compiled Laws (MCL). The statutes are divided into broad subject areas called "chapters." Each chapter is further divided into "parts" and "sections." Chapter 324 covers the Natural Resources and Environmental Protection Act (NREPA). Part 31 addresses water resource protection. Michigan laws can also be identified by their Public Act Number, which includes the act number and the year it was passed. The NREPA is Public Act 451 of 1994, as amended.

[9] MCL 324.3103, 324.3106.

[10] MCL 324.3109, 324.3112.

[11] DEQ's annual report on the SRF highlights how funds are used to help address untreated and partially treated sewage releases into the environment. It can be found on line at www.michigan.gov/deq, on the Combined and Sanitary Sewer Overflow program page.

CHAPTER 3

The Standards that Shape Protection

Under the Clean Water Act and Michigan's NREPA provisions, all point source discharges of pollution into water require a permit. Point sources may discharge wastewater or pollutants from pipes, channels, ditches, wells, concentrated animal feeding operations, and watercraft.[1]

While the permitting process will be discussed in more detail in Chapter 4, the most important part of the permit contains the effluent limitations for each pollutant. Sometimes, the DEQ, the applicant, or interested parties will refer to the parameters in the discharge, meaning the different substances and attributes that characterize the effluent. The Clean Water Act regulates many aspects of discharge, not just chemical wastes we may often think of as pollutants.

The effluent limitations tell the permit holder what amount of a parameter is allowed to flow in its wastewater into the receiving waters – the surface waters of the state into which wastewaters may be discharged. Because the permit limits the amount of a specific parameter, meeting the effluent limitations often requires some type of treatment of the wastewater.

Two types of standards form the basis for effluent limitations: treatment technology-based standards and water quality-based standards. Federal regulations require that the more restrictive of the two standards for a particular parameter be used in a NPDES permit.

"The [DEQ] shall establish pollution standards for lakes, rivers, streams, and other waters of the state in relation to the public use to which they are or may be part ."
MCL 324.3106; Public Act 451 of 1994, Section 3106.

The Clean Water Act broadly defines the term "pollutants" as sewage, sewage sludge, garbage, chemical waste, sand, rocks, biological materials, heat, as well as industrial, municipal, and agricultural waste discharged into water. 33 USC §1362(6). There are two categories of pollutants; conventional and toxic. Anything else is referred to as a non-conventional pollutant.

Conventional pollutants are substances that have a direct effect on oxygen levels and do not have a direct toxic effect. Conventional pollutants include: five-day biochemical oxygen demand (BOD), total suspended solids (TSS), pH, fecal coliform, oil and grease. These pollutants are often found in the waters flowing into POTWs for treatment, and they were the initial focus for treatment in the 1970s.

Toxic pollutants are those that cause death, disease, mutations, abnormalities, or reproductive malfunctions of organisms or their offspring. They are generally grouped as organics, such as pesticides and dioxins, and metals, such as lead and mercury. The EPA list of toxic pollutants includes approximately 126 substances, such as heavy metals and manmade organic compounds. 40 CFR 122 Appendix D.

Photo by David Lorne © 2000

Treatment Technology-Based Standards

Treatment technology-based standards set an expected performance level for a particular industry or treatment system design. They help create a level playing field for all similar industrial facilities across the country – each facility must achieve these minimum parameter-specific standards no matter where it is located. They also help ensure a consistent level of water quality protection throughout the country.

Industrial Standards

Treatment technology-based standards are developed by the EPA on an industry or category basis.[2] Some industrial categories are divided into multiple subcategories. If there are no national treatment technology-based standards for a particular category of dischargers, which can be the case with some toxic substances, then standards may be set on a case-by-case basis according to the best professional judgment (BPJ) of the DEQ NPDES permit staff.

The EPA's guidelines identify the pollutants likely to be produced by a particular category of dischargers as well as the effluent limitation for each of those pollutants based on what most dischargers can reasonably achieve given the costs of treatment.[2] For conventional pollutants, these technologies are known as the best conventional pollutant control technologies, or BCTs. For toxic and non-conventional pollutants, they are known as the best available technologies economically available, or BATs. Sometimes the effluent guidelines won't address all pollutants that could be in the effluent, but instead address what are called indicator pollutants because the treatment technologies for these indicator pollutants will also remove other pollutants.

- **BPT** = best practicable control technology currently available
  Initial standards developed; may still be used if technology has not changed since time the guideline was developed
- **BAT** = best available technology economically achievable (Shortened to best available technologies) Applies to toxic and non-conventional pollutants at existing sources
- **BCT** = best conventional pollutant control technology
  Applies to conventional pollutants at existing sources
- **NSPS** = new source performance standards
  Applies to New Sources
- **PSES** =Pretreatment Standards for Existing Sources
  PSNS =Pretreatment Standards for New Sources
  Effluent must meet the specified levels before it can be discharged to a municipal POTW.

The Clean Water Act established a timeline under which the EPA was to establish control technology standards. The initial standards – called BPTs – were to be in place for a few years while EPA reviewed reasonably available technologies – called BATs and BCTs. New sources have separate standards called NSPS. In addition, for facilities that are discharging to a municipal POTW, the EPA has developed pretreatment standards. The EPA's effluent guidelines often include provisions for all five kinds of standards.

An example of an effluent guideline that applies to one industrial subcategory found in Michigan is the Beet Sugar Processing Subcategory. The following effluent limitations are the minimum standard that will be applied to existing facilities[3]:

	Maximum In any 1 day	Avg. of daily values for 30 consec days
Biological oxygen demand of 5-days (BOD5)	3.3 lbs/1000 lbs	2.2 lbs/1000 lbs
Total suspended solids (TSS)	3.3 lbs/1000 lbs	2.2 lbs/1000 lbs
pH	6.0 – 9.0	6.0 – 9.0
Fecal coliform	not to exceed MPN of 400cfu /100 ml at any time MPN = Most Probable Number, CFU = Colony Forming Units	
Temperature	90 degrees F	90 degrees F

New beet sugar processing plants may not discharge water used in processing into any water body, though they may discharge to a municipal POTW.[4]

POTW Standards

Municipal POTWs are governed by separate effluent limitation guidelines. The EPA has set out what are known as the Secondary Treatment Standards which apply to POTWs. These standards include:[6]

	7 day average	30 day average
BOD5	45 mg/liter	30 mg/liter
TSS	45 mg/liter	30 mg/liter
pH	6.0 – 9.0	6.0 – 9.0
Removal	85% BOD5 and TSS	

There are provisions that allow for facilities that may not meet these standards to have their treatment qualify as equivalent to secondary treatment.[7] In addition, states may adopt alternative state requirements for POTWs. Michigan has received approval from the EPA for alternate total suspended solids limits for wastewater stabilization.

Water Quality-Based Standards

The second type of standard does not depend on the kind of facility from which a discharge occurs but on what is needed to protect the water body into which the effluent will be discharged. Water quality standards are developed by each state, and enable the states to protect the unique characteristics of each water body. They

Photo by K. Beyer © 2005

have a direct impact on protecting the water quality of specific rivers, lakes, and streams in Michigan. The DEQ's Water Bureau develops the water quality standards for the surface waters in Michigan. Under the Clean Water Act, the DEQ must hold public hearings on its water quality standards at least once every three years. There are three components to the water quality standards: the designated uses for the waters, the criteria that set out the minimum protections needed for those designated uses, and the antidegradation policy.

Designated Uses

The Clean Water Act outlines the process for developing water quality standards. The first component is identifying the designated uses for the waters. Michigan has adopted a set of designated uses that apply to all water bodies throughout the state. The rule states:

> At a minimum, all surface waters of the state are designated for, and shall be protected for, all the following uses:
>
> (a) Agriculture.
> (b) Navigation.
> (c) Industrial water supply.
> (d) Public water supply at the point of water intake.
> (e) Warmwater fishery.
> (f) Other indigenous aquatic life and wildlife.
> (g) Partial body contact recreation.[10]

In addition, all surface waters are designated for total body contact recreation – like swimming – from May 1 through October 31.[11] Certain lakes, such as the Great Lakes, have a designated use as cold water fisheries. At a minimum, the state's water quality standards must protect these uses.

Designated uses involving aquatic life or fisheries mean that the water bodies provide suitable habitat and water quality that supports the survival and reproduction of aquatic life and warm or cold water fish species.

It is important to note that designated uses do not always include the current existing uses of a particular water body. Information about existing uses can help inform the state's review of designated uses. Existing uses of receiving waters are reviewed as part of any new permit or modified permit seeking to increase discharge.

Water Quality Criteria

The second component is the water quality criteria necessary to protect the designated uses. In Michigan, these criteria are set out through both narrative and numeric descriptions and can be found in the Part 4 and Part 8 rules. While numeric criteria can be easier to apply, maintain, and regulate, narrative criteria are important because they help describe the desired conditions for the receiving waters. Narrative criteria also can allow a state to address new or rare pollutants.

One narrative description addresses taste and odor producing substances. The regulation states that waters will not contain "taste-producing or odor-producing substances in concentrations which impair or may impair their use for public, industrial, or agricultural water supply source or which impair the palatability of fish" as measured by certain test procedures.[12]

The regulation for plant nutrients is both numeric and narrative, stating that phosphorus from point source discharges must be limited to no more than 1 milligram per liter of total phosphorus as averaged monthly.[13] The narrative portion of the rule allows for limiting nutrients as necessary to prevent stimulation of plant growth that may affect designated uses.

The toxic substances regulation has both a narrative description – "toxic substances shall not be present in the surface waters of the state at levels that are or may become injurious to the public health, safety, or welfare, plant and animal life, or the designated uses of the water" – and numeric provisions that protect public health, aquatic life, and wildlife from the harmful effects of toxic substances.[14]

The Part 4 rules establish water quality standards for Michigan.[15] They include provisions for the following characteristics:

- Physical characteristics (such as color, film, floating solids)
- Dissolved solids
- Hydrogen ion concentration
- Taste and odor producing substances
- Toxic substances
- Radioactive substances
- Plant nutrients
- Microorganisms
- Dissolved oxygen
- Temperature

The Part 8 rules address water quality-based effluent limitation (WQBEL) development for toxic substances.[16] The WQBELs are incorporated into NPDES permits that are issued for point source discharges, as discussed in Chapter 4.

Some states have adopted sediment criteria. These criteria can help identify where contamination exists and prevent additional contamination. Michigan has not adopted sediment criteria in its rules. However, site specific criteria are developed and used for the clean up of contaminated sites under Part 201 of NREPA.

While Michigan's Part 4 rules allow for the use of biological technologies, other states have adopted criteria that describe the biological conditions of a healthy water body. They are used to supplement the numeric and narrative criteria. In some instances, these biological criteria identify reference sites where a healthy water body exists and provide for comparisons of certain factors, like the diversity of aquatic bottom-dwelling organisms. In others, these criteria can also have a numeric benchmark.

Antidegradation Policy

The final component of water quality standards is the application of the antidegradation policy. The Clean Water Act requires that the policy establish how the state is going to protect existing uses, maintain "high quality waters," and protect "outstanding" waters.[17]

Michigan's antidegradation policy is set out in Administrative Rule 323.1098, and is sometimes abbreviated as Rule 98.

ANTIDEGRADATION POLICY

TIER I	TIER II	TIER III
Protect Existing Uses	**Maintain "High Quality" Waters**	**Protect "Outstanding" Waters**
Permit no activity that would eliminate or interfere with an existing use. (This provision establishes the absolute floor for water quality protection.)	Avoid – or at least hold to an absolute minimum – any lowering of quality of waters that currently meet or exceed standards.	Give the most ecologically significant and sensitive, the cleanest, and the most recreationally significant waters the strict protection they need.

Michigan's antidegradation rule applies to any activity requiring a permit that is likely "to result in a new or increased loading of pollutants by any source to surface waters of the state."[18] For all waters, water quality standards should protect existing uses, not just designated uses. In waters where the water quality standards for the designated uses are not attained (also known as non-attainment or impaired waters), the water quality should not be further lowered by allowing point or non-point discharges of the pollutant causing the problem. Other sources of pollutants causing non-attainment are natural sources and deposition of pollutants from the air.

In waters where the water quality is higher than that required by the water quality standards, that high quality should be maintained, unless important economic or social development in the area requires lowering the water quality. The antidegradation rule outlines a procedure for making this demonstration.

In waters determined to be "outstanding state resource waters" (OSRW), water quality cannot be lowered. All wild rivers under the Michigan Scenic Rivers Act and wilderness rivers designated under the National Wild and Scenic Rivers Act are OSRWs. All water bodies within Sleeping Bear Dunes National Lakeshore, Pictured Rocks National Lakeshore, and Isle Royale National Park are OSRWs. All the waters of the Lake Superior basin are designated as either OSRWs or "outstanding international resource waters". There is no procedure to demonstrate that lowering water quality for OSRWs should be allowed, as is true for high quality waters.

Impaired Waters and TMDLs

Waters that are not attaining water quality standards or supporting designated and existing uses, and waters where attaining standards or supporting uses is threatened are called "impaired waters." The Clean Water Act requires that the EPA review the state's list of impaired waters every two years.

Once a water is found to be impaired, the state must develop a restoration plan called the "total maximum daily load" (TMDL) within 13 years of listing. The TMDL is the amount of a pollutant that the water body can absorb without exceeding water quality standards. This amount, or load, is then allocated between point sources, non-point sources, and natural sources, after accounting for a margin of safety. In Michigan, the Part 8 rules contain provisions regarding how the DEQ is to calculate TMDLs for toxic substances. The TMDL may affect a point source's WQBEL for that pollutant and require increased pollution control measures for discharges of that pollutant into the water body. After the TMDL has been developed, and implemented, the water quality is reassessed for the problem pollutants. If water quality standards are achieved, the water body is no longer considered impaired with respect to that pollutant.

The DEQ submits to the EPA its review of the impaired waters required by Section 303(d) of the CWA at the same time as it submits the biennial water quality report required by Section 305(b) and the biennial lake report required by Section 314. Michigan's current impaired waters list and biennial report, titled "Water Quality and Pollution Control in Michigan: 2004 Section 303(d) and 305(b) Integrated Report"(2004 Integrated Report) is available on the DEQ website and at local libraries through the Library of Michigan.

Currently, there are 42 impaired water bodies in Michigan and 46 approved TMDLs. The approved TMDLs are listed in Appendix X of the 2004 Integrated Report. The majority of these TMDLs address problems with E. coli and excess nutrients. The DEQ has identified 421 water bodies that need TMDLs, along with a schedule for development of those plans by 2017. The schedule fits into

Wild & Wilderness Rivers in Michigan listed as Outstanding State Resource Water

- Parts of the Carp River in Mackinac County
- Parts of the Ontonagon River in Houghton and Ontonagon Counties
- Parts of the Sturgeon River in Houghton and Baraga Counties
- Parts of the Yellow Dog River in Marquette County
- Parts of the Tahquamenon River in Chippewa County
- Most of the Two-Hearted River and Dawson Creek in the Lake Superior basin

the DEQ's watershed monitoring and permitting schedule, but extends beyond permit expiration dates because of the complexity of addressing toxic pollutants. For example, 171 TMDLs addressing mercury are scheduled for completion in 2011. The dominant source of the mercury causing water quality problems is atmospheric, making corrective action difficult.

Photo by K. Beyer © 2005

The list of impaired waters requiring TMDLs, which is Appendix XIII of the 2004 Integrated Report, names the water body, identifies the problem pollutant, and sets the year when the TMDL will be developed. The DEQ identifies impaired waters when NPDES permits for the water body come up for re-issuance. It uses the following approach[19] to evaluate attainment of water quality standards:

- Water quality standards set minimally acceptable water quality.
- Data representative of current conditions is available.
- Ambient chemistry and microorganisms are assessed on a case-by-case basis.
- Poor biological community (fish and/or insects) is considered impaired.
- Waters with combined sewer overflows are considered impaired.
- Public beaches where monitoring shows too much E. coli are considered impaired.
- Waters with specific fish consumption advisories (not state-wide) are considered impaired.
- Inland waters where certain fish tissue tests average .35 mg/kg of mercury are considered impaired.
- Waters where certain samples tested above .026 ng/l for PCBs and waters where certain samples tested above 1.3ng/l of mercury are considered impaired.
- Waters where the sediments tested above certain levels of toxics were listed as requiring action depending on the toxic and the levels.
- Waters are considered threatened when water quality is declining and the trend would mean that the water would fail to meet the standard by the next listing within two years.

In Michigan, waters are listed in five categories and three subcategories:

Category 1:	All designated uses met.
Category 2:	Some uses met but insufficient data on remaining uses.
Category 3:	Insufficient or no data to make determination.
Category 4a:	Impaired waters; TMDL approved by EPA; restoration not achieved to date.
Category 4b:	Impaired waters; TMDL not scheduled because pollution control measures in place for attainment in a reasonable time.
Category 4c:	Impaired waters; TMDL not scheduled because impairment not the result of a pollutant; usually highly modified streams with impaired habitat causing degraded biological community.
Category 5:	Impaired waters requiring a TMDL.

The DEQ reports that no waters in Michigan fall into Category 1 because comprehensive information to assess all of the designated uses is not available for most monitored locations. PCBs and mercury are the predominant bioaccumulative pollutants found in Michigan waters requiring development of TMDLs. Bioaccumulative chemicals are organic compounds that are taken up directly from the water or consumed in food that contains the contaminant and they become more concentrated in higher organisms as they are transferred up the food chain. Between 2002 and 2004, the DEQ submitted and the EPA approved 24 TMDLs.

Photo courtesy of Tip of the Mitt Watershed Council

A Snapshot of Michigan's Water Quality

The 2004 Integrated Report reviews the water quality in terms of designated uses of four types of water bodies: the Great Lakes, inland lakes, rivers, and wetlands.

- Of the 3,250 miles of Great Lakes shoreline, none supports fisheries uses because of general fish consumption advisories. Fifteen miles do not support total body contact uses, and 80 miles do not support drinking water supply uses.

- Of the 502,989 acres of inland lakes (comprising 730 lakes) for which there is information, 181,342 acres generally support designated uses, while 321,647 acres do not. A small acreage, 1,090 acres, do not support total body contact uses, and 8,704 acres do not support aquatic life uses. A large amount of lake area, 311,853 acres, does not support fisheries uses largely because of mercury and PCBs in fish tissue.

- Of the 22,606 river miles for which there is information, 16,838 miles support designated uses, while 5,768 miles do not support designated uses. Approximately 3,009 miles of the non-attaining rivers are highly modified rivers maintained as county drains that will not support an acceptable biological community. Other impairments to Michigan's rivers include: 634 miles do not support total body contact uses; 1,119 miles do not support aquatic life uses; and 1,680 miles do not support fish consumption and wildlife uses. Many of these impaired waters are in the southern half of the Lower Peninsula.

- To date, the DEQ has limited information about water quality in wetlands – the report discusses designated uses in two wetlands covering 700 acres. However, there are more than 6 million acres of wetlands in the state, and the DEQ plans to have all county inventories of wetlands completed by 2006. The inventory should allow for better water quality information for these water bodies.

Opportunities for Participation

There are many opportunities for public participation in the development of the standards discussed in this chapter.

- For groups with access to the appropriate expertise, all of the EPA's effluent limitation guidelines are subject to public notice and comment before becoming final. The list of current proposed guidelines are on the EPA website www.epa.gov or available from the EPA's Region 5 office in Chicago, which covers Michigan.

- Interested parties can comment to the DEQ on a request for equivalent-to-secondary treatment by a POTW by contacting the DEQ staff responsible for the permit.

- Every three years, the DEQ must review its water quality standards and hold a public hearing. The water quality standards include designated uses, criteria, the antidegradation rule, and TMDL development. Any of these topics could be addressed during the review process. Since none of the information about the triennial review is currently available on the DEQ's website, you'll need to contact the DEQ Water Bureau directly to get on the list to be noticed of the public hearing each year. Other states provide information about their triennial review on their websites, including the proposed changes to the administrative rules resulting from the public hearing.

- The DEQ conducts a public participation process during the development of each TMDL. Contact the DEQ Water Bureau to find out about water bodies of concern to you and whether they require the development of TMDLs and the schedule for that process. The DEQ's Water Bureau posts proposed TMDLs on the website at www.michigan.gov/deq, then select "*Inside the DEQ*," then select "*Water Bureau*," and then "*Assessment of Michigan Waters*" under the Surface Water Assessment.

- The DEQ keeps a calendar, including permit decision, public hearing, and public meeting dates. On the DEQ home page, select "news and events" and then "calendar" or go to www.michigan.gov/deqcalendar.

[1] 33 USC § 1362(14). They do not include "return flows from irrigated agriculture or agricultural storm water runoff."

[2] The EPA's effluent guidelines can be found at 40 CFR 405-499.

[3] 40 CFR 409.12, 409.13, 409.17.

[4] 40 CFR 409.15.

[5] There are three levels of treatment for POTWs. Primary treatment uses screens and settling ponds to separate solids from the wastewater. Secondary treatment involves some kind of biological treatment, usually trickling filters or an activated sludge process. In either process, bacteria remove organic substances in the wastewater. After completing this process, the wastewater is disinfected, often with chlorine. Some POTWs also apply tertiary treatment to further clean the wastewater. These treatments can include reverse osmosis, filtration, distillation, and carbon absorption. How Waste Water Works, available on the EPA's website at https://www.epa.gov/.

[6] 40 CFR 133.102.

[7] 40 CFR 133.105.

[8] The water quality standards are set out as regulatory rules. The rules can be found on the State Office of Administrative Hearings and Rules website or on the DEQ's website. What are known as the Part 4 rules include Administrative Rules 323.1041 through 323.1117; Part 8 rules include Administrative Rules 323.1201 through 323.1221.

[9] 40 CFR 131.20.

[10] Administrative Rule 323.1100(1).

[11] Administrative Rule 323.1100(2). The rule also references Administrative Rule 323.1062, which states that all total body contact waters shall contain no more than 130 E. coli per 100 ml over a 30-day geometric mean, and no more than 300 E. coli per 100 ml at any time. Partial body contact waters shall not contain more than 1000 E. coli per 100 ml.

[12] Administrative Rule 323.1055.

[13] Administrative Rule 323.1060.

[14] Administrative Rule 323.1057. The testing provisions set out in this regulation are lengthy.

[15] Administrative Rules 323.1041 through 323.1117.

[16] Administrative Rules 323.1201 through 323.1221.

[17] 40 CFR 131.12.

[18] Administrative Rule 323.1098.

[19] Michigan's 2004 Methodology for Determining Water Bodies Requiring TMDLs, Appendix VI of the 2004 Integrated Report, available on the DEQ's website at www.michigan.gov/deq, selecting "Inside DEQ," then "Water Bureau," and then "Assessment of Michigan Waters" under Surface Water Assessment.

NPDES Permit Review Process in Michigan

Application *Submission requirements*

- Facility name, physical location, address and type of facility
- Water supply source and water usage
- Outfall location and wastewater type
- Critical materials and priority pollutants used, stored or produced
- Water treatment additives
- Expected wastewater characteristics
- Discharge flows, production rates for processes contributing to the discharge and treatment technologies
- Water treatment additives
- Toxic pollutant data
- Biological toxicity testing data
- Certification of completeness and accuracy

DEQ staff in Lansing review for completeness and appropriate category

Individual Permit
(to appropriate DEQ district office)

For all types of discharges – process water, storm water, and non-process wastewater.

Treatment Technology-Based

- Secondary Treatment for POTWs
- Industry specific TTBELs for non-municipal

Water Quality-Based

- Reasonable Potential
- TMDL

DEQ drafts Permit; reviews with applicant

30 day public comment period

DEQ addresses comments. If unresolved and/or substantial issues exist, DEQ considers holding public meeting/hearing

DEQ staff makes recommendation to DEQ decision-maker

General Permit
(to appropriate DEQ district office)

General Permit Categories

- Wastewater from cleanup of water contaminated by gasoline and related petroleum products
- Noncontact Cooling Water
- Sand and Gravel Mining Wastewater
- Secondary Treatment Wastewater
- Wastewater Stabilization Lagoon Effluent
- Wastewater from Municipal Potable Water Supply
- Hydrostatic Pressure Test Water
- Industrial Storm Water
- Municipal Storm Water
- Land Application of Biosolids
- Concentrated Animal Feeding Operations
- Public Swimming Pool Wastewater

DEQ drafts Certificate of Coverage; reviews with applicant

2 week public comment period

DEQ addresses comments

Issue or Deny Permit

Permit by Rule – Storm Water Discharges from Construction Sites (to DEQ Lansing office)

For sites 1-5 acres with discharge to state waters, coverage automatic

For sites greater than 5 acres, applicant must send Notice of Coverage to DEQ

CHAPTER 4 Putting It All Together: Applying the Standards to Point Sources in the Permit Setting

The guidelines and standards discussed in Chapter 3 take on real meaning when the DEQ receives an application from a facility seeking to discharge into the waters of the state. Three situations require a permit application:

1. A proposal for a new point source.
2. The expiration of an existing permit and the application for reissuance.
3. The modification of conditions outlined in an existing permit.

Under the Clean Water Act, NPDES permits can be issued for a period of no more than 5 years. This requirement helped shape the DEQ's current approach to NPDES permitting and monitoring. The DEQ has adopted a watershed approach, known as the 5-Year Basin Plan. All of the NPDES permits within the watershed cycle year come up for renewal in the same year. The DEQ reviews a group of watersheds equal to about 20 percent of all NPDES permits each cycle year. The DEQ has also adopted a water quality monitoring schedule to collect data from some watersheds before the NPDES permits are due for renewal. This watershed approach facilitates the development and implementation of TMDLs for impaired waters since load allocation of problem pollutants must be addressed in the permitting process. The map on page 61 in chapter 7 shows each watershed throughout the state and how it fits into the 5-year rotation for 2005.

There are many kinds of facilities, or sources, that need NPDES permits. Anyone that is going to discharge wastewater directly into the surface waters in Michigan needs a permit. In addition, wastewater as well as regulated storm water discharges to storm sewers that do not connect to a wastewater treatment plant need an NPDES permit. Indirect discharges that go to a wastewater treatment plant do not require an individual NPDES permit, but they may have to meet standards set out in the Industrial Pretreatment Program or adopted by the local municipality. Industrial pretreatment is discussed in more detail in Chapter 5.

Sources Requiring a NPDES Permit

- **Major Municipal Wastewater** – sewage treatment plants that collect and treat wastewater from both residential and industrial sources; design flow is greater than one million gallons per day; have industrial pretreatment programs.
- **Industrial** – facilities with their own treatment works; do not send wastewaters to municipal facility; major facilities are those that score 80 or higher in DEQ's evaluation process that considers toxic pollutant potential, flow/stream flood volume, conventional pollutants, public health impacts, water quality factors, and proximity to near coastal waters.
- **Mining Operations** – operations such as gravel or copper mining that use water in their processes or discharge groundwater from active portions of the mine.
- **Combined Sewer Overflows** – combined municipal wastewater and storm water systems that discharge raw or partially treated sewage into surface waters when the treatment plant's capacity is exceeded during rainfall or snowmelt.
- **Storm Water** – runoff from regulated industrial sites, construction sites, and municipal separate storm sewer systems (MS4) that drain streets, parking lots, and some buildings within federally-defined urban areas.
- **Concentrated Animal Feeding Operations (CAFOs)** – large-scale cow, poultry and hog farms.
- **Minor Municipal Wastewater** – design flow is less than one million gallons per day; most do not have industrial pretreatment programs.

There are three kinds of permits in Michigan.

1) Individual permits – These permits apply specific effluent limitations to a specific facility's discharge. They can address wastewater and/or storm water. Currently, there are over 630 individual NPDES permits in Michigan.

2) General permits – General permits apply to a group of similar sources and/or similar discharges. Like individual permits, they must be reissued every five years. The DEQ develops effluent limitations in accordance with state and federal requirements to protect surface waters. Point sources that fit the category addressed by the general permit request a Certificate of Coverage. There are 12 categories of discharge covered by general permits.

3) Permits by rule – The permit requirements are stated in an administrative rule. The DEQ has one permit-by-rule addressing construction sites. Coverage under the rule is automatic when applicants submit a notice of coverage to demonstrate that they are in compliance with the provisions of the rule.[1]

The permit process is set out in the Part 21 rules.[2] The application requires the following information: 1) the kind of facility, 2) the location of the facility, 3) the discharge flow volume, 4) the receiving water, 5) the parameters to be addressed in the discharge (or, for new sources, expected to be in the discharge), 6) neighboring property owners, 7) processing information for industrial sources, and 8) service area for POTWs, among other things. For existing sources, the applicant must submit with the application results of any discharge tested. After an applicant files a complete application, containing all the needed information, the DEQ permit staff makes a determination as to whether the application should be considered for an individual permit or whether the activities are covered by a general permit or the permit-by-rule.

Individual NPDES permit applications can be good sources of information. For example, POTWs with industrial pretreatment programs must list all industrial sources participating in the program and a brief description of their compliance history.

For storm water under a general permit or the existing permit-by-rule, the application process is reduced to submittal of a notice of intent (notice of coverage for construction) which includes basic information about the facility and discharge location, but does not require test sampling of the discharge.

Individual Permits

For individual permits, the next step is developing the effluent limitations for each parameter in the discharge above regulated levels. An effluent limitation regulates the amount of a specific parameter that may be released in the discharge to protect the receiving waters and to ensure that human health, wildlife, and aquatic life are not threatened. It is a number derived through scientific and toxicological analysis according to the requirements set out in the regulations.

The DEQ staff reviews the application, including the nature of the discharge and the kind of facility, to determine which treatment technology-based standards might apply. An effluent limitation is calculated for each parameter in the discharge by using the standard and the discharge flow information for the source. The resulting site-specific limitation is called a treatment technology-based effluent limitation (TTBEL).

The DEQ staff also reviews the receiving waters, including applicable TMDLs, to determine whether the discharge will meet the water quality standards. They conduct a reasonable potential analysis with respect to all pollutants and toxics to determine which ones are likely to be present in the discharge. Again, an effluent limitation is calculated for each parameter by using the standard and the discharge flow information for the source. The resulting site-specific limitation is called a water quality-based effluent limitation (WQBEL). The more stringent of the two limitations for each parameter will be used in the permit.

If the application is for a new source, or for an existing source to increase the amount of a certain parameter in the discharge into the receiving waters, the applicant must include an antidegradation demonstration.[3] The demonstration must show that issuing the permit will not result in degradation of the receiving water's quality. It outlines why other alternatives to increasing the amount of discharge of the parameter are not viable and what benefits would be foregone if the increase were not allowed. The applicant can also request an exemption from the antidegradation requirements, but exemptions are generally only considered for temporary discharges, or discharges that are required to protect human health or the environment.

Photo by K. Beyer © 2005

In considering the impacts of the discharge on the receiving water, the DEQ defines a mixing zone – where "discharge is mixed with the surface waters of the state."[4] Mixing zones are established depending on the characteristics of the parameter. For example, the mixing zone for thermal discharge may be quite different from the mixing zone for total dissolved solids or toxics. Exposure to mixing zones may not be "deleterious" to aquatic life or wildlife and the water cannot have any unnatural physical conditions, such as color or smell. Generally, conditions in the mixing zone can not result in death to organisms soon after exposure.[5]

Michigan's administrative rules regarding the mixing zone provide that the DEQ will assume that the receiving waters are flowing at the lowest 12-month rate.[6] For toxic substances, the mixing zone will be calculated assuming that the receiving water is flowing at only 25 percent of that rate.[7] The DEQ also has the ability to set specific mixing zones, including establishing physical boundaries to the mixing zone and a narrative description of the mixing zone. Compliance information is not gathered from mixing zones, but rather from established monitoring points. Generally, the monitoring points are within the facility located so as to sample effluent just prior to discharge.

Using all of this information, the permit writer sets the effluent limitations and monitoring requirements for each regulated parameter in the discharge in a draft permit. The draft permit might include special conditions specific to the facility or in the receiving waters, and it will include standard conditions regarding monitoring, reporting, and enforcement. The draft permit is sent to the applicant for review. The DEQ staff has 180 days to issue the permit once it has received all the required application information.

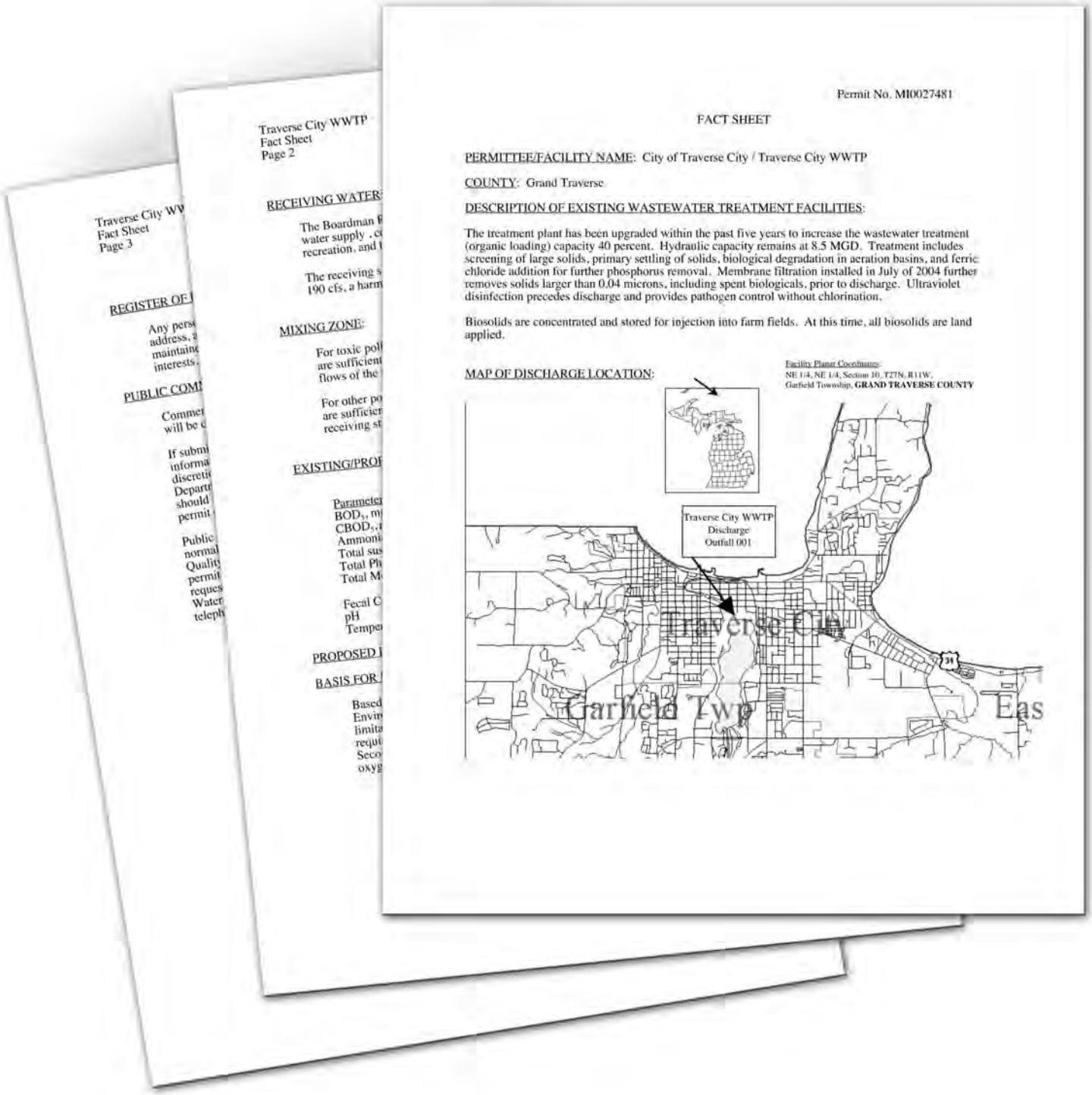
After a two- to three-week period for the applicant to review the draft permit, a public notice is published regarding the draft permit. The public notice states that the DEQ will accept comments on the draft permit for 30 days. Anyone can file a petition to hold a public hearing on the draft permit during the 30-day public comment period. The DEQ then decides whether there is sufficient cause or sufficient public interest to hold a hearing. A public hearing is an opportunity for anyone to provide comments for the official record on the draft permit, but the DEQ does not respond to those comments at the hearing. Anyone can also request a public meeting at any time during the permitting process, not just during the public comment period. A public meeting provides an opportunity for questions and answers, and noting concerns about the draft permit. Whether and when to hold a public meeting is at the discretion of the DEQ.

For individual permits that involve discharges of 500,000 gallons or more per day, the DEQ develops a fact sheet. It includes:

- A map and description of the discharge location;
- A quantitative description of the discharge;
- Historical discharge data if available;
- A statement of the standards and limitations that will be applied to the discharge;
- The DEQ's preliminary determination on the application; and
- A description of the DEQ's procedure to reach a final determination at the end of the comment period.

In December of each year, anyone can request to be on a mailing list to receive public notices and fact sheets. A sample fact sheet from a POTW permit appears on the next page.

Sample Fact Sheet



Permit No. MI0027481

FACT SHEET

PERMITTEE/FACILITY NAME: City of Traverse City / Traverse City WWTP

COUNTY: Grand Traverse

DESCRIPTION OF EXISTING WASTEWATER TREATMENT FACILITIES:

The treatment plant has been upgraded within the past five years to increase the wastewater treatment (organic loading) capacity 40 percent. Hydraulic capacity remains at 8.5 MGD. Treatment includes screening of large solids, primary settling of solids, biological degradation in aeration basins, and ferric chloride addition for further phosphorus removal. Membrane filtration installed in July of 2004 further removes solids larger than 0.04 microns, including spent biologicals, prior to discharge. Ultraviolet disinfection precedes discharge and provides pathogen control without chlorination.

Biosolids are concentrated and stored for injection into farm fields. At this time, all biosolids are land applied.

MAP OF DISCHARGE LOCATION:

Facility Planar Coordinates:
NE 1/4, NE 1/4, Section 10, T27N, R11W,
Garfield Township, GRAND TRAVERSE COUNTY

After the DEQ reaches a final decision on the permit to grant, deny, or modify the permit, an interested party has 60 days to petition the department to review the decision. The DEQ has authority to modify or revoke a permit after it has been issued under certain conditions, such as a change in conditions, violation of a term of the permit, or new regulation of a parameter not previously addressed in the permit but present in the source's discharge.[8]

In Michigan, NPDES permits have three basic parts – the cover page, Part I, and Part II. Some permits can be quite long, over 20 pages. The cover page identifies the permit holder, the permit number, the source location, the receiving water, the permit issue date, the permit expiration date, a statement authorizing discharge in compliance with the permit conditions, and a statement that anyone aggrieved by the permit can file a petition to challenge the permit within 60 days. Part I includes a section on effluent limitations and monitoring requirements for each outfall or monitoring location. Most of the special conditions relating to the kind of facility or the nature of the receiving waters are presented here. The first part of Industrial and POTW permits may also include a schedule of compliance. For POTWs, the first part of the permit will address the industrial pretreatment program and the residuals management program, if applicable. Part II of the permit addresses standard conditions and topics.[9] It includes five sections: definitions, monitoring procedures, reporting requirements, management responsibilities, and activities not authorized by the permit. The first two pages from a sample POTW are presented with explanations on pages 34 and 35.

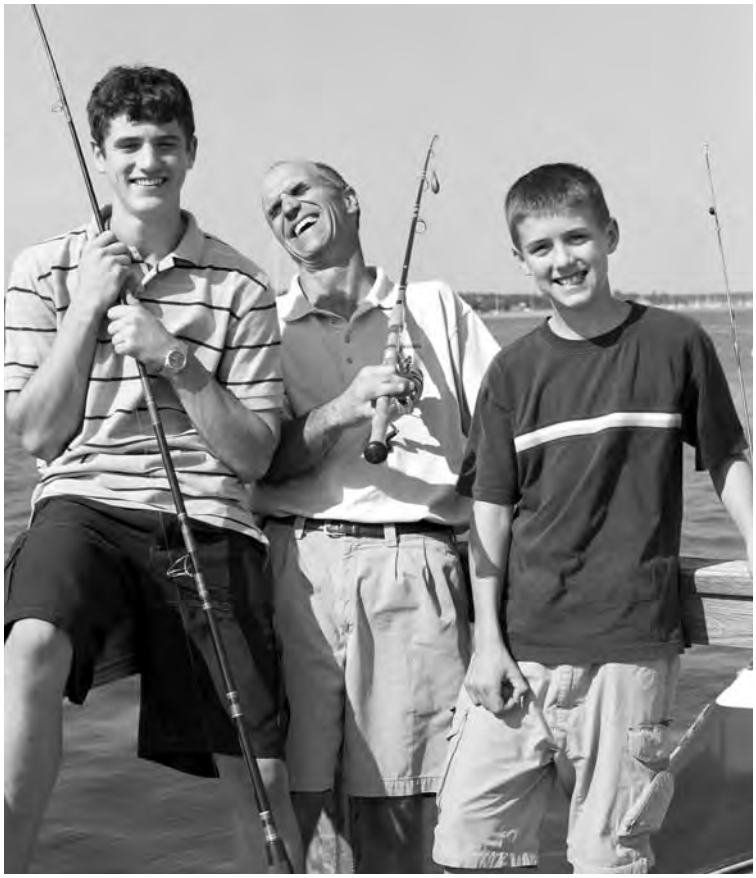
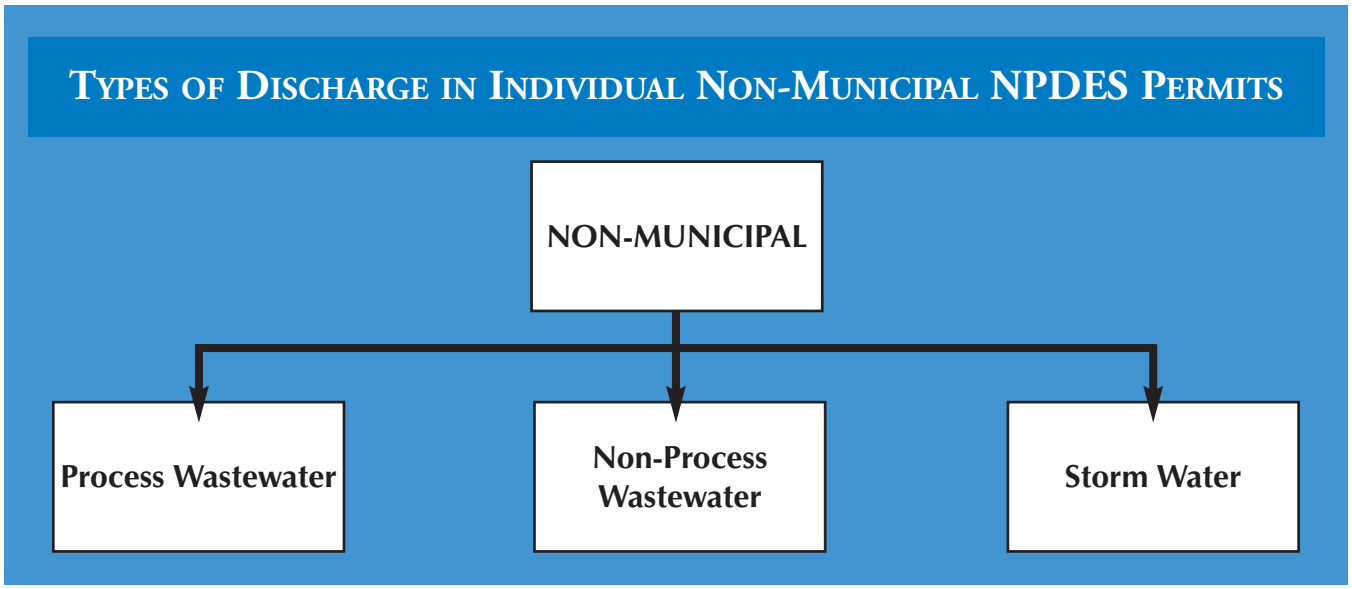
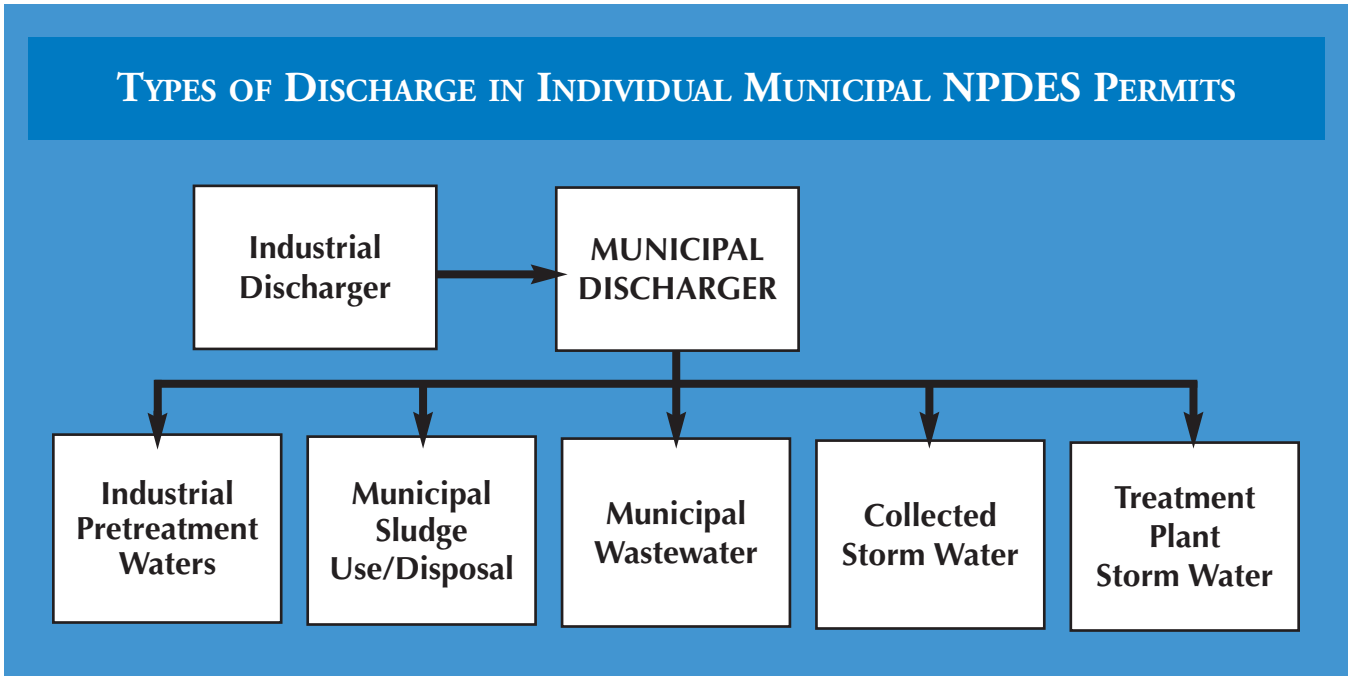


Photo courtesy of Tip of the Mitt Watershed Council


Types of Discharge in Individual Non-Municipal NPDES Permits
NON-MUNICIPAL
Process Wastewater
Non-Process Wastewater
Storm Water


Types of Discharge in Individual Municipal NPDES Permits
Industrial Discharger
MUNICIPAL DISCHARGER
Industrial Pretreatment Waters
Municipal Sludge Use/Disposal
Municipal Wastewater
Collected Storm Water
Treatment Plant Storm Water

Sample Permit

PERMIT NO. MI0027481

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PART I

Section A. Limitations and Monitoring Requirements

1. Final Effluent Limitations, Monitoring Point 001A

A During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Boardman River. Such discharge shall be limited and monitored by the permittee as specified below.

	B Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration				D	E
Parameter C	Monthly	7-Day	Daily	Units	Monthly	7-Day	Daily	Units	Frequency of Analysis	Sample Type
Flow	(report)	---	(report)	MGD	---	---	---	---	Daily	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	1800	2800	---	lbs/day	25	40	---	mg/l	5/Week	24-Hr Composite
Total Suspended Solids	2100	3200	---	lbs/day	30	45	---	mg/l	5/Week	24-Hr Composite
Ammonia Nitrogen (as N) 5/1 – 9/30	780	---	---	lbs/day	11	---	---	mg/l	5/Week	24-Hr Composite
Total Phosphorus (as P)										
Eff Date to 6/30/07	71 lb/d	---	---	lbs/day						
Begin 7/01/07	36 lb/d	---	---	lbs/day						
Fecal Coliform Bacteria	---	---	---	---						
Available Cyanide										
Eff Date to 9/30/07	---	---	---	---						
Begin 10/01/07	1.7	---	---	lbs/day						
Total Mercury See Part I.A.1.g.	---	---	---	---						
Bis(2-ethylhexyl)phthalate		---	---	---						
Di-n-butyl phthalate	---	---	---	---						
1,2,4-trimethyl benzene	---	---	---	---						
$CBOD_5$, Minimum % Removal			---	---						
Total Suspended Solids, Minimum % Removal			---	---						
pH	---	---	---	---						
Dissolved Oxygen	---	---	---	---						

The following design flow was used in deterr
actual capacity: 8.5 MGD (13.2 cfs)

a. Narrative Standard
The receiving water shall contain no unnatu
deposits as a result of this discharge.

b. Sampling Locations
Samples for all parameters shall be taken p
locations which are demonstrated by the pe

PERMIT NO. MI0027481

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq. the "Federal Act"), Michigan Act 451, Public Acts of 1994, as amended (the "Michigan Act"), Parts 31 and 41, and Michigan Executive Orders 1991-31, 1995-4 and 1995-18,

City of Traverse City
PO Box 592
Traverse City, Michigan 49685-0592

is authorized to discharge from the Traverse City WWTP located at

606 Franklin Street
Traverse City, Michigan 49684

designated as Traverse City WWTP

to the receiving water named the Boardman River in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit.

Unless specified otherwise, all contact with the Michigan Department of Environmental Quality (the "Department") required by this permit shall be made to the Cadillac District Supervisor of the Water Bureau. The Cadillac District Office is located at 120 W. Chapin Street, Cadillac, Michigan 49601, telephone: 231-775-3960, fax: 231-775-1511.

In accordance with Section 324.3120 of the Michigan Act, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by January 15 for notices mailed by December 1. The fee is due no later than 45 days after receiving the notice for notices mailed after December 1. Fees paid in accordance with the Michigan Act are not refundable.

In accordance with Section 324.3118 of the Michigan Act, the permittee shall make payment of an annual storm water fee to the Department for each January 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by March 15 for notices mailed by February 1. The fee is due no later than 45 days after receiving the notice for notices mailed after February 1. Fees paid in accordance with the Michigan Act are not refundable.

In accordance with R323.2416 of the Michigan Administrative Code, the permittee shall make payment of an annual biosolids land application fee to the Department. In response to the Department's annual notice, the permittee shall submit the fee, which shall be postmarked no later than January 31 of each year.

Any person who is aggrieved by this permit may file a sworn petition with the Office of Administrative Hearings of the Michigan Department of Environmental Quality, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department may reject any petition filed more than 60 days after issuance as being untimely.

This permit is based on a complete application submitted on March 30, 2004.

This permit takes effect on August 1, 2005. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its effective date this permit shall supersede NPDES Permit No. MI0027481, expiring October 1, 2004, and Certificate of Coverage No. MIS710015, Issued March 30, 2004, which are hereby revoked when superceded by this permit.

This permit and the authorization to discharge shall expire at midnight, October 1, 2009. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application which contains such information, forms, and fees as are required by the Department by April 4, 2009.

Issued April 22, 2005

William Creal, Chief
Permits Section
Water Bureau

Understanding a NPDES Permit

A This section sets out authority to discharge under the conditions in the permit and identifies receiving water.

B **Effluent Limitations** come in two forms: load limits and concentration limits.
Load Limits (called Maximum Limits for Quantity or Loading in the permit) set the total mass by weight of parameter that can be released from the facility each month, week, or day. These limits are often measured in pounds per day (lbs/day). For some parameters, the load limit also helps establish the chronic toxicity level. In this permit, the load limit for cyanide of 1.7 lbs/day is the chronic level.

Concentration Limits (called Maximum Limits for Quality or Concentration in the permit) define the amount of pollutant by volume in the discharge. These limits are often measured in milligrams per liter (mg/l) or parts per million (ppm). For some parameters, the concentration limit also helps establish the acute toxicity level. In this permit, the concentration limit for cyanide of 24 ng/l is the acute toxicity level.

Load limits and concentration limits should be related mathematically. The load limit is equal to the concentration limit multiplied by the flow from the facility and a conversion factor to make the units consistent. You can calculate the load limits for parameters into pounds per day from a concentration in milligrams per liter and a flow measured in millions of gallons per day (MGD) using the following formula:

Load (lbs/day) = Concentration (mg/l) x Flow (MGD) x 8.34

C **Periods of Time**
The effluent limitations are measured based on monthly, weekly (7-day), or daily time periods. Some limits set absolute maximums during that time period. For example, the pH level includes a daily maximum of 9.0 and a daily minimum of 6.0. This means that on any given day, the pH can not be higher than 9.0 and it can not be lower than 6.0.

Some limits set the average level of the parameters over that period of time. For example, in this permit, there is a load limit for total suspended solids of 3,200 lbs/day 7-Day. That means that the average amount of total suspended solids discharged during a one-week period can not exceed 3,200 lbs/day. On any given day it could be more than 3,200 lbs/day, but over the week, it can not average more than 3,200 lbs/day.

D **Frequency of Analysis**
This part of the permit sets out how often the permit holder must test to see if the discharge is meeting the effluent limitation. In this permit, the flow must be sampled each day (note that the design flow is identified in the sentence under the chart of effluent limitations); total phosphorus must be sampled three times/week. Sometimes, the frequency of analysis may decrease in a reissued permit if the permit holder has demonstrated long-term, consistent compliance or amounts of a parameter are below regulated levels. Likewise, for permit holders who have experienced compliance issues, the required frequency of analysis should reflect that history. More frequent sampling can produce sufficient information about the amounts of a parameter to better characterize the waste stream and reduce the need for a reasonable potential analysis unnecessary.

E **Sample Type**
There are various sample types. This permit includes composite and grab samples. A composite sample is made up of two or more individual samples taken from the discharge. A grab sample is a single sample collected at a given moment, resulting in a snap-shot of the discharge quality. Another sample type used by DEQ is a flow proportional sample, where larger samples are taken when flow increases and smaller samples when flow decreases. The sample type should be appropriate given the effluent limitation. For example, composite samples help evaluate the average level of parameters in a given period of time, but they are not sufficient for establishing compliance with an effluent limitation that sets a daily maximum level.

The Water Bulletin provides information on actions taken by the DEQ's Water Bureau during the month. It is available on the DEQ website, www.michigan.gov/deq, then selecting "Water," then "Surface Water," then "NPDES Permits."

This webpage also lists the current NPDES General Permits.

General Permits

In addition to individual permits, the DEQ has authority to develop general permits. General permits are designed to cover similar types of sources, similar types of discharge, or similar sources with similar types of discharge. They contain effluent limitations or pollution control requirements protective of most surface waters statewide. Where more stringent requirements are necessary, an individual permit is required. Facilities that apply and are eligible to be covered under a general permit receive a Certificate of Coverage (COC). General permits are subject to public notice and comment when they are developed and when they are renewed, every five years. In addition, the DEQ is making COCs available for public notice and comment on the DEQ's NPDES permit webpage. Lists of COCs and construction site NOCs (Notices of Coverage) are available in the Water Bulletin, a monthly publication of the DEQ's Water Bureau that lists actions taken that month. The Water Bulletin is available in print by requesting copies or on the DEQ's NPDES permit webpage.

The DEQ has authorized general permits for 12 different categories of discharge. They address discharges ranging from sand and gravel mining wastewater to public swimming pool wastewater to non-contact cooling water. They are available on the DEQ website on the NPDES webpage. Several of the general permits are discussed in more detail in Chapter 5.

This chapter describes the general framework of an NPDES permit in Michigan. Several permitting topics lend themselves to further discussion, such as regulating toxic substances and storm water management. These and other topics will be addressed in more detail in Chapter 5.

Photo by David Lorne © 2000

Photo courtesy of Tip of the Mitt Watershed Council

Opportunities for Participation

There are several opportunities for public participation in the basic NPDES permitting process discussed in this chapter.

Individual NPDES Permits

- Under the DEQ's 5-Year Basin Plan, you should be able to figure out when existing individual NPDES permits will come up for review in your watershed.
- Consider beginning discussions with the DEQ approximately six months before it begins its review of existing permits in your watershed. Individual NPDES permits state that the permit holder must submit a new application six months before the existing permit expires if it would like the permit reissued.
- Individual permits must be made available for public notice and comment. The DEQ maintains a list of NPDES permits out for public comment on its website. These include permits to reissue or modify an existing permit and permits for a new facility.
- When considering the terms of a draft NPDES permit, it may be helpful to get a copy of the application, the fact sheet (created for facilities discharging 500,000 gallons per day), and the old permit. These documents may be available on the DEQ website. They are also available from the DEQ office responsible for the permit, which is listed on the public notice and on the draft permit.
- If you are concerned about specific provisions in a draft permit, you should consider requesting a public meeting or public hearing and submitting written comments about your concerns.

Opportunities for Participation

General Permits

- While they have a term of five years, most general NPDES permits are not governed by the 5-Year Basin Plan in that their renewal is not tied to a specific watershed. They apply throughout the state. Industrial storm water general permits are based on the 5-Year Basin Plan.
- If you are concerned about provisions of a particular general permit, you may want to consider requesting a public meeting with the DEQ to discuss those concerns and ask questions well before the general permit expires and consideration for reissuance begins.
- Proposed general permits must be made available for public notice and comment. You may want to consider requesting to be on a list to receive notices of proposed general permits.
- If you are concerned about specific provisions in a proposed general permit, you should consider requesting a public hearing and submitting written comments about your concerns.
- If you are concerned about specific provisions in a draft COC, you should consider submitting written comments about your concerns.

Photo by K. Beyer © 2005

[1]At this point, there is only one permit-by-rule. It covers storm water discharges from construction sites of one acre or more. See Administrative Rule 323.2190. A Notice of Coverage must be submitted to the DEQ for sites of five acres or more. Construction sites disturbing under five acres of soil are automatically deemed to have a NPDES permit authorizing discharge of storm water, and no NOC is required. Id. All construction sites are subject to the Soil Erosion and Sedimentation requirements of NREPA. See MCL 324.9101 through 324.9123.

[2]Administrative Rules 323.2101 through 323.2195.

[3] Administrative Rule 323.1098.

[4]Administrative Rule 323.1082.

[5]Administrative Rules 323.1050, 323.1082, 323.1090.

[6]Administrative Rule 323.1090.

[7]Administrative Rule 323.1082(2).

[8]Administrative Rule 323.2159.

[9]Some of these standard conditions are set out in Administrative Rule 323.2149.

CHAPTER 5 Selected Topics in More Detail

Because of the multiple factors relating to the point source and the receiving water, no two applications will be exactly alike. This chapter discusses some additional topics that may be addressed in a specific application and NPDES permit. However, keep in mind this guidebook does not cover every issue that might be raised in an NPDES permit.

Toxics

Regulating toxics adds another level of complexity to NPDES permitting. Some toxics are difficult to detect or measure with a great degree of precision. The Part 4 rules outline the criteria for toxic substances, stating that "toxic substances shall not be present in the surface waters of the state at levels that are or may become injurious to the public health, safety, or welfare, plant and animal life, or the designated uses of the waters."[1] While this standard may sound straightforward, making the required determinations is difficult. The Part 4 rules establish how aquatic life values, wildlife values, human health values, and how bioaccumulation factors will be calculated for toxics.

The Part 8 rules go into more detail about how these criteria are then applied to become water quality-based effluent limitations for toxics.[2] Specifically, the Part 8 rules outline how to address TMDLs for toxics, how to determine waste load allocations for toxics, and how to establish preliminary effluent limitations for toxics in the discharge that have a reasonable potential to cause a violation of the water quality standards for the receiving waters.

The Part 8 rules also establish the procedure for testing whole effluent toxicity (WET), which measures the toxicity of all the toxic substances in combination.[3] The testing involves placing live organisms in the effluent to see if they live, die, or experience harmful effects. In some cases, the DEQ may decide that a specific effluent limitation for each toxic is not sufficient to ensure protection of water quality. In that case, it may include a WET limitation. Where there is not sufficient information, the DEQ can require WET testing to obtain information over a certain period of time.

Toxics can exist in a discharge but not at a level that requires routine sampling. Instead, the permittee will be required to sample for toxics occasionally to determine whether toxics are present and at what level. If sampling indicates a harmful level, the permit may be modified or an effluent limit for that toxic substance may be imposed when the permit is reissued.

Toxicity is also measured in terms of how fast an effect it has on organisms. Acute toxicity means organisms die soon after exposure to the substance. Chronic toxicity means that organisms may experience substantial harmful effects (such as reproductive, developmental or immunological problems) or die after a long period of exposure. Permits may require testing to measure both acute and chronic toxicity.

Regulating mercury demonstrates how toxics are often addressed differently in permitting. In 1999, the EPA adopted a new, more sensitive method for measuring mercury. It allows for measurements lower than Michigan's water quality standard for mercury based on protection of wildlife – 1.3 ng/liter. Using the new method, the DEQ found that the majority of ambient water samples (samples not impacted by NPDES discharges) and NPDES discharges in Michigan exceeded the 1.3 ng/liter standard. Available end-of-pipe controls for mercury are expensive and do not necessarily ensure lowering levels to meet Michigan's mercury water quality standard, since ambient water samples from receiving waters are also above the standard. For these reasons, the DEQ has adopted a strategy for addressing mercury in reissued and new permits. For reissued permits between 2005 and 2009, the permit will include the level currently achievable (LCA) of 10 ng/liter, as well as requiring a pollutant minimization plan.[4] For sources where there is insufficient information, monthly monitoring is required for the duration of the permit, with a special condition that triggers implementation of a mercury pollutant minimization plan if, after a year, the data show a reasonable potential that the discharge will exceed the water quality standard. For new sources, the permit will use the 1.3 ng/liter limit as a monthly average; when there is insufficient information to make a reasonable potential determination, the permit will require monthly monitoring with a special condition triggering implementation of a mercury pollutant minimization plan.

Pages from the sample POTW permit on the next page demonstrate how the mercury strategy has been applied. Because there is insufficient data on mercury, the POTW is required to do monthly monitoring, with a special condition triggering implementation of a mercury pollution minimization plan if the monitoring shows the mercury levels in the discharge are likely to impact water quality.

Photo by K. Beyer © 2005

PERMIT NO. MI0027481

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PART I

Section A. Limitations and Monitoring Requirements

c. Ultraviolet Disinfection
It is understood that ultraviolet light will be used to achieve compliance with the fecal coliform limitations. If chemical oxidants such as chlorine compounds are used, then an additional maximum daily effluent limitation of 0.038 mg/l of Total Residual Oxidant shall apply. Such use may be approved by the Department, and testing and analyses shall be performed in accordance with the conditions of approval.

d. Percent Removal Requirements
These requirements shall be calculated based on the monthly (30-day) effluent $CBOD_5$ and Total Suspended Solids concentrations and the monthly influent concentrations for approximately the same period.

e. Monitoring Frequency Reduction for $CBOD_5$, Total Suspended Solids, and/or Ammonia-N
After the submittal of 24 months of data, the permittee may request, in writing, Department approval of a reduction in monitoring frequency for $CBOD_5$, Total Suspended Solids, and/or Ammonia-N. This request shall contain an explanation as to why the reduced monitoring is appropriate. Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.1. of this permit. The monitoring frequency for $CBOD_5$, Total Suspended Solids, and Ammonia-N shall not be reduced to less than 3 times weekly. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittee.

f. Monitoring Frequency Reduction for 1, 2, 4-Trimethyl benzene, Bis(2-ethylhexyl)phthalate, Total Mercury, or Di-n-butyl phthalate
After the submittal of 12 months of data, the permittee may request, in writing, Department approval of a reduction in monitoring frequency for 1, 2, 4-trimethyl benzene, Bis (2-ethylhexyl)phthalate, or Di-n-butyl phthalate. This request shall contain an explanation as to why the reduced monitoring is appropriate. Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.1. of this permit. The monitoring frequency for 1, 2, 4-trimethyl benzene, Bis(2-ethylhexyl)phthalate, or Di-n-butyl phthalate shall not be reduced to less than annually. The monitoring frequency for Total Mercury has been reduced to quarterly. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittee.

g. Total Mercury Testing Requirements
The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E, "Mercury in Water by [illegible], and Cold Vapor Atomic Fluorescence Spectrometry". The quantification level for total Mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The use of clean technique
contained in: EPA Method
(Sampling Guidance), EPA
and analytical protocols an

The department will revie
described in R 323.1211 o
Water Quality Standard of

If it is determined that the
notification by the Depart
approved by the Departm

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PART I

Section A. Limitations and Monitoring Requirements

3. Pollutant Minimization Program for Total Mercury

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/l. Upon notification by the Department, the permittee shall implement the Pollutant Minimization Program approved on March 27, 1996, and modifications thereto, to proceed toward the goal. The Pollutant Minimization Program includes the following minimum requirements:

a. an annual review of potential sources of mercury entering the wastewater collection system;

b. a program for semi-annual monitoring of influent and periodic monitoring of sludge for mercury; and

c. implementation of reasonable cost-effective control measures when sources of mercury are discovered. Factors to be considered include significance of sources, economic considerations, and technical and treatability considerations.

On or before March 31 of each year after the program is implemented, the permittee shall submit a status report for the previous calendar year to the Department that includes
1) the monitoring results for the previous year,
2) an updated list of potential mercury sources, and
3) a summary of all actions taken to reduce or eliminate identified sources of mercury.

Any information generated as a result of the Pollutant Minimization Program set forth in this permit may be used to support a request to modify the approved program or to demonstrate that the Pollutant Minimization Program requirement has been completed satisfactorily.

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items 3.a. and 3.b. if the data indicate that the 12-month running average mercury concentration is less than 5 ng/l.

The permittee may choose to demonstrate that the program is complete and request removal of the program from the permit. Such request and supporting documentation demonstrating that the goal is being achieved shall be submitted in writing to the Department. If the Department determines that the request is approvable, this permit may be modified in accordance with applicable laws and rules to remove this requirement.

This permit may be modified in accordance with applicable laws and rules to include additional mercury conditions and/or limitations as necessary.

Industrial Pretreatment Programs

Some non-residential facilities in Michigan may not need an individual NPDES permit if their wastewater discharges to a municipal POTW. However, they will have to ensure that they meet the requirements of the POTW's Industrial Pretreatment Program. Michigan has been implementing the Industrial Pretreatment Program since 1983. The pretreatment requirements are set out in the Part 23 rules and federal regulations, which establish responsibilities for governmental and private parties in order to ensure that pollutants do not pass through the POTW without sufficient treatment or interfere with the treatment processes at the POTW.[5] Michigan prohibits eight categories of pollutants from discharge to a POTW, ranging from explosives to oils to heat at such levels that it might inhibit the biological activity required in the treatment process. There are over 100 POTWs with industrial pretreatment programs in Michigan. A small excerpt on industrial pretreatment from the sample POTW permit appears below.

The pretreatment program has several requirements.[6] The POTW must have sufficient authority to impose limitations on the pretreatment dischargers, to monitor discharges, and to inspect facilities. At a minimum, the discharge to the POTW must meet the treatment technology-based standards set out by the EPA for the industrial category. The POTW must develop an enforcement response plan, which outlines its enforcement powers. All records must be maintained for three years. The program must include an interjurisdictional agreement with all governments served by the POTW. And it must provide for public participation and notification, including an annual listing of all dischargers who were in noncompliance. The reporting on noncompliance is part of an annual reporting requirement to review any modifications to the program, changes in industrial users, any enforcement activities, and results from sampling and analysis of influent, effluent, and biosolids.

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PART I

Section C. Industrial Waste Pretreatment Program

1. Federal Industrial Pretreatment Program

a. The permittee shall implement the Federal Industrial Pretreatment Program approved on July 23, 1985, and any subsequent modifications approved up to the issuance of this permit. Approval of substantial program modifications after the issuance of this permit shall be incorporated into this permit by minor modification in accordance with 40 CFR 122.63.

b. The permittee shall comply with Rules 323.2301 through 323.2317 of the Michigan Administrative Code (Part 23 Rules), the General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR Part 403), and the approved Federal Industrial Pretreatment Program.

c. The permittee shall have the legal authority and necessary interjurisdictional agreements that provide the basis for the implementation and enforcement of the approved Federal Industrial Pretreatment Program throughout the

Biosolids

Biosolids are the residues from treatment of sanitary sewage through one or more processes that reduce pathogens and attractiveness to disease vectors, such as flies, rodents, and mosquitoes. Biosolids do not include industrial sludge or septage gathered from individual septic systems, which are addressed through other regulatory means. For the most part, biosolids are generated at POTWs and can be applied to agricultural lands as a method of disposal. This aspect of NPDES permitting is governed by the Part 24 rules.[7]

Biosolids, also known as sewage sludge, are used to enhance agricultural production in Michigan. Almost all biosolids that are recycled in Michigan are land applied to grow crops on sites approved by the DEQ. Biosolids applications are controlled by Residuals Management Programs (RMPs) that are required by the provisions of a NPDES permit for a POTW (as demonstrated by the excerpt from the sample POTW permit on the next page) or by a general permit addressing biosolids. The residuals management program submitted to the DEQ must include all of the following information:

- Size and type of generating facility;
- One year of records representing the volume and concentrations of pollutants in the biosolids;
- Treatment process origin, for example, primary or secondary treatment, and the volume of biosolids generated from each process;
- A description of the treatment processes;
- Storage volume;
- Transportation methods and spill prevention plan;
- Land application method;
- Land application site list;
- Land application plan;
- Pathogen reduction method;
- Vector attraction reduction method; and
- Monitoring program.[8]

The RMP must be approved by the DEQ before biosolids can be applied to land, and the provisions of the RMP are enforceable requirements of the NPDES permit. The DEQ limits the amount of certain metals in biosolids that are applied to land. If the concentrations are higher, the biosolids must be disposed of using an alternate method, such as incineration or landfilling.

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PART I

Section D. Residuals Management Program

1. Residuals Management Program for Land Application of Biosolids

The permittee is authorized to land apply bulk biosolids or prepare bulk biosolids for land application in accordance with the requirements established in R323.2401 through R323.2418 of the Michigan Administrative Code (Part 24 Rules). The permittee has developed and implemented a Residuals Management Program (RMP) which complies with the requirements of the Part 24 Rules. Incineration, landfilling and other residual disposal activities shall be conducted in accordance with Part II.D.7. of this permit.

The permittee shall continue to implement the Residuals Management Program approved on June 18, 2001, and modifications thereto. The permittee shall certify that current residuals management practices are in accordance with the approved RMP, or propose modifications to the approved RMP. The program certification or proposed modifications shall be submitted to the Department on or before October 1, 2006. The approved RMP, and any modifications thereto, are enforceable requirements of this permit.

Storm Water Discharges and MS4s

Regulation of storm water has been implemented through both individual permits and general permits. During what is known as Phase I of the storm water program, cities with populations over 100,000, certain industries, and construction sites disturbing over five acres were required to get NPDES permits. Phase II covers smaller urban areas and construction sites disturbing one acre or more. In Michigan, certain categories of dischargers were required to get an individual storm water permit, including:

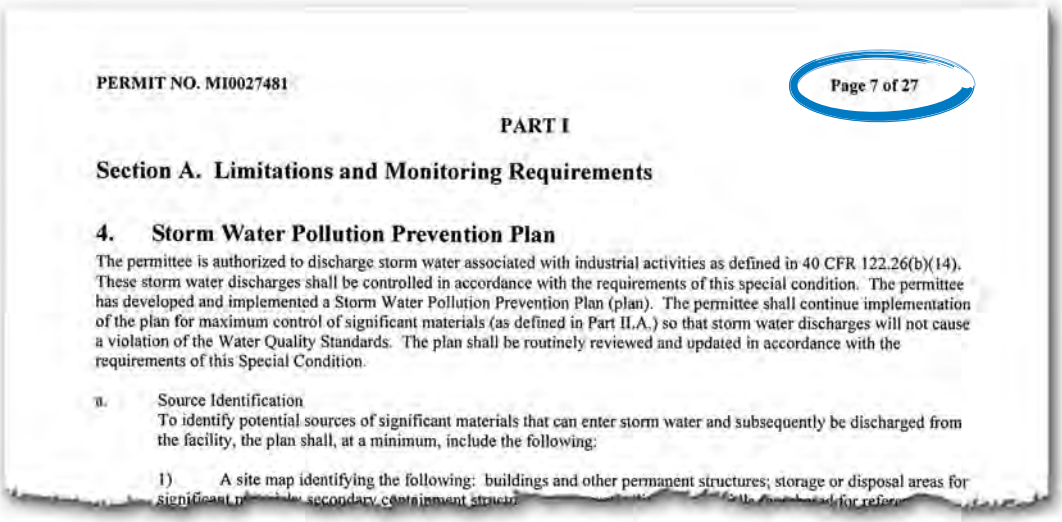
- Municipal separate storm sewer systems (known as MS4) that serve over 100,000 people;
- Sources where specific controls are needed to meet water quality standards or TMDLs; and
- Some sources that contribute significantly to pollutant loadings.

The DEQ has developed general permits for each cycle of watersheds in the 5-Year Basin Plan to address storm water on industrial sites. Many individual industrial and POTW individual permits include storm water control and treatment measures that match those found in the general permits. The general permits require that each facility have a certified storm water operator and a Storm Water Pollution Prevention Plan (SWPPP) for storm water on site signed by the operator. The general permits outline the requirements for the plan and implementation of structural and non-structural controls. A SWPPP should include the following information:

- A site map with areas of concern for storm water pollution identified;
- A list of all significant materials that could enter storm water;
- An evaluation of the reasonable potential for contribution of significant materials into runoff from certain activities;

- A summary of existing storm water discharge sampling data;
- A description of routine preventative maintenance of storm water management and control devices;
- A schedule for comprehensive site inspection (at least every six months);
- A description of good housekeeping procedures for the facility;
- A description of material handling procedures and storage requirements for significant materials;
- Identification of areas with high potential for significant soil erosion;
- A description of employee training programs regarding the SWPPP;
- Identification of actions to limit discharge in order to comply with a TMDL, if applicable;
- Identification of significant materials expected to be in storm water discharges following non-structural preventative measures;
- At facilities that require further controls, a description of structural controls for prevention and treatment of storm water;
- Modifications to the SWPPP when discharge at the facility increases or increases the potential for exposure of storm water to significant materials; and
- Review of the SWPPP annually.

The sample POTW permit has storm water management provisions, including a SWPPP, comparable to the requirements in the general permits.



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PART I

Section A. Limitations and Monitoring Requirements

4. Storm Water Pollution Prevention Plan

The permittee is authorized to discharge storm water associated with industrial activities as defined in 40 CFR 122.26(b)(14). These storm water discharges shall be controlled in accordance with the requirements of this special condition. The permittee has developed and implemented a Storm Water Pollution Prevention Plan (plan). The permittee shall continue implementation of the plan for maximum control of significant materials (as defined in Part II.A.) so that storm water discharges will not cause a violation of the Water Quality Standards. The plan shall be routinely reviewed and updated in accordance with the requirements of this Special Condition.

a. Source Identification
To identify potential sources of significant materials that can enter storm water and subsequently be discharged from the facility, the plan shall, at a minimum, include the following:

1) A site map identifying the following: buildings and other permanent structures; storage or disposal areas for

A different general permit for industrial storm water applies to storm water discharges that have special contamination concerns: 1) discharges of storm water captured in secondary spill containment structures required by state and federal law; 2) discharges from state listed sites of environmental contamination where the contaminants may come in contact with storm water; and 3) sources deemed by the DEQ to need monitoring because they may contribute significantly to nutrient loadings. It requires a short-term discharge characterization study.

Two general permits address storm water discharges for MS4s in "urbanized areas," as designated by the U.S. Census Bureau. An urbanized area represents a group of communities that have population densities exceeding 500 people per square mile and a core population of that density that exceeds 50,000 people.[9]

One of these general permits governs an area set out by the jurisdictional boundaries of the MS4. A jurisdictional MS4 application must include a Storm Water Management Program designed to reduce the discharge of pollutants from storm water in the drainage system to the maximum extent practicable using the best management practices. This storm water program extends throughout the jurisdictional area. There are six minimum requirements of the program:

- Public education about storm water impacts;
- Public participation and involvement in the development of the program;
- An Illicit Discharge Elimination Program (IDEP), to prohibit dumping of such substances as motor oil, household hazardous waste, grass clippings, and animal wastes, among others, into the drainage system;
- Post-construction storm water management program for new development and redevelopment projects to address impacts of increasing urbanization on drainage systems;
- Construction storm water runoff controls for activities disturbing one acre or more, including compliance with soil erosion and sedimentation control requirements; and
- Pollution prevention and good housekeeping for municipal operations, such as roadway construction and maintenance, storm sewer labeling, and reduction or elimination of fertilizer and pesticide use on public lands.

The other MS4 general permit addresses areas where there is an existing watershed management plan or where permittees agree to work together to develop a watershed management plan. Both the watershed management plan and a public participation process are permit requirements dependent on all permittees in the watershed working together. There are also requirements that the permittees must implement separately within their jurisdictions, including an IDEP, a public education program, and a storm water pollution prevention initiative. The watershed management plan should establish goals to address any water quality problems and commitments from the permittees to implement actions to meet those goals related to wet weather discharges from the MS4. The storm water pollution prevention initiative should set out the details of the actions required of the permittees in the watershed management plan.

Control of CSOs and SSOs

In addition to regulating storm water, the DEQ addresses other significant pollution problems related to wet weather through control of combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs). Combined sewer overflows are the result of older sewer systems designed to carry both domestic wastewater and storm water. Problems with CSOs result when wet weather brings more storm water into the system than it was designed to handle. The result can be raw sewage or partially treated sewage flowing with storm water and being discharged into surface waters.

The EPA has established minimum controls for CSOs, which include:

- Proper operation and regular maintenance programs for the sewer system and the CSOs;
- Maximum use of the collection system for storage;
- Review and modification of pretreatment requirements to assure CSO impacts are minimized;
- Maximization of flow to the POTW for treatment;
- Prohibition of CSOs during dry weather;
- Control of solids and floatable materials in CSOs;
- Pollution prevention;
- Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and
- Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

Michigan adopted the Michigan State-Wide Combined Sewer Overflow Permitting Strategy in January 1990. Phase I of the strategy requires operational improvements to minimize overflows, sampling and other monitoring conditions to establish a strong data base on the existing system, and construction of interim CSO control projects where feasible. Under state statute, all CSO communities are required in the NPDES permit to notify the DEQ, local health departments, and local newspapers whenever there is a CSO discharge to the surface waters. The local health department will issue advisories if needed. Phase I also requires development of a final program leading to elimination or adequate treatment of CSOs. The final program must contain a fixed-date schedule to achieve the maximum feasible progress in accomplishing these corrections, taking into account technical and economic considerations.

Phase II is the implementation of the final program in subsequent NPDES permits. The schedule developed under Phase I is incorporated into the NPDES permit, and the permittee is required to proceed with implementation to eliminate or adequately treat CSOs. Implementation will be accomplished on a case-by-case basis with professional staff of the department working closely with municipalities to define appropriate corrective programs.

SSOs are discharges of raw or partially treated sewage from municipal sanitary sewers designed to carry only sewage. Generally, these discharges occur during wet weather and can be the result of cracks in the system, roof drains or other storm drains being improperly connected to the sanitary sewer system, groundwater infiltration into the system, system failures from inadequate capacity, sediment blockages, equipment failures, or power outages. Allowing overflows from a sanitary sewer is illegal.[10] The DEQ maintains a list of SSOs and the receiving waters, which is available on the DEQ website. In Michigan, most of the State Revolving Fund project monies have been used to correct problems with CSOs and SSOs.

Concentrated Animal Feeding Operations (CAFOs)

A recent area of interest has been discharges from concentrated animal feeding operations (CAFOs). These are agricultural operations where animals are raised and

sold for commercial purposes, such as dairies, hog farms, or turkey farms. Concerns regarding CAFOs stem from the impacts from animal wastewater and storm water that comes in contact with animal manure entering surface waters. Michigan's regulation of CAFOs at the present is governed by two general permits – one for existing operations and one for new large CAFOs. Operations that do not fall under one of the general permits – such as new CAFOs that have two times the number of animals for large operations – will need an individual permit.[11] A farm operator may request a finding of no potential to discharge pollutants to waters of the state. Before making such a finding, the DEQ issues a public notice of the request, along with a fact sheet. If the DEQ denies the request, the farm operator has 30 days to seek coverage under a permit.[12]

Some minimum standards are applied to the farm operations through the NPDES permits. For example, buffers should exist around feedlots, manure storage areas, and land application areas. Management practices should divert storm water and clean water away from feedlots, holding pens, manure storage areas, and wastewater storage systems. Animals should not have uncontrolled access to surface waters. Dead animals should be handled so as not to come in contact with surface waters.

Both general permits and individual permits require the development of a Comprehensive Nutrient Management Plan (CNMP) as outlined in the permits. The CNMP describes the farm operation (including a map of the farm, the production area, and storm water flow patterns), the amount of animal manure and wastewater output, how outputs are collected and stored, the nature of the storage structures, management practices for any land application of manure, feed management, chemical management, the emergency action plan to address spills or system failures, and how records will be kept regarding CNMP implementation.

The permits also include the inspection, monitoring, and record keeping requirements for the farm operator. The CAFO must have a certified operator. The CNMP must be approved by a certified CNMP provider. The farm operator must submit an annual report to the DEQ that includes the number of animals, the amount of manure and wastewater produced over the year, the number of acres used and available for land application, information regarding any discharges of manure or wastewater during the year, and a reaffirmation that the CNMP was approved by a CNMP certified provider. If you would like to learn more about a CAFO in your watershed, you can request a copy of the CNMP and annual reports from the DEQ.

Photo by K. Beyer © 2005

Photo by K. Beyer © 2005

Section 401 Certification

Under Section 401 of the Clean Water Act, any applicant for a federal permit that involves activities which may result in discharges into Michigan's surface water must receive certification from the DEQ that the project will not violate Michigan's water quality standards. The certification may include effluent limitations, monitoring requirements, reporting, and conditions such as those found in other DEQ NPDES permits. Section 401 includes public notice and public hearing provisions for the state's certification process. The statute allows a waiver of the certification requirement if the state does not act on the certification request in a reasonable time, no longer than one year.[13] If the state certifies the project or certifies it with conditions, the certification is submitted to the federal permitting agency for use in its permitting process. This process also applies to federal agencies that may engage in activities that could result in discharges, such as navigational dredging projects operated by the U.S. Army Corps of Engineers.[14] Legal challenges to a Section 401 certification can be pursued in state or federal court, depending on the nature of the challenge.

Water Quality Trading

Michigan completed a water quality trading demonstration project on the Kalamazoo River in 2000. The premise of the project was that a market-based approach to improving water quality within a watershed will optimize the associated costs and provide greater regulatory flexibility. The demonstration project focused on phosphorus reductions from point and non-point sources. Voluntary reductions by non-point sources were used by point sources to comply with existing NPDES water quality-based effluent limitations for phosphorus. However, two non-point source reductions were made for each one used by point sources to benefit the environment and as a margin of safety.[15] After the demonstration project was completed, the Great Lakes Trading Network – now known as the Environmental Trading Network – was formed to be a clearinghouse for information on trading programs in the region.

Opportunities for Participation

Several opportunities for participation in the permitting process have been noted in this chapter. They include:

- Participating in a local POTW's public process for development of its Industrial Pretreatment Program.
- Tracking information about CSOs or SSOs in your area and requesting action to address problems.
- Participating in the development of a local MS4 Storm Water Management Program.
- Tracking any CAFO permit applications in your watershed and commenting on any requests from CAFOs for findings of no potential to discharge to surface waters.
- Reviewing and commenting on requests for Section 401 certification.

Photo by K. Beyer © 2005

[1]Administrative Rule 323.1057(1).
[2]Administrative Rules 323.1201 through 323.1221.
[3]Administrative Rule 323.1219.
[4]Before the new mercury testing method, the LCA was 30 ng/liter. See Mercury Permitting Strategy, Implementation of Method 1631 For Fiscal Years 2005-2009, May 14, 2004, available on DEQ website, Surface Water page.
[5]Administrative Rule 323.2301 through 323.2317; 40 CFR 403.1 through 403.20.
[6]Id.
[7]Administrative Rules 323.2401 through 323.2418.
[8]Administrative Rule 323.2403.
[9]Administrative Rule 323.2161a.
[10]DEQ's authority stems from NREPA, Part 31, Water Resource Protection, and Part 41, Sewerage Systems.
[11]Administrative Rule 323.2196.
[12]Administrative Rule 323.2196(4).
[13]33 USC § 1341.
[14]Michigan Department of Environmental Quality, Certification Under Section 401 of the Federal Clean Water Act, Upper Saginaw River Navigational Dredging Project and Associated Dredge Materials Disposal Facility, Department of the Army, Detroit District, Corps of Engineers, issued March 16, 2005.
[15]Water Quality Trading webpage on DEQ website at www.michigan.gov/deq. Then select "water," then "surface water," and then "water quality trading."

CHAPTER 6

Ensuring Enforcement

Monitoring and Reporting

Each permit – whether individual or general – has provisions for monitoring and reporting. The monitoring required in permits is the responsibility of the permittees. They may conduct their own monitoring and analysis, or they may contract with someone else to provide these services. The permits contain standard language about self-monitoring reports. Many permits require the permittee to submit reports to the DEQ monthly. These reports include both monthly summaries called discharge monitoring reports (DMRs) and reports on individual daily results. These reports can be submitted electronically or on paper. Failure to submit a monthly report on a timely basis is a permit violation.[1] Permits state that all records must be retained for three years.

The permits also require the permit holder to file compliance notifications for every compliance action noted in the permit. Noncompliance that might endanger human health or the environment (including exceeding any maximum daily concentration discharge limitations) must be reported verbally within 24 hours. Any other instance of noncompliance shall be reported with the monthly monitoring reports.

For discharges that are relatively minor or uncomplicated, the permit may allow retained self-monitoring. The permittees are required to certify once a year that: 1) all retained self-monitoring requirements have been fulfilled and a year-to-date log has been maintained; and 2) the application on which the permit is based still accurately describes the discharge. These retained self-monitoring reports are considered public information and must be shared with the public upon request.

The DEQ provides DMR data to the EPA and it is available to the public. Monitoring and compliance information is available through the EPA website and its Enforcement and Compliance History On-line (ECHO) service – https://echo.epa.gov/. This service has information on air, hazardous waste, and water permitting. Information about NPDES permits is collected through the Permit Compliance System (PCS). Searches can be done by permit number, type of facility, watershed, and county. Once you have identified a specific facility, you can review the compliance reports, numbers of inspections, and information about compliance under past permits among other information. However, the information available through these services may not be current or accurate so be sure to check the information with the DEQ staff. The DEQ is planning to make NPDES monitoring and compliance information available through its website.

For AWR...
A copy of the revised administrative rules, wastewater report forms, instructions, and other related program information can be obtained at: www.michigan.gov/deqwater

select "Annual Wastewater Reporting". Obtain additional AWR information by contacting the Environmental Assistance Center at (800) 662-9278.

Some facilities that discharge wastewater into the surface waters of the state or to a sewer system must file an annual wastewater report (AWR).[2] As defined in the regulations for this provision, a "person" does not include a municipal corporation, a government unit or an agency, automotive service stations, laundromats, or car washes. The AWRs are due on August 1st for the previous reporting year. This is a state reporting requirement (not federal) and the reports do not become part of PCS or ECHO. The AWRs should not be confused with NPDES permit monitoring and reporting requirements.

Compliance and Enforcement at the DEQ

All NPDES permits contain standard language that requires the permittee to allow the DEQ to enter the property where the effluent source is located, to review and copy any records required by the permit, to sample the effluent, and to inspect any equipment or facilities governed by the permit.[3] The DEQ district compliance investigators conduct inspections of facilities throughout the year. There are several types of inspections, but they can be separated into high-level and low-level categories. High-level inspections usually are detailed inspections that evaluate the permittee's compliance with all aspects of the NPDES permits, and may include independent sampling and analysis of effluent by the DEQ. Low-level inspections generally have a narrow focus of interest or provide for a general evaluation of the facility. Any of these inspections may be unannounced.

There are various types of inspections associated with the NPDES permit program:

- Reconnaissance Inspection
  A reconnaissance inspection is a non-sampling inspection that includes a walk-through with visual observations of the NPDES facility and a discussion of permit requirements.
- Compliance Evaluation Inspection
  A compliance evaluation inspection is a non-sampling inspection designed to verify permittee compliance with NPDES permit self-monitoring requirements, compliance schedules, and other permit conditions and requirements.
- Compliance Sampling Inspection
  A compliance sampling inspection incorporates essentially all the elements

of an evaluation inspection, but includes sampling as well. These inspections are more resource and time intensive than a compliance evaluation inspection. They are used to support permit reissuance or when independent sampling and analysis are warranted.

- Pretreatment Compliance Inspections
  The pretreatment compliance inspection evaluates POTW compliance with the commitments contained in the approved pretreatment program.

- Pretreatment Audit
  The pretreatment audit assesses the compliance of the POTW's entire approved pretreatment program (legal authority, procedures, commitments, administration, monitoring, and enforcement) with respect to current state and federal regulations. The audit is more comprehensive and resource intensive than the pretreatment compliance inspection.

- Industrial Pretreatment Program Reconnaissance Inspection
  These inspections focus on compliance resolution regarding a POTW's Industrial Pretreatment Program.

Many inspections are done in conjunction with the 5-year permit period. For example, the current approach is that major facilities generally receive 2 high-level inspections and three low-level inspections each 5-year cycle; minor facilities generally receive one high-level inspection and one or two low-level inspections each five-year cycle. Facilities having compliance or reporting problems may also receive more inspections. Occasionally, the EPA will conduct inspections of major sources in Michigan. In some instances, the DEQ compliance staff will conduct a "multi-media" inspection, meaning that it will review the air, water, hazardous waste, and other environmental management requirements for the facility. The DEQ compliance staff document each inspection with a written report, and determine appropriate follow-up actions if problems are identified.

The DEQ pursues compliance through a progressive series of actions, starting with the lowest appropriate enforcement action. Depending on the circumstances, an informal district-level letter may be sent to the facility such as a Notice Letter or a Notice of Noncompliance. These letters state the permit and statutory requirements, an assessment of the findings regarding the facility, and a schedule of actions that need to be taken to regain compliance. The DEQ district compliance staff can also escalate actions to the Enforcement Unit, where an administrative settlement can be pursued, a Director's Final Order issued, or legal action initiated in the appropriate court.

Violations may be characterized as civil, criminal, or both. Civil actions often are resolved through administrative orders, such as an Administrative Consent Order, a Penalty Order, or a Director's Final Order. If the matter cannot be resolved through an administrative order, it may be referred to the Michigan Attorney General or the EPA for legal action in state or federal court.

Photo courtesy of Tip of the Mitt Watershed Council

Referral for criminal enforcement indicates that the DEQ enforcement staff believes that an environmental crime has occurred – someone has committed an intentional, knowing, reckless, or grossly negligent violation of a state or federal environmental law or rule. The DEQ's Office of Criminal Investigations handles criminal investigations. They conduct their investigation with the assistance of the appropriate environmental specialist in the district office. They handle approximately 150-200 cases per year.

Each DEQ district and field office has a licensed police officer with special training in environmental crimes from the Office of Criminal Investigations. These officers pursue investigations, provide prosecution support, and ensure clean up and compliance.

The DEQ can pursue civil and criminal enforcement of violations at the same time. One important difference between civil and criminal enforcement actions is that criminal enforcement can include time in jail for the violation.

Some civil and criminal cases can involve an assessment of penalties. Under the Clean Water Act and the NREPA, a permit violation can result in a penalty of between $2500 and $25,000 per day and up to two years imprisonment in criminal cases. Where the court finds that the actions posed substantial endangerment to public health, safety, or welfare, additional penalties between $500,000 and $5,000,000 can be imposed and imprisonment up to five years, depending on whether the matter is civil or criminal and the severity of the violation.[4] As part of the resolution of a civil enforcement action, the permit violator can propose Supplemental Environmental Projects (SEPs). These are voluntary, environmentally-beneficial projects undertaken by the violator as part of a settlement agreement with the DEQ. The SEPs allow the violator to use a portion of the penalties owed to improve the community. The violator proposes the SEPs but the DEQ must approve the projects.

Citizen Involvement in Protecting Our Waters

Citizen involvement in enforcement is critical to effective protection of water quality. Citizens can get involved in several ways, from engaging in monitoring programs to reporting violations. Citizens can also pursue legal remedies, a topic discussed in more detail in Chapter 7.

Monitoring

Water quality monitoring includes a wide range of activities involving observation and measurement of selected features in order to assess the health of the aquatic ecosystem, determine its ability to support human uses, detect early warnings of changes, gather information about causes of problems, and determine whether management goals have been achieved.

A well-designed citizen-driven water quality monitoring program can help fill important data gaps. It also serves to educate and involve communities in water quality protection. A good citizens' monitoring program involves:

- Determining why you want to collect information;
- Choosing indicators, methods, and sites;
- Determining the time of year, day and frequency of monitoring; and
- Assuring the quality of results.

Partnerships with colleges and universities can be invaluable in designing and implementing a monitoring program. Discussion with your local DEQ field office could help identify locations or parameters that need to be monitored.

Visual monitoring is also important. Point sources discharging pollutants may remain undetected or unpermitted. Regular visual monitoring of a water body, documented through photographs or videotape, can help determine where and when an illegal discharge is occurring. Visual monitoring during wet weather can help identify problems related to capacity, such as with CSOs and SSOs.

The DEQ maintains a Pollution Emergency Alerting System (PEAS). Any person can call the toll-free 24-hour number and report information about pollution emergencies. During working hours, the information will be directed to the appropriate DEQ district office. During non-working hours, the complaint will be recorded and the DEQ staff on-call will decide if it requires immediate attention or whether it can be referred during regular business hours.

***P**ollution*
***E**mergency*
***A**lerting*
***S**ystem*
1-800-292-4706

Reporting Potential Violations

Potential violations should be reported to the DEQ. Citizen complaints often trigger inspections and enforcement actions. Particularly with limited enforcement staff, citizens can serve as the watershed's "eyes and ears" to help protect water quality. But before reporting a potential violation, make sure you have the necessary information. Inaccurate or incomplete information can result in a waste of valuable staff time. Try to gather the following information:

- Location of the suspected violation;
- Description of the activities and dates when they occurred;
- Name of owner or facility operator engaged in activity; and
- NPDES Permit number if available (keep in mind that many discharges are governed by general permits which may not be listed on the DEQ website).

Report the potential violation to your local DEQ district or field office. Consider sending a letter with the information as well. Your letter will serve as a reminder to the DEQ staff and it may be useful documentation if you need to follow-up and encourage enforcement action. Potential violations that are reported by more than one individual tend to get more attention, so encourage other citizens interested in water quality to contact the DEQ as well.

Photo by K. Beyer © 2005

[1]Trombetta v Detroit, Toledo & Ironton R. Co., 81 Mich. App. 489, 265 NW2d 385 (1978) (finding that manipulating and adjusting pollution control reports violated law).

[2]MCL 324.3111.

[3]MCL 324.3105.

[4] MCL 324.3115.

CHAPTER 7

Effective Participation in NPDES Permitting

Citizen participation in NPDES permitting is essential to effective implementation of the protections set out in federal and state law. The Clean Water Act requires public participation in many important decisions. The more people get involved, the better government officials and stakeholders will understand the public's interest in Michigan's water resources.

There are numerous opportunities throughout the process to request information, comment on standards, object to permit conditions, consider compliance history, monitor performance, and review required reports. With respect to non-point source pollution, addressing the problems in your watershed really depends on public involvement, since these sources are diffuse and varied. And non-point source pollution problems may be among the most significant ones affecting water quality in your watershed. Many of these opportunities have been mentioned in previous chapters, and some will be discussed in more detail in this chapter.

Equally important as using available opportunities is becoming an educated and informed advocate so that your participation is beneficial and effective for all parties. Citizens need to take their role in the process seriously and participate with integrity. Consider the following guidelines to help ensure that the public's participation is given the respect that it deserves:

- Base your position on good information and sound policy analysis;
- Gather information in legal ways;
- Respect the legal rights of others, including a potential violator;
- Don't use NPDES permitting as a "red herring" to further other goals that are not related to protecting water quality; and
- Continually work to improve and expand your knowledge of your watershed, the state water quality standards, and the regulations that are designed to protect our waters.

With these guidelines in mind, you are ready to become an effective participant in the NPDES permitting process. Citizens provide valuable information, and your participation will help protect water quality in your watershed.

STEP ONE – Get to Know Your Watershed

The first step to effective participation is getting to know your watershed. Your focus may be a small tributary to a larger river or an inland lake; it may be

much broader, including several watersheds within a region. Gather as much existing information as you can – look for information at your library, on the internet, at your local governmental offices, from universities and colleges in the state, and from local or regional watershed organizations. Collect information from permit holders in your watershed about their environmental policies. Think broadly about groups, organizations, companies, and corporations that might be actively participating in water quality issues. For example, groups interested in fishing and hunting waterfowl, local governments interested in clean water for their communities, and volunteer environmental clean up programs sponsored by corporations all may be great resources since these activities promote good water quality. The Michigan Department of Natural Resources may have information about aquatic and wildlife species in your watershed. The appendices include a list of some of the organizations involved in water quality issues in Michigan.

The EPA "Surf Your Watershed" is at https://www.epa.gov/waterdata/surf-your-watershed.

Envirofacts Data Warehouse is at www.epa.gov/enviro/.

Also check out "Our Wetlands, Oceans, and Watersheds" at www.epa.gov/owow/ for additional watershed information.

A good place to start is the EPA website, which includes a feature called "Surf Your Watershed." You can search this data base by zip code, city, or county, and it will give you some initial information about the water resources in your area of focus. Some of the information may be dated, so you may need to find more recent information.

And ask the DEQ district or field office near you for information they have on your watershed. A list of DEQ offices is included in the appendices. You can ask for information about aquatic life in the watershed, impaired waters status, and development of TMDLs. Also, the DEQ website has a substantial amount of information. The map of watersheds, their rotation in the 5-Year Basin Plan, the DEQ's activities in that watershed for each year of the 5-Year Plan are included on pages 60 and 61 of this chapter.

Any distinct information that is not immediately available on the DEQ website or at the DEQ office can be requested under the Freedom of Information Act (FOIA).[1] Sometimes the DEQ staff will ask you to file a FOIA request to get documents from their files. Ask the staff how you should identify the document – such as the title of the document and where the file can be found. Requests involving only a few pages may be handled directly, while more extensive file searches and requests may require a formal written letter. Written requests should include as much information as possible about the information you are seeking.

DEQ FOIA Requests

Mail or fax your written request to:
FOIA Officer
Michigan Department of Environmental Quality
P.O. Box 30473
Lansing, MI 48909-7973
Phone: 517-241-8010
Fax: 517-241-7428

(Include your name, return address, and daytime telephone number so that DEQ staff can contact you for clarification if needed.)

There are a few exceptions under FOIA. For example, the DEQ cannot provide any information that is proprietary to the applicant, such as trade secrets. Personal information, preliminary decisions, and communications regarding potential or pending litigation may all be withheld. Once the DEQ has compiled the documents relating to your FOIA request, you can either view the documents at the appropriate DEQ office or ask for the documents to be copied. The DEQ may charge for copying, mailing, and labor costs. Where the search would result in unreasonably high costs, the DEQ may charge for searching, examining, and reviewing to separate exempt information from non-exempt information. Because the costs can be high, indicate in your written request that you would like a cost estimate before the DEQ actually conducts the search and copies documents.

STEP TWO – Get Information about Permits

The next step is getting information about existing permits in your watershed and letting the DEQ know that you want information about new or modified applications for NPDES permits.

The DEQ web address is www.michigan.gov/deq.

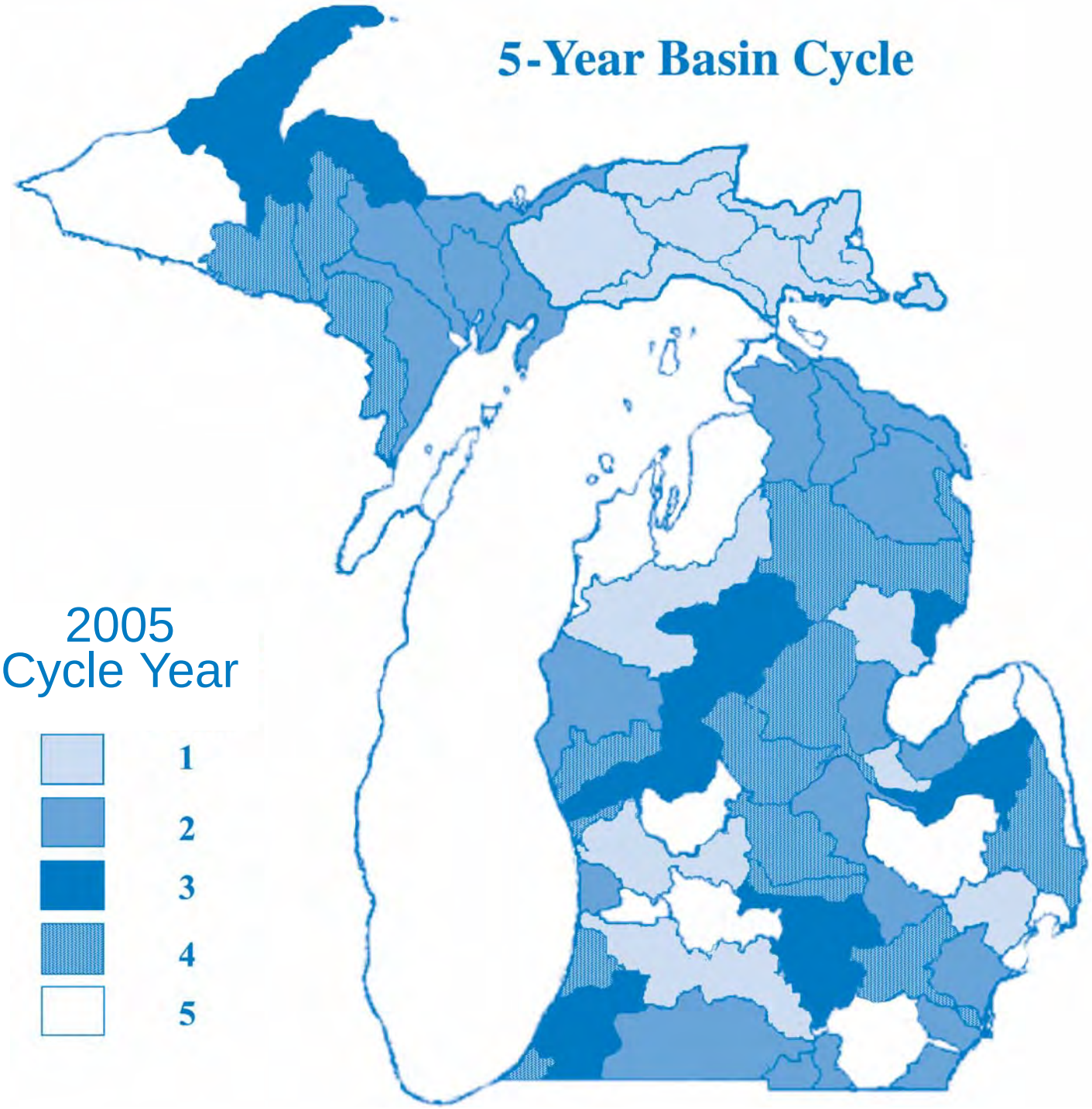
Michigan's 5-Year Basin Plan means that all existing permits in a watershed will be reviewed for reissuance during the same year. Find out where your watershed is in the 5-year cycle and plan your participation accordingly. For the year when permits will be reviewed, keep in mind that existing permits state that applications for reissuance should be filed six months before the expiration date.

For information about existing individual permits, check the DEQ website's list of existing NPDES permits. If you can't find the information you need regarding a specific permit, ask your DEQ district or field office for copies of the permit, the application, and the fact sheet (available for sources discharging 500,000 gallons per day or more). The fact sheet describes the location and the discharge, and outlines the water quality standards, the effluent limitations, and any mixing zones.[2] You can review compliance information regarding the existing permit, some of which may be available on the EPA's ECHO system.

It is always easier to deal with questions and concerns as early in the process as possible. You do not need to wait for a public notice to contact the DEQ regarding an application. If you have questions or concerns about the water quality in your watershed or about permit provisions, consider requesting a meeting with the DEQ staff at the district or field office involved in NPDES permit review during the pre-application period. You may also want to consider requesting a public meeting. Anyone can request a public meeting at any time during the permitting process, not just during the public comment period. A public meeting provides an opportunity for questions and answers, and noting concerns about the draft permit. However, the decision about whether and when to hold a public meeting is at the discretion of the DEQ.

Yearly Watershed Activities Under the 5-Year Basin Plan

YEAR	Permit Compliance Inspections	Water Quality Monitoring Activities	Issue Permits Certificates of Coverage
1	• Major permit compliance evaluation inspections • Minor permit compliance reconnaissance inspections • Federal and Michigan IPP inspections • Biosolids compliance reconnaissance inspections		
2	• Major permit compliance reconnaissance inspections • Federal IPP inspections • Biosolids mid-level compliance inspections	• Road stream crossing surveys • Monitoring recommendations requested from stakeholders • Monitoring needs and priorities identified	
3	• Major permit compliance sampling inspections • Minor permit compliance sampling or evaluation inspections • Federal IPP compliance inspections • Biosolids audits	Initiate point source, NPS, TMDL, ambient monitoring, and trend monitoring studies including: • Discharge Monitoring • Whole effluent toxicity monitoring • Dissolved oxygen monitoring • Water & sediment chemistry monitoring • Fish & wildlife contaminant monitoring • Stream flow monitoring • Inland lake monitoring • Bacteria monitoring • Special Studies	
4	• Major permit compliance reconnaissance inspections • Federal IPP compliance inspections • Biosolids compliance reconnaissance inspections	• Update electronic databases • Prepare staff reports • Develop TMDLs	• Groundwater Discharge Permits, NPDES individual permits, and storm water COC reapplications received and reviewed
5	• Major permit compliance reconnaissance inspections • Minor permit compliance reconnaissance inspections • Federal and Michigan IPP inspections • Biosolids mid-level compliance inspections	• Issue TMDLs • Develop Water Quality Based Effluent Limits (WQBEL) for permits	• Permits and storm water COCs reissued


5-Year Basin Cycle
2005
Cycle Year
1
2
3
4
5

For information on new individual permits, you can submit a request to the DEQ to receive public notices on new permits and fact sheets for sources discharging more than 500,000 gallons per day. The request must identify the watershed for which you would like information and your address. The request must be sent to the DEQ office in Lansing and it must be renewed each December.[3] The request will also insure that you receive any public notices regarding applications to reissue existing permits. The list of permits on public notice is also available on the DEQ website. Notices regarding individual NPDES permits must be circulated in the geographic area of the discharge by posting on the facility's premises, posting on a public building near the discharge location, or publishing in a newspaper of general circulation in the area. They are also on file at the closest DEQ district office and in the DEQ Lansing office.[4]

The public notice should include:

- Name and address of the applicant;
- Permit number;
- Date of posting for public notice;
- Address and telephone numbers for DEQ contacts;
- Brief description of the applications activities and operations;
- Name of the receiving waters;
- Statement of the DEQ's tentative determination on the application; and
- Procedure for formulation of final determination.[5]

The EPA's EnviroFacts Data Warehouse provides information on NPDES permits by zip code, city, or county. The database includes information on the permit status, effluent limitations, compliance reporting, and enforcement actions.

The DEQ's Water Bulletin, available on the DEQ's website, lists recent actions on permits, certificates of coverage, and notices of coverage. The Bulletin includes some basic information about each action such as the applicant, the county where the discharge will occur, and the DEQ contact for additional information.

Photo courtesy of Tip of the Mitt Watershed Council

STEP THREE – Review and Analyze Draft Permits

Once the DEQ issues a draft permit for a new source or an existing source, review and analyze it carefully. In addition to reviewing the application and draft permit, you should ask for information on the receiving waters, including a summary of stream surveys, water quality data, and monitoring information. If the application does not include an antidegradation demonstration and one is required, ask the DEQ for a copy. Review the monitoring and reporting requirements, and special conditions, keeping in mind any downstream problems or upstream discharges.

For existing sources, review the reasonable potential analysis, which includes an analysis of the likelihood that the effluent will contribute to or cause a violation of water quality standards. Compare the provisions of the old permit to those in the draft permit. Make sure the effluent limitations in the draft permit are at least as restrictive as those in the old permit – effluent limitations that are less restrictive may violate the antibacksliding rule unless the increase qualifies for one of the limited exceptions under the rule. If the applicant has had problems with compliance, ask the DEQ staff what provisions in the draft permit are designed to address these problems.

For all surface waters, the basic question to keep in mind while reviewing a draft permit is whether the permit provisions will protect the designated uses. In addition, the antidegradation policy requires that discharges should not impact existing uses of the receiving water, or degrade high quality waters. For new point sources and sources increasing the discharge of a pollutant, ask the DEQ staff how the draft permit provisions will work to protect existing uses and high quality waters. Additional questions to consider when reviewing a draft permit are included in the "Questions to Ask When Reviewing a Draft NPDES Permit" at the end of this chapter.

STEP FOUR – Take Action

The public has 30 days to comment on a draft permit. Comments should be sent to the address on the public notice. In addition, any interested party can request a public hearing on the draft permit during the comment period. The reasons for requesting the hearing, the party's interest in the discharge, and the parts of the permit requiring a public hearing must be included in a petition for a public hearing. If the DEQ believes the petition establishes sufficient cause or that there is sufficient public interest in the permit, it may schedule a public hearing.[6]

Public hearings are not question and answer sessions. They are designed to allow people who have comments on the permit to provide those comments verbally, and for the DEQ staff to hear those comments. The DEQ staff will not respond to those comments at the hearing. After the hearing, the DEQ staff will consider the comments when making its final decision on the permit.

Public hearings are not question and answer sessions. Public meetings are better suited for asking questions and getting answers.

Comments – whether provided in writing, at a public hearing, or both – are important tools to help make your views known. If no comments are submitted, the permit will most likely be issued as it appears in the draft. Once issued, it is difficult to get the permit changed. You may have information about the aquatic life or existing uses of the receiving waters that the DEQ does not have or has not considered. In addition, submitting your comments helps establish your interest in the permit and it may preserve your rights to challenge or enforce the permit in the future.

When commenting on a draft permit, keep in mind that the DEQ has already made a preliminary determination on the application and you must provide convincing arguments and supporting evidence for the DEQ to consider changing those provisions or conditions. It is to your advantage to share as much information as possible with the DEQ because the staff will need compelling reasons to change the permit and defend its decision when challenged by the applicant. Comments should not always be negative or critical – you should include comments on aspects of the permit that you support.

Tips for Commenting

1. Don't forget:
   - Your name and address (and Organization's name if applicable)
   - Permit Number & Public Notice Number
   - Your interest in the permit

2. Comments should be well-organized and concise. Consider using headings if you are going to address multiple concerns. Your comments at a public hearing should also be submitted in writing – the written version can contain more information and the verbal version can be more direct.

3. Get information about permits early. Comment periods are short.

4. Read the whole draft permit, including the fine print. Make a list of your questions and concerns, and then prioritize them.

5. Ask questions and discuss your concerns with the DEQ staff. You do not need to wait for a public hearing or rely on written comments to convey your concerns. Asking questions about legal gray areas and scientific uncertainty can encourage decision-makers to seek more information or to err on the side of caution. Try to get all your questions answered before submitting your comments.

6. Make sure your comments are substantive. Comments should be based on facts, not opinions. Refer to portions of the laws and regulations that support your comments and cite sources for the facts. Your comments will be viewed as credible and decision-makers will have the information they need to address the concerns you raise.

7. Indicate what the DEQ should do in response to your concerns.
   Example:
   "The required antidegradation analysis failed to consider impacts to fish species known to exist in the area, so the draft permit should be reconsidered."

8. Get the word out. A large turnout at a public hearing and a large number of written comments makes clear to the DEQ that the public is concerned about the draft permit. While changing the draft permit provisions requires legal and factual support, there is always room for heartfelt testimony about the importance of our water resources.

9. Consider summarizing your points at the beginning and end of your comments if you have mentioned multiple concerns.

10. The time to present your comments at a public hearing is often limited to five minutes. Work with others before the hearing to ensure that all the essential points are made. In addition to allowing for more total comment time, this approach gets more people involved.

11. Always bring written copies of your comments to the public hearing to give to the DEQ hearing officer and any members of the press. Be prepared to provide copies of supporting information when asked.

12. Make sure to submit your final and comprehensive written comments before the end of the public comment period. Consider sending a copy of your letter to the EPA and your local elected officials.

STEP FIVE – Legal Remedies

After the DEQ issues a final permit, you may still have concerns about its impacts on water resources. Any interested party aggrieved by the permit may file a petition for a contested case within 60 days of the issue date. A contested case provides for administrative review of the DEQ's decision. The proceeding is conducted by the DEQ's Office of Administrative Hearings before an administrative law judge (ALJ). It is a less formal proceeding than a court challenge, but, in many respects, it is similar.

The DEQ will notify the permittee that a petition has been filed regarding the permit, and that the permittee may intervene as a party in the contested case. Generally, the permittee will decide to intervene and have an attorney present. After the petition is filed, the ALJ will ask the parties whether there is a possibility of settlement, and encourage negotiations. However, any party can request that a hearing date be set. The ALJ will set a prehearing conference where the ALJ, the DEQ, and the other parties discuss scheduling of the hearing, issues to be addressed in the hearing, and other preliminary matters. The ALJ will set a schedule when all witnesses and exhibits must be shared among the parties and when the contested case hearing will be held.

At the hearing, the party contesting the permit presents evidence through witnesses and exhibits about why he or she believes the permit is flawed, and other interested parties, such as the DEQ and the permittee, can challenge that evidence and present their own evidence. At the end of the hearing, the ALJ will draft a Proposal for Decision for the Director of the DEQ to review. The Director can accept the proposed decision, reject it, or modify it. The Director's decision is the final decision of the agency.

If you still have substantial concerns about the decision, it can be challenged in state court under the Michigan Administrative Procedures Act and the applicable provisions of NREPA. Under Michigan law, you will have 21 days from the date of the Director's final decision to file a complaint in state court. State court challenges can also seek review under the Michigan Environmental Protection Act (MEPA).[7] MEPA provides that any person, organization, or governmental body may bring a legal action to prevent or minimize the pollution, destruction or impairment of the environment. Where the impacts to waters of the state affect an adjacent landowner or a riparian landowner, common law doctrines governing nuisance, riparian rights, and trespass may be applicable.

Challenges about actions of the EPA or challenges about violations by federal agencies of their NPDES permits may be brought in federal court under the Clean Water Act's citizen suit provision.[8]

Legal challenges can be an important tool for protecting water quality in Michigan. Anyone considering litigation concerning water quality and the NPDES program should consult an attorney knowledgeable in environmental law. In addition to understanding the area of law, proving the case often requires specific and credible scientific information. In some cases, it may require engineering or economic information. This information is usually presented by expert witnesses. Where such information is essential to the case, legal challenges to protect water quality will likely be unsuccessful without credible expert witnesses. Pursuing this kind of litigation may require substantial resources. Also, the risk of an adverse decision that would be more damaging to water quality must be carefully considered. Nonetheless, in some cases, litigation is the only way to ensure consistent application of the law to protect the waters of the state.

STEP SIX – Follow Up

After your review of the draft permit is complete, there are other avenues for participation. The permittee may file a petition for a contested case to contest certain conditions. If the petition challenges provisions of the permit that you support, you may want to intervene in the contested case. Likewise, if the permittee files a challenge in state court, you may want to consider your options for participation, from intervening as a party to filing an amicus brief outlining the reasons why the court should uphold the more protective provisions in the permit.

Once the permit becomes final, you can monitor compliance with the permit provisions. Maintain a good relationship with DEQ staff and the permit holder so that you can discuss concerns about compliance and appropriate responses to violations. You can check the EPA's ECHO website for compliance information but keep in mind that it may not be up to date.

Also, the DEQ 5-year Basin Plan includes activities throughout the five-year cycle. Keep track of the activities in your watershed in each year of the cycle. If the DEQ schedule does not include water quality monitoring activities you believe should be done, consider working with partners to conduct those monitoring activities, as discussed in Chapter 6.

Beyond Permits: Other Ways to Participate in the NPDES Program

Non-point Source Pollution

Non-point source pollution occurs when rain falls or snow melts and carries sediment, chemicals, oils – whatever is on the land or hard surfaces – into our lakes, rivers, and streams.

While point source permits are an important part of the NPDES program, other parts of the program benefit from public participation. Some of the most significant problems facing Michigan waters stem from non-point source pollution, which is directly related to land use. Addressing these problems effectively depends directly on public involvement.

In 1987, the Clean Water Act was amended to address, among other topics, non-point source (NPS) pollution, requiring all states to conduct a non-point source assessment and adopt a strategy to address these problems. This aspect of the amendments was driven by the recognition that NPDES permits were controlling most point source pollution and that non-point sources were causing most of the remaining water quality problems.

Michigan completed its assessment and adopted a non-point source management plan in 1988. The assessment showed that some significant sources of non-point source pollution in urban areas included runoff from hard surfaces, and the construction and maintenance of golf courses. In rural areas, some significant sources were failed septic systems, stream bank erosion, agricultural erosion, and construction activities. Non-point source pollution resulted in increased sedimentation, degradation of fish habitat, and increased weed growth and algae blooms.[9]

One aspect of Michigan's plan was the development of watershed protection plans to help implement best management practices (BMPs) for activities likely to cause non-point source pollution. BMPs are designed to prevent pollutants from entering the

the water source, and they are usually implemented on a voluntary basis. The DEQ has used federal funds made available through the Clean Water Act Section 319 to fund the development of watershed protection plans throughout the state. This approach is consistent with the EPA's current policy, which encourages a focus on watershed restoration projects for non-point source grants. A list of approved watershed protection plans is available on the DEQ's website.

The DEQ's non-point source program has five parts:

- Technical assistance to help people develop and implement watershed management plans, including best management practice (BMP) selection, land use planning activities, and engineering review of site plans;
- Information and education, including both statewide activities and tools and those created by grantees, to educate people about non-point sources of pollution;
- Grants, including those funded with federal Clean Water Act funds and the Clean Michigan Initiative to implement BMPs, land use planning tools and information/education activities;
- Compliance and enforcement, including response and investigation of complaints, follow up requiring corrective actions, and occasionally participating in escalated enforcement actions; and
- Monitoring and field investigations to determine the effectiveness of BMPs, the success of watershed planning efforts in protecting or improving water quality, and the effectiveness of the overall NPS Program, as well as monitoring related to TMDLs.

The non-point source program provides opportunities for local governments and watershed organizations to pursue education, planning, and management practices that will help protect water quality in your watershed. Getting involved in these activities is one of the best ways to help protect water quality in your watershed.

Under the Clean Water Act, states must provide an annual progress report on their non-point source programs. At present, these annual reports are provided to the EPA through a database that is difficult for the public to access. The DEQ is working on developing an annual summary of non-point source grant projects.

Required Reports

The NPDES program requires regular reports that help assess its overall effectiveness in protecting the waters of the state. For example, the DEQ is required under Section 303(d) to provide its list of impaired waters to the EPA every two years. In addition, under Section 305(b), the DEQ must report to the EPA on the health of all its waters every two years. While public participation is not required in developing these reports, they both provide important information to citizens involved in water quality issues. Request copies of the reports and read them. If you believe the report could be more useful or should include additional information, let the DEQ staff know your views.

Best Management Practices (BMPs) are any structural, vegetative, or management practice used to treat, prevent, or reduce water pollution. They can include temporary seeding of exposed soils, storm water basins, or use of fabric fencing at a construction site to retain sediments on site. The DEQ has developed over 50 BMPs for activities ranging from winter road management to lawn maintenance to household hazardous waste disposal. Further information is available on the DEQ's website, www.michigan.gov/deq, then selecting "Water," and "Surface Water," then "Non-Point Source Pollution," and then selecting "Technical Manuals."

Water Quality Standards

The Clean Water Act requires the DEQ to review Michigan's water quality standards every three years, referred to as the Triennial Review. The DEQ's current practice is to hold a public hearing in Lansing and propose changes to the regulations based on that hearing. Ask the DEQ for information on past triennial reviews and notice of future public hearings on water quality standards. Consider attending the next public hearing and asking about other ways to participate in development of water quality standards.

State Revolving Fund

The Clean Water Act allows each state to establish a State Revolving Fund (SRF), which assists with the construction of POTWs and storm water projects. The SRF provisions require public participation in the Intended Use Plan (IUP), which sets priorities for projects, as well as public involvement in environmental review of each funded project. Check Michigan's IUP and the priority list of projects to be funded. If any of the projects are in your watershed, you should get more information about the SRF and make sure you participate in the environmental review of the project itself.

There are other funding sources for financing wastewater treatment projects, and these sources have their own procedures and requirements for public participation. However, by the time these projects have progressed to the point of the local government applying for an NPDES permit, most of the planning and public participation has already been completed. Pay close attention to wastewater treatment issues in your community so you don't miss out on the planning process and any public participation opportunities.

Beyond the NPDES Program

Surface waters are part of larger water systems including groundwater and wetlands. These water systems are part of broader ecosystems that include wildlife, land, water and air. In other words, protecting water quality within a watershed involves more than strong NPDES permits. Wetlands are essential parts of healthy water systems. Land management activities such as logging can result in additional sediments flowing into surface waters from runoff. Rainfall can cause pollutants in the air to end up in surface waters.

As an informed and engaged citizen, you have a lot to offer your community and the water resources that make your community special. Involvement in the NPDES permitting process is a great way to help protect Michigan's waters. In addition to this permitting program, the DEQ also renews permits for projects involving wetlands, inland lakes and streams, and the Great Lakes shoreline. Just as there is a place for citizens in the NPDES program, these other permitting programs include an important role for citizens. For more information, contact the DEQ or one of the organizations listed in Appendix B. Your efforts to protect Michigan's rivers, lakes, wetlands, and groundwater will benefit your community now and into the future. We all thank you!

Questions to Ask When Reviewing a Draft NPDES Permit

On the cover page, look for the following information:

- The entity requesting the permit and the contact information;
- The term of the permit and the date to file for reissuance;
- The receiving waters; and
- The DEQ contact information.

In Part I of the permit, look for the following information:

- The source's design flow;
- The sampling types;
- The sampling or monitoring locations; and
- The outfall locations.

General Questions

- Is the draft permit for an existing source, an existing source seeking modifications, or a new source? This information may not be specifically addressed in the draft permit – check the fact sheet and ask the DEQ contact if you are not sure.
- Are the receiving waters in your watershed?
- What are the existing uses of the receiving waters? Where does the discharge enter the water body in relation to recreational resources, wildlife habitat, or other important resources?
- Is there anything distinctive about the water body such that the mixing zone should be specified in more detail?
- Is the receiving water a high quality water body? Is it an impaired water body, and if so, does it have a TMDL? The answers to these questions may affect how the DEQ staff develops the WQBELs for the permit.
- Does the discharge include toxic or bioaccumulative parameters? If so, how are they monitored? Does the permit specify minimum detection limits?
- Is sampling required often enough and under representative operating conditions to collect sufficient data on toxic, bioaccumulative, and other parameters of the discharge?
- Does the permit require measurement of acute and chronic toxicity? If not, why not?
- Is WET testing required? If not, why not?
- Are the load limit and concentration limit calculations consistent?
- Are there any special circumstances that might suggest the need for additional monitoring?

Questions to Ask When Reviewing a Draft NPDES Permit

For All Existing Sources

Compare the draft permit to the old permit, and consider these questions:

- Are sampling frequencies changing? If so, why?
- Is the discharge volume from the source increasing? If so, why?
- Are all parameters addressed in the old permit also in the draft permit? If not, why not?
- Are effluent limitations for specific parameters, including toxics and bioaccumulative parameters, changing? If so, why?
- Do the outfalls still discharge to the same receiving waters? In the same locations?
- Have there been significant permit violations in the past? If so, what actions did the DEQ take in response to the violations?
- Was there a compliance schedule regarding construction activities, reporting dates, or planned inspections in the last permit? Does the draft permit require completion of this schedule before issuance of the new permit?

For Existing Sources Seeking Modifications or New Sources

Generally, an antidegradation demonstration will be required for these applications. If it is not part of the information with the draft permit, ask the DEQ contact for a copy. The demonstration should address alternatives to the discharge as well as the socio-economic costs and benefits of allowing the discharge.

For POTW Permits

- Where applicable, is the Industrial Pretreatment Program for the POTW outlining the POTW's legal authority to implement and enforce the program as well as setting local limits for certain parameters, available for review? Is a copy of the last annual report on the Industrial Pretreatment Program available for review?
- Where applicable, are all industrial sources identified in the permit or in the permit application? Have industrial sources had significant compliance problems? What actions did the POTW take in response to the violations?
- How does the POTW address residuals? Is a copy of the Residuals Management Program available for review?
- Does the POTW serve an urbanized area requiring an MS4 storm water permit? If so, is a copy of the Storm Water Management Program available for review? If so, what is your role in that program? Can you or your organization help with implementation, education, or outreach?

[1]MCL 15.233.
[2]Administrative Rule 323.2122.
[3]Administrative Rule 323.2124.
[4]Administrative Rule 323.2118.
[5]Id.
[6]Administrative Rule 323.2130.
[7]MCL 324.1701.
[8]33 USC § 1365.
[9]A. Peterson, R. Reznick, S. Hedin, M. Hendges, D. Dunlap, Guidebook of Best Management Practices for Michigan Watersheds, MDEQ, Surface Water Quality Division, reprinted October 1998.

APPENDICES

Appendix A
Federal & State Contacts

Appendix B
Organizations

Appendix C
Information Resources

Appendix D
List of Toxics from
40 CFR 122 Appendix D

Appendix E
Antidegradation Rule

Federal Agencies

U.S. Environmental Protection Agency, Region 5
Water Division (W-15J)
U.S. EPA Region 5
77 W. Jackson Blvd.
Chicago, IL 60604-3590
PH: 312-886-6115
FX: 312-886-0168

Environmental Protection Agency website
www.epa.gov

EPA Region 5 website
www.epa.gov/region5

Environmental Compliance History Online
www.epa.gov/echo

Environmental fact data warehouse
www.epa.gov/enviro

Our Wetlands, Oceans, and Watersheds
www.epa.gov/owow

Surf Your Watershed
www.epa.gov/surf

USDA Natural Resources Conservation Service
3001 Coolidge Rd. Ste. 250
East Lansing, MI 48823-6123
PH: 517-324-5270
FX: 517-324-5171
website: www.mi.nrcs.usda.gov

U.S. Army Corps of Engineers
Detroit District Headquarters
477 Michigan Avenue
Detroit, MI 48226
PH: 888-694-8313 or 313-554-0753
Detroit District website: www.lre.usace.army.mil

U.S. Fish and Wildlife Service
East Lansing Field Office
2651 Coolidge Rd.
East Lansing, MI 48823-6316
PH: 517-351-2555
FX: 517-351-1443
E-mail: EastLansing@fws.gov
Region 3 website: www.fws.gov/midwest

USDA Michigan Farm Services Agency
3001 Coolidge Rd. Ste. 100
East Lansing, MI 48823-6321
PH: 517-324-5110
FX: 517-324-5120
website: www.fsa.usda.gov/mi

Michigan Agencies

Michigan Department of Natural Resources

Mason Building (Floor Number)
P O Box 30028
Lansing, MI 48909
PH: 517-373-2329
website: www.michigan.gov/dnr

DEQ Lansing Headquarters

Michigan Department of Environmental Quality
Division Name, Employee Name *(where applicable)*
Constitution Hall, Floor Number
525 West Allegan Street
P O Box 30473
Lansing, MI 48909-7973
517-373-7917

Constitution Hall Zip Codes

48909 – When using a P.O. box number, always use this zip code.
48933 – This is the street address for the building. This zip code is appropriate for Federal Express or United Parcel deliveries only.

9 denotes district office
10 denotes field office

1 UPPER PENINSULA DISTRICT OFFICE
420 5th St.
Gwinn, MI 49841-3004
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 49735-9282
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
27700 Donald Court
Warren, MI 48092-2793
Phone: 586-753-3700
Fax: 586-751-4690

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

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

DISTRICT AND FIELD OFFICE LOCATIONS

Organizations

Bear Creek Watershed Council
P O Box 357
Bear Lake, MI 49614
PH: 231-362-2812

Bear Creek winds for 28 miles through Manistee County to the confluence of the Big Manistee River. BCWC has inventoried the stream, locating erosion sites on the upper and lower creek. We have completed streambank stabilization and road/stream crossing improvements along the upper portion of the stream. We continue with these goals along the lower creek. We are in the process of constructing an interpretive trail along one of the headwater feeder creeks at the north end of the county.

Central Lake Superior Watershed Partnership
1030 Wright Street
Marquette, MI 49855
PH: 906-226-9460
FX: 906-226-4484
Website: www.superiorwatersheds.org

The Central Lake Superior Watershed Partnership (CLSWP) is a non-profit organization serving the entire Upper Peninsula of Michigan including portions of the Lake Superior, Lake Michigan, and Lake Huron drainage basins. The CLSWP provides assistance in land use planning, public education, water quality monitoring, river restoration, pollution prevention and citizen involvement.

Citizens for Alternatives to Chemical Contamination (CACC)
8735 Maple Grove Road
Lake, MI 48632-9511
PH: 989-544-3318
Website: www.caccmi.org

CACC is a Great Lakes grassroots non-profit organization serving to foster awareness of environmental issues through a network of citizens and organizations. CACC sponsors the annual Backyard Eco-Conference, which highlights regional grassroots environmental/social justice campaigns. CACC also publishes a newsletter and is a clearinghouse for environmental information. CACC has 2 active chapters - Huron Environmental Activists League in Alpena and Alcona County Environmental Coalition in Lincoln. At present, the CACC office is not regularly staffed. Contact CACC by mail or through our website.

Clean Water Action and Clean Water Fund
1200 Michigan Avenue, Suite A
East Lansing, MI 48823
PH: 517- 203-0754
FX: 517- 203-0754
E-mail: elansingcwa@cleanwater.org
Website: www.cleanwateraction.org

Clean Water Action and Clean Water Fund work to assist citizens in their understanding and use of state and federal wetland laws and regulations. Citizen inquiries are fielded by Clean Water staff and volunteers and appropriate next steps are identified. Clean Water Action also addresses wetland protection in the legislative area by lobbying for stronger protections.

Clinton River Watershed Council
101 Main Street, Suite 100
Rochester, MI 48307
PH: 248-601-0606
FX: 248-601-1280
Website: https://www.crwc.org/
E-mail: contact@crwc.org

CRWC is dedicated to protecting, enhancing, and celebrating the Clinton River, its watershed, and Lake St. Clair. We work with individuals, local governments, businesses, and community groups on watershed management, education, and stewardship programs, with a focus on reducing stormwater runoff, restoring aquatic and riparian habitat, and protecting river corridors and wetlands.

Friends of the Rouge
4901 Evergreen Road 220 ASC Dearborn, MI 48128
PH: 313-792-9621
FX: 313-593-0231
Website: *(The link provided was broken and has been removed.)*

Friends of the Rouge is a non-profit organization that promotes restoration and stewardship of the Rouge River Watershed. Programs include: Rouge Rescue (annual cleanup and river celebration), Rouge Education Project (school-based water quality monitoring program), Volunteer Frog and Toad Survey, Benthic Macroinvertebrate Monitoring, Storm Drain Marking, and Riparian Corridor Management.

Friends of the St. Joe River Association, Inc.
P O Box 354
Athens, MI 49011
PH: 269-729-5174
E-mail: fotsjr01@sbcglobal.net
Website: www.fotsjr.org
Watershed Management Plan Web Site:
www.stjoeriver.net

The group was founded to provide an organized program for the entire St. Joseph River Watershed that will address and support issues which concern the welfare of the river and its tributaries. We operate exclusively for education, historical, charitable and scientific purposes.

Great Lakes Information Network
Great Lakes Commission
Eisenhower Corporate Park
2805 S. Industrial Hwy., Suite # 100
Ann Arbor, MI 48104-6791
PH: 734-971-9135
FX: 734-971-9150
Website: https://www.glc.org/

The Great Lakes Information Network (GLIN) is a partnership that provides one place online for people to find information relating to the bi-national Great Lakes-St. Lawrence region of North America. GLIN offers a wealth of data and information about the region's environment, economy, tourism, education and more.

Huron River Watershed Council
1100 N. Main St. Suite 210
Ann Arbor, MI 48104
PH: 734-769-5123
FX: 734-998-0163
Website: www.hrwc.org

The Huron River Watershed Council works to inspire attitudes, behaviors, and economies to protect, rehabilitate, and sustain the Huron River System. The Council's nine-person staff and hundreds of volunteers participate in programs that cover pollution prevention, hands-on citizen education and river monitoring, natural resource planning, mass media education and information, and wetland and floodplain protection.

Lake Erie Clean Up Committee
47 East Elm Avenue
Monroe, MI 48162-2648
PH: 734-242-0909

The Lake Erie Clean-Up Committee works to stop pollution of Lake Erie and all fresh water lakes and streams, and to inform the public of the need for greater pollution controls to prevent the return to old methods of the past and to encourage industry to do more research. The Committee is participating in the State Wide Advisory Council and is represented on the River Raisin Public Advisory Council.

Lower Dead River Watershed Project
Marquette County Conservation District
1030 Wright Street
Marquette, MI 49855
PH: 906-226-2461

The Lower Dead River Watershed is 22 square miles and located in Marquette County, Michigan. Contaminated stormwater, sedimentation, development, and degraded aquatic habitat heavily impact the watershed. The goal of the project is to implement best management strategies to protect and restore water quality in the Lake Superior Basin.

Michigan Association of Conservation Districts
201 N. Mitchell Street, Suite 203
Cadillac, MI 49601
PH: 231-876-0328
FX: 231-876-0372
E-mail: www.mdistricts@aol.com
Website: www.macd.org

The MACD is a nongovernmental, non-profit organization established in 1940 to represent and provide services to Michigan's 80 Conservation Districts. Created to serve as stewards of natural resources, the conservation districts take an ecosystem approach to conservation and protection. MACD represents its members at the state level by working with legislators, cooperating agencies, and special interest groups whose programs affect the care and management of Michigan's natural resources, especially on private land. Contact information for all 80 conservation districts is available on the MACD website.

Michigan Environmental Council
119 Pere Marquette Drive, Ste. 2A
Lansing, Michigan 48912
PH: 517-487-9539
FX: 517-487-9541
Website: www.mecprotects.org

Founded in 1980, the MEC now represents 70 environmental organizations, offering research, communications and technical support and providing an effective voice for the environment at the State Capital. MEC fights to guard our water, protect land resources from sprawl, defend public health from pollution and promote cleaner energy.

Mid-Michigan Environmental Action Council
P O Box 17164
Lansing, MI 48901
PH: 517-485-9001
Website: www.midmeac.org

The Mid-Michigan Environmental Action Council (Mid-MEAC) is a non-profit environmental organization dedicated to improving the environment and quality of life by raising environmental consciousness and activism. Mid-MEAC is run by Mid-Michigan volunteers. Projects and operating costs are funded with grants, business contributions, and member donations.

Michigan Environmental Law Center
P O Box 984
Traverse City, MI 49686
Website: *(The link provided was broken and has been removed.)*

The Michigan Environmental Law Center helps provide legal assistance and support to the public in order to protect and restore environmental quality in Michigan.

Michigan United Conservation Clubs
2101 Wood Street
Lansing, MI 48912
PH: 517-371-1041
FX: 517-371-1505
E-mail: muccpolicy@mucc.org
Website: www.mucc.org

Michigan United Conservation Clubs (MUCC) works to conserve Michigan's natural resources by educating and engaging citizens through live animal programs, youth camps, magazines for kids and adults, television shows, and resource lobbyists. MUCC has represented the views of million of conservationists since 1937, with over 500 affiliated clubs dedicated to protecting our outdoor heritage. MUCC is at the vanguard of efforts to protect and manage Michigan's water, land, forests, fisheries and wildlife. Currently, MUCC is helping to develop new rules to protect Michigan's groundwater, wetlands, and prevent sulfide mining pollution, as well as advocating for phosphate and mercury pollution reductions and preventing the spread of aquatic invasives in the Great Lakes.

National Wildlife Federation
Great Lakes Natural Resource Center
213 W. Liberty, Suite 200
Ann Arbor, MI 48104-1398
PH: 734-769-3351
FX: 734-769-1149
Website: www.nwf.org/greatlakes

The National Wildlife Federation - Great Lakes Natural Resource Center works throughout the Great Lakes basin to protect water quality. In addition to promoting strong water quality policies at the state and federal levels, we also have an environmental law practicum at the University of Michigan Law School that works to make sure existing policies are enforced.

PIRGIM
103 E. Liberty, Suite 202
Ann Arbor, MI 48104
PH: 734-662-6597
Website: www.pirgim.org

The Public Interest Research Group in Michigan (PIRGIM) is an advocate for the public interest. For 30 years, PIRGIM has been working to uncover threats to public health and well-being and fight to end them, using the time-tested tools of investigative research, media exposes, grassroots organizing, advocacy and litigation. PIRGIM's mission is to deliver persistent, result-oriented activism that protects the environment, encourages a fair marketplace for consumers and fosters responsive, democratic government.

Project Cattail
5819 Merkel
Dexter, MI 48130
PH: 734-426-8895
FX: 734-426-7033

This project is unique in that it not only serves to educate students about ecology and biology, but also involves the students in their communities. When a community issue involving wetlands comes up, the students will begin a project that crosses curriculum lines. Sally DeRoo, who founded the project as a classroom teacher, now teaches prospective teachers at Wayne State University and Oakland University.

River Network
520 SW 6th Avenue, Suite 1130
Portland, OR 97204
PH: 503-241-3506
FX: 503-241-9256
Website: www.rivernetwork.org

River Network's Mission is to help people understand, protect and restore rivers and their watersheds. We envision a nation whose rivers are cared for by those who use them and live in their watershed. Our unique role is to build and continually strengthen a nationwide network of people and groups working on freshwater-related issues. Our constituency is comprised of grassroots river and watershed conservation organizations, public agencies, tribal governments and coalitions, and others working to save freshwater ecosystems.

Saginaw Bay Advisory Council
P O Box 643
Bay City, MI 48707
PH: 989-893-3782

The Saginaw Bay Advisory Council is made up of people from all around the Saginaw Bay area. Dredge and fill applications are thoroughly reviewed by members, and all applications are discussed at monthly meetings, where a decision is made regarding whether to advise acceptance or denial of the application.

Photo by K. Beyer © 2005

Sierra Club Mackinac Chapter
109 E. Grand River Avenue
Lansing, MI 48906
PH: 517-484-2372
FX: 517-484-3108
E-mail: Mackinac.chapter@sierraclub.org

The Sierra Club Mackinac Chapter is the Michigan voice for the nation's oldest most influential grassroots environmental organization. Our members are 20,000 of your Michigan friends and neighbors. Inspired by nature, we work together to protect our communities and Michigan's wild areas, water, air, forests, and land. Since 2001, our work has included getting NPDES permits for CAFOs, and getting legislation and rules to regulate the impacts from sulfide (acid) mining. There are 14 local chapters throughout Michigan. Their contact information is on our website.

Water and Air Team for Charlevoix
P O Box 615
Charlevoix, MI 49720
PH: 231-547-5530

WATCH routinely comments on dredge and fill applications and assists citizens with their comments as much as possible. WATCH's "Adopt-A-Stream" program can be expanded to include wetlands, and they are available to help in litigation or contested case hearings.

The Watershed Center Grand Traverse Bay
232 E. Front Street,
Traverse City, MI 49684
PH: 231-935-1514
FX: 231-935-3829
E-mail: info@gtbay.org
Website: www.gtbay.org

The Watershed Center's mission is to preserve, protect and advocate for the freshwater resources of Grand Traverse Bay and its watershed. Our programs include research and monitoring, outreach, education, watershed planning, and advocacy. We track and comment on permits, local development, and local and state legislative and regulatory issues; and serve as the "eyes, ears, and voice" for the Bay through our Grand Traverse Baykeeper® program, a member of the Waterkeeper Alliance.

Tip of the Mitt Watershed Council
426 Bay Street
Petoskey, MI 49770
PH: 231-347-1181
FX: 231-347-5928
E-mail: info@watershedcouncil.org
Website: www.watershedcouncil.org

Tip of the Mitt Watershed Council is the voice for Northern Michigan's waters. We are dedicated to protecting our lakes, streams, wetlands, and ground water through respected advocacy, innovative education, technically sound water quality monitoring, and thorough research. We achieve our mission by empowering others and we believe in the capacity to make a positive difference. We work locally, regionally, and throughout the Great Lakes Basin to achieve our goals.

Upper Peninsula Environmental Coalition (UPEC)
P O Box 673
Houghton, MI 49931
PH: 906-524-7899
Website: www.upenvironment.org

For 30 years, it has been the Upper Peninsula Environmental Coalition's mission to protect and seek to maintain the unique environmental qualities of the U.P. through public education and watchful monitoring of industry and government. We fight development plans that would result in the destruction of our precious natural resources and provide grants for land preservation and environmental education programs.

West Michigan Environmental Action Council
1007 Lake Dr. SE
Grand Rapids, MI 49506
PH: 616-451-3051
FX: 616-451-3054
E-mail: info@wmeac.org

WMEAC is a private, non-profit education and advocacy organization focusing on citizen involvement and empowerment to improve the environment. WMEAC has three programs specifically addressing clean water, Raingardens of West Michigan, Adopt-A-Stream, and The Michigan Groundwater Stewardship Program. Other programs include Sustainable Business, Sustainable Agriculture, Religion Ecology and Spirituality, and Michigan Student Environmental Coalition.

Statutory and Regulatory Resources

Federal Water Pollution Control Act of 1972 (Clean Water Act), 33 USC §§ 1251 through 1387.

Federal regulations implementing the NPDES program of the Clean Water Act
40 CFR Subchapter D, Water Programs (Parts 100 through 149).
40 CFR Subchapter N, Effluent Guidelines and Standards (Parts 405 through 499).

Michigan Natural Resources and Environmental Protection Act, Public Act 451 of 1994,
Part 31 – Water Resources Protection, MCL 324.3101 through 324.3133.
Part 91 – Soil Erosion and Sedimentation Control, MCL 324.9101 through 324.9123.
Other parts of NREPA address aspects of water quality protection, including Parts 35, 37, 39, 41, 43, 45, 47, 49, and 51.

Michigan Administrative Procedures Act, Public Act 306 of 1969, MCL 24.201 through 24.328.

Michigan Administrative Rules implementing NREPA Part 31, Water Resources Protection
Part 4 – Water Quality Standards
Rules 323.1041 through 323.1117
Part 8 – Water Quality-Based Effluent Limit Development for Toxic Substances; Rules 323.1201 through 323.1221
Part 21 – Wastewater Discharge Permits
Rules 323.2101 through 323.2195
Part 23 – Pretreatment
Rule 323.2301 through 323.2317.
Part 24 – Land Application of Biosolids
Rules 323.2401 through 323.2418.

Print Resources

Publications on NPDES Permitting:

Killam, Gayle, *The Clean Water Act Owner's Manual (2nd edition)*, (River Network: Portland, OR) July 2005.

Moore, Robert, Merritt Frey, Gayle Killam, *Permitting an End to Pollution: How to Scrutinize and Strengthen Water Pollution Permits in Your State*, Prairie Rivers Network (Champlain, IL), Clean Water Network (Washington, DC), River Network (Portland, OR) June 2002.

Peterson, A, R. Reznick, S. Hedin, M. Hendges, D. Dunlap, *Guidebook of Best Management Practices for Michigan Watersheds*, MDEQ, Surface Water Quality Division, reprinted October 1998.

U.S. Environmental Protection Agency, Office of Water, U.S. EPA *NPDES Permit Writers' Manual*, EPA-833-B-96-003, December, 1996.

Other Publications of Interest:

Cwikiel, Wilfred, *Michigan Wetlands – Yours to Protect: A Citizen's Guide to Wetland Protection* (Third Edition) 2003. Tip of the Mitt Watershed Council, Petoskey, MI.

Dempsey, Dave, *Ruin and Recovery*, (University of Michigan Press: Ann Arbor, MI) 2001.

Web Resources

For federal statutes in the United States code, and regulations from the Code of Federal Regulations, go to the Government Printing Office site at https://www.gpo.gov/.

For Michigan statutes, go to the Michigan Legislature site at www.legislature.mi.gov.

For Michigan Administrative Rules, go to the State Office of Administrative Hearings and Rules (SOAHR) (formerly Office of Regulatory Reform), now housed within Michigan Department of Labor and Economic Growth (formerly Department of Consumer and Industry Services) – www.michigan.gov/cis, then select "SOAHR."

For another state guide to water quality permitting, the Palmetto Conservation Foundation and South Carolina Department of Health and Environmental Control (SCDHEC) published *Citizen's Guide to Clean Water*, in November 1999, which can be found on the SCDHEC website www.scdhec.net, then select "Water Bureau" and then "Publications."

Also, see websites for particular government agencies and organizations (pages 72 and 73).

Photo by K. Beyer © 2005

TABLE 1 - Testing Requirements for Organic Toxic Pollutants by Industrial Category

(Table I from 40 CFR 122, Appendix D)

Industrial Category	Volatile	GC/MS Fraction Acid	Base/Neutral	Pesticide
Adhesives and Sealants	X	X	X	---
Aluminum Forming	X	X	X	---
Auto and Other Laundries	X	X	X	X
Battery Manufacturing	X	---	X	---
Coal Mining	X	X	X	X
Coil Coating	X	X	X	---
Copper Forming	X	X	X	---
Electric and Electronic Components	X	X	X	X
Electroplating	X	X	X	---
Explosives Manufacturing	---	X	X	---
Foundries	X	X	X	---
Gum and Wood Chemicals	X	X	X	X
Inorganic Chemicals Manufacturing	X	X	X	---
Iron and Steel Manufacturing	X	X	X	---
Leather Tanning and Finishing	X	X	X	X
Mechanical Products Manufacturing	X	X	X	---
Nonferrous Metals Manufacturing	X	X	X	X
Ore Manufacturing	X	X	X	X
Organic Chemicals Manufacturing	X	X	X	X
Paint and Ink Formulation	X	X	X	X
Pesticides	X	X	X	X
Petroleum Refining	X	X	X	X
Pharmaceutical Preparations	X	X	X	---
Photographic Equipment and Supplies	X	X	X	X
Plastic and Synthetic Materials Manufacturing	X	X	X	X
Plastic Processing	X	---	---	---
Porcelain Enameling	X	---	X	X
Printing and Publishing	X	X	X	X
Pulp, Paper, and Paperboard Mills	X	X	X	X
Rubber Processing	X	X	X	---
Soap and Detergent Manufacturing	X	X	X	---
Steam Electric Power Plants	X	X	X	---
Textile Mills	X	X	X	X
Timber Products Processing	X	X	X	X

Following is a list of industrial categories and subcategories which are specifically suspended from submitting certain GC/MS data in 40 CFR Part 122, Appendix D, Note 1. If your industrial category or subcategory is specifically listed in the suspensions, you are not required to submit analytical data for the suspended GC/MS fractions listed below. In addition to the listed industries, 40 CFR Part 122.21 (g)(8) also provides for an exemption from reporting GC/MS analytical data for small businesses. Refer to the federal guidelines to determine if your facility is exempt.

Coal Mining Industry and Porcelain Enameling Industry

All four GC/MS organic fractions for all subcategories of these industries are suspended.

Leather Tanning and Finishing Industry, Paint and Ink Formulation, and Photographic Supplies

Pesticide fraction is suspended for all subcategories of these industries.

Petroleum Refining Industry

Acid, base/neutral, and pesticide fractions are suspended for all subcategories of this industry.

Textile Mills Industry

All four GC/MS organic fractions in the Greige Mills Subcategory are suspended.
Pesticide fraction in this category is suspended for all other subcategories of this industry.

Ore Mining and Dressing Industry

Volatile, base/neutral, and pesticide fractions in the Base and Precious Metals Subcategory are suspended.
All four GC/MS organic fractions in all other subcategories of this industry are suspended.

Gum and Wood Chemicals Industry

Pesticide fraction in the Tall Oil Rosin Subcategory and the Rosin-Based Derivatives Subcategory are suspended.
Pesticide and base/neutral fractions in all other subcategories of this industry are suspended.

Pulp and Paper Industry

Pesticide fraction in Papergrade Sulfite subcategories (Subparts J and U) is suspended.
Base/neutral and pesticide fractions in Deink (Subpart Q), Dissolving Kraft (Subpart F), and Paperboard from Waste Paper (Subpart E) are suspended.
Volatile, base/neutral, and pesticide fractions in the BCT Bleached Kraft (Subpart H), Semi-Chemical (Subparts B and C), and Non-Integrated Fine Papers (Subpart R) are suspended.
Acid, base/neutral, and pesticide fractions in Fine Bleached Kraft (Subpart I), Dissolving Sulfite Pulp (Subpart K), Groundwood Fine Papers (Subpart O), Market Bleached Kraft (Subpart G), Tissue from Wastepaper (Subpart T), and Nonintegrated Tissue Papers (Subpart S) are suspended.

Steam Electric Power Plant Industry

Base/neutral fraction in the Once-Through Cooling Water, Fly Ash, and Bottom Ash Transport Water process wastestreams are suspended.

Table 1 EQC 4659-1 (Rev 1/05)

TABLE 2 - Organic Toxic Pollutants in each GC/MS Fraction

(Table II from 40 CFR 122, Appendix D)

Volatiles

1,1,1-Trichloroethane	Acrolein	Ethylbenzene
1,1,2,2-Tetrachloroethane	Acrylonitrile	Methyl Bromide
1,1,2-Trichloroethane	Benzene	Methyl Chloride
1,1-Dichloroethane	Bromoform	Methylene Chloride
1,1-Dichloroethylene	Carbon Tetrachloride	Tetrachloroethylene
1,2- Dichloroethane	Chlorobenzene	Toluene
1,2-Dichloropropane	Chlorodibromomethane	Trichloroethylene
1,2-Trans-Dichloroethylene	Chloroethane	Vinyl Chloride
1,3-Dichloropropylene	Chloroform	
2-Chloroethylvinylether	Dichlorobromomethane	

Acid Compounds

2,4,6-Trichlorophenol	2-Chlorophenol	P-Chloro-M-Cresol
2,4-Dichlorophenol	2-Nitrophenol	Pentachlorophenol
2,4-Dimethylphenol	4,6-Dinitro-O-Cresol	Phenol
2,4-Dinitrophenol	4-Nitrophenol	

Base/Neutral

1,2,4-Trichlorobenzene	Benzidine	Fluoranthene
1,2-Dichlorobenzene	Benzo (a) Anthracene	Fluorene
1,2-Diphenylhydrazine (as	Benzo (a) Pyrene	Hexachlorobenzene
Azobenzene)	Benzo (ghi) Perylene	Hexachlorobutadiene
1,3-Dichlorobenzene	Benzo (k) Fluoranthene	Hexachlorocyclopentadiene
1,4-Dichlorobenzene	Bis (2-Chloroethoxy) Methane	Hexachloroethane
2,4-Dinitrotoluene	Bis (2-Chloroethyl) Ether	Indeno (1,2,3-cd) Pyrene
2,6-Dinitrotoluene	Bis (2-Chloroisopropyl) Ether	Isophorone
2-Chloronaphthalene	Bis (2-Ethylhexyl) Phthalate	N-Nitrosodi-N-Propylamine
3,3'-Dichlorobenzidine	Butylbenzyl Phthalate	N-Nitrosodimethylamine
3,4-Benzofluoranthene	Chrysene	N-Nitrosodiphenylamine
4-Bromophenylphenylether	Di-N-Butyl Phthalate	Naphthalene
4-Chlorophenyl Phenyl Ether	Di-N-Octyl Phthalate	Nitrobenzene
Acenaphthene	Dibenzo (a,h) Anthracene	Phenanthrene
Acenaphthylene	Diethyl Phthalate	Pyrene
Anthracene	Dimethyl Phthalate	

Pesticides

4,4'-DDD	δ-BHC	PCB-1221
4,4'-DDE	Dieldrin	PCB-1232
4,4'-DDT	Endosulfan Sulfate	PCB-1242
α-BHC	Endrin	PCB-1248
α-Endosulfan	Endrin Aldehyde	PCB-1254
Aldrin	γ-BHC (Lindane)	PCB-1260
β-BHC	Heptachlor	Toxaphene
β-Endosulfan	Heptachlor Epoxide	
Chlordane	PCB-1016	

TABLE 3 - Other Toxic Pollutants (Metals and Cyanide) and Total Phenols

(Table III from 40 CFR 122, Appendix D)

Total Antimony	Total Copper	Total Phenols
Total Arsenic	Total Cyanide	Total Selenium
Total Beryllium	Total Lead	Total Silver
Total Cadmium	Total Mercury (EPA Method 1631)	Total Thallium
Total Chromium	Total Nickel	Total Zinc

Tables 2-3 EQC 4659-2-3 (Rev 1/05)

TABLE 4 - Conventional and Non-Conventional Pollutants to Be Tested by Existing Dischargers if Expected to Be Present in Discharge

(Table IV from 40 CFR 122, Appendix D)

Aluminum, Total	Magnesium, Total	Radium, Total
Barium, Total	Manganese, Total	Radium 226, Total
Boron, Total	Molybdenum, Total	Sulfate (as SO4)
Bromide	Nitrate-Nitrite (as N)	Sulfide (as S)
Chlorine, Total Residual	Nitrogen, Total Organic (as N)	Sulfite (as SO3)
Cobalt, Total	Oil and Grease	Surfactants
Color	Phosphorus (as P), Total	Tin, Total
Fecal Coliform	Radioactivity	Titanium, Total
Fluoride	Alpha, Total	
Iron, Total	Beta, Total	

TABLE 5 - Toxic Pollutants and Hazardous Substances Required to Be Identified by Existing Dischargers if Expected to Be Present in Discharge

(Table V from 40 CFR 122, Appendix D)

Toxic Pollutant
Asbestos

Hazardous Substances		
2,2-Dichloroproprionic Acid	Diethyl Amine	Monomethyl Amine
2,4,5-T (2,4,5-Trichlorophenoxy Acetic Acid)	Dimethyl Amine	Naled
2,4-D (2,4-Dichlorophenoxyacetic acid)	Dinitrobenzene	Napthenic Acid
Acetaldehyde	Diquat	Nitrotoluene
Allyl Alcohol	Disulfoton	Parathion
Allyl Chloride	Diuron	Phenolsulfonate
Amyl Acetate	Epichlorohydrin	Phosgene
Aniline	Ethanolamine	Propargite
Benzonitrile	Ethion	Propylene Oxide
Benzyl Chloride	Ethylene Diamine	Pyrethrins
Butyl Acetate	Ethylene Dibromide	Quinoline
Butylamine	Formaldehyde	Resorcinol
Captan	Furfural	Silvex
Carbaryl	Guthion	Strontium
Carbofuran	Isoprene	Strychnine
Carbon Disulfide	Isopropanolamine	Styrene
Chlorpyrifos	Kelthane	TDE (Tetrachlorodiphenylethane)
Coumaphos	Kepone	Trichlorofon
Cresol	Malathion	Triethylamine
Crotonaldehyde	Mercaptodimethur	Trimethylamine
Cyclohexane	Methoxychlor	Uranium
Diazinon	Methyl Mercaptan	Vanadium
Dicamba	Methyl Methacrylate	Vinyl Acetate
Dichlobenil	Methyl Parathion	Xylene
Dichlone	Mevinphos	Xylenol
Dichlorvos	Mexacarbate	Zirconium
	Monoethyl Amine	

Tables 4-5 EQC 4659-4-5 (Rev 1/05)

Table 5 continued

Other or Additional Toxic Pollutants (Michigan Critical Materials)

1,1,1,2-tetrachloroethane	5-chloro-o-toluidine	Cobalt
1,1,2,2-tetrachloroethane	5-nitro-o-anisidine	Copper
1,1,2-trichloroethane	5-nitroacenaphthene	Crotoxyphos
1,1-dichloroethylene	Abietic acid	Cupferron
1,2,3,4-tetrachlorobenzene	Acetone cyanohydrin	Cyanides
1,2,3,5-tetrachlorobenzene	Acrolein	Cycasin
1,2,3-trichlorobenzene	Acrylonitrile	Cycloheximide
1,2,4,5-tetrachlorobenzene	Actinomycin D	Cyclophosphamide
1,2,4-trichlorobenzene	Aflatoxins	DDT (p,p', o,p' and technical grade)
1,2-dichlorobenzene	Aldicarb	Dehydroabietic acid
1,2-dichloroethane	Aldrin	Demeton
1,2-epoxybutane	Aminoazobenzene	Di-n-octyl phthalate
1,2:3,4-diepoxybutane	Amitrole	Diallate
1,3-butadiene	Anilazine	Dibenz(a,h)anthracene
1,3-dichlorobenzene	Aniline hydrochloride	Dibromochloropropane (DBCP)
1,3-dichloropropene	Antimony	Dibutyl phthalate
1,3-propane sultone	Antimycin A	Dichrotophos
1,4-dichlorobenzene	Aramite	Dieldrin
1,4-dioxane	Arsenic	Diethylhexyl phthalate
1,5-naphthalenediamine	Asbestos	Diethylstilbestrol
1-amino-2-methylanthraquinone	Azinphos-ethyl	Dihydrosafrole
1-chloro-4-phenoxybenzene	Azinphos-methyl	Dimethoate
1-chloropropene	Azobenzene	Dimethyl disulphide
2,3,4,5-tetrachlorophenol	Barban	Dimethyl sulfate
2,3,4,6-tetrachlorophenol	Bendiocarb	Dimethylhydrazines
2,3,5,6-tetrachlorophenol	Benomyl	Dinitrotoluenes
2,4,5-trichlorophenol	Benz(a)anthracene	Dinocap
2,4,5-triclhorotoluene	Benzene	Dinoseb
2,4,5-trimethylaniline	Benzidine (and salts)	Dioxathion
2,4,6-trichlorophenol	Benzo(a)pyrene	Diphenyl ether
2,4-diaminoanisole sulfate	Beryllium	Endosulfan
2,4-diaminotoluene	beta-propiolactone	Endrin
2,4-dichlorophenol	Bis(2-chloroethyl)ether	EPN
2,4-dinitrophenol	Bis(chloromethyl)ether	Ethyl chloride
2-acetylaminofluorene	Bromomethane	Ethylene oxide
2-aminoanthraquinone	Bromoxynil	Ethylene thiourea
2-methyl-1-nitroanthraquinone	Butyl benzyl phthalate	Ethyleneimine
2-naphthylamine	Butylbutanol nitrosamine	Ethylmethanesulfonate
2-nitropropane	Cadmium	Fensulfothion
3,3'-dichlorobenzidine	Captafol	Fenthion
3-(chloromethyl)pyridine hydrochloride	Carbon tetrachloride	Fluchloralin
3-amino-9-ethylcarbazole	Carbophenothion	Furathiazole
3-amino-9-ethylcarbazole hydrochloride	Chloramines	Heptachlor
4,4'-diaminodiphenyl ether	Chlordane	Heptachlor epoxide
4,4'-methylenebis (2-methylaniline)	Chlordecone	Hexachlorobenzene
4,4'-methylenebis(N,N-dimethyl) benzenamine	Chlorfenvinphos	Hexachlorobutadiene
4,4'-thiodianiline	Chlorine (elemental cl and hypochlorite salts)	Hexachlorocyclohexane (all isomers)
4,6-dinitro-o-cresol	Chlorobenzene	Hexachlorocyclopentadiene
4-aminobiphenyl	Chlorobenzilate	Hexachloroethane
4-aminopyridine	Chloroform	Hexamethylphosphoramide
4-bromophenyl phenyl ether	Chloromethane	Hydrazine
4-chloro-m-phenylenediamine	Chloroprene	Hydrazobenzene
4-chloro-o-phenylenediamine	Chromium	Hydrogen sulfide
4-dimethylaminoazobenzene	Clonitralid	Hydroquinone

Table 5 EQC 4659-5 (Rev1/01)

Table 5 continued

Isonicotinic acid hydrazine	Neoabietic acid	Polychlorinated dibenzofurans (PCDF)
Kanechlor C	Nickel	Polychlorinated dioxins (PCDD)
Ketene	Nifurthiazole	Polychlorinated naphthalenes
Lactonitrile	Niridazole	Propyleneimine
Lasiocarpine	Nithiazide	Propylthiouracil
Lead	Nitrobenzene	Rotenone
Leptophos	Nitrofen	Selenium
Lithium	Nitrogen mustard	Semicarbazide
m-cresol	o-Aminoazotoluene	Semicarbazide hydrochloride
Malachite green	o-Anisidine	Silver
Mercury	o-Anisidine hydrochloride	Silvex, propylene glycol butyl ether ester
Mestranol	o-Cresol	Sodium fluoroacetate
Methacrylonitrile	o-Phenylphenol	Sodium-o-phenylphenol
Methomyl	o-Toluidine	Sulfallate
Methyl chloroform	o-Toluidine hydrochloride	Sulfotepp
Methyl hydrazine	Octachlorostyrene	TEPP
Methylene chloride	Oydemetonmethyl	Terbufos
Methylenebis(2-chloroaniline)	p,p'-DDE	Tetrachloroethylene
Methylthiouracil	p,p'-TDE (p,p'-DDD)	Tetrachloroguaiacol
Mirex	p-Chlorophenol	Tetrachlorvinphos
Mitomycin C	p-Cresidine	Tetranitromethane
Monocrotaline	p-Cresol	Thallium
Monocrotophos	p-Nitrosodiphenylamine	Thioacetamide
Mustard gas	Paraquat	Thiourea
N,N'-diethylthiourea	Pentachloronitrobenzene	Thiram
N-(2-hydroxyethyl) ethyleneimine	Pentachlorophenol (and salts)	Toluene
N-methyl formamide	Phenazopyridine hydrochloride	Toxaphene
N-nitroso-di-N-butylamine	Phenesterin	Triaryl phosphate esters
N-nitroso-N-ethylurea	Phenobarbitol	Tributyltin (and salts and esters)
N-nitroso-N-methylurea	Phenol	Trichloroethylene
N-nitroso-N-methylurethane	Phenytoin	Trifluralin
N-nitrosodi-N-propylamine	Phenytoin sodium	Trimethylphosphate
N-nitrosodiethylamine	Phorate	Tris(2,3-dibromopropyl)phosphate
N-nitrosodimethylamine	Phosazetim	Uracil mustard
N-nitrosodiphenylamine	Phosmet	Urethane (monomer)
N-nitrosomethylvinylamine	Phosphamidon	Vinyl bromide
N-nitrosomorpholine	Piperonyl sulfoxide	Vinyl chloride
N-nitrososarcosine	Polybrominated biphenyls (PBB)	Zinc
Naphthalene	Polychlorinated biphenyls (PCB)	Ziram

TABLE 6 - Dioxin and Furan Congeners

Dioxin congeners	Furan Congeners
2,3,7,8-Tetrachlorodibenzo-p-dioxin	2,3,7,8-Tetrachlorodibenzofuran
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1,2,3,7,8-Pentachlorodibenzofuran
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	2,3,4,7,8- Pentachlorodibenzofuran
1,2,3,6,7,8- Hexachlorodibenzo-p-dioxin	1,2,3,4,7,8-Hexachlorodibenzofuran
1,2,3,7,8,9- Hexachlorodibenzo-p-dioxin	1,2,3,6,7,8- Hexachlorodibenzofuran
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	2,3,4,6,7,8- Hexachlorodibenzofuran
Octachlorodibenzo-p-dioxin	1,2,3,7,8,9- Hexachlorodibenzofuran
	1,2,3,4,6,7,8-Heptachlorodibenzofuran
	1,2,3,4,7,8,9-Heptachlorodibenzofuran
	Octachlorodibenzofuran

Table 5-6 EQC 4659-5-6 (Rev 1/05)

R 323.1098 Antidegradation.

Rule 98.

(1) This rule applies to any action or activity pursuant to part 31 of Act No. 451 of the Public Acts of 1994, as amended, being §324.3101 et seq. of the Michigan Compiled Laws, that is anticipated to result in a new or increased loading of pollutants by any source to surface waters of the state and for which independent regulatory authority exists requiring compliance with water quality standards.

(2) For all waters, the level of water quality necessary to protect existing uses shall be maintained and protected. Where designated uses of the water body are not attained, there shall be no lowering of the water quality with respect to the pollutant or pollutants that are causing the nonattainment.

(3) Where, for individual pollutants, the quality of the waters is better than the water quality standards prescribed by these rules, that water shall be considered high quality and that quality shall be maintained and protected unless allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. For high quality waters, no action resulting in the lowering of water quality shall occur unless the provisions of this rule have been complied with.

(4) A person applying for a control document in a high quality water or a Lake Superior basin - outstanding international resource water for a new or increased loading of pollutants shall show how the discharge is exempted under subrule (8) or (9) of this rule or provide a demonstration as follows:

(a) The applicant shall identify the social or economic development and the benefits to the area in which the waters are located that would be foregone if the new or increased loading of pollutants is not allowed. The factors to be addressed may include any of the following:

(i) Employment increases.
(ii) Production level increases.
(iii) Employment reductions avoidance.
(iv) Efficiency increases.
(v) Industrial, commercial, or residential growth.
(vi) Environmental or public health problem corrections.
(vii) Economic or social benefits to the community.

(b) For discharges of BCCs that result from operations at the facility, the applicant shall include an identification of the alternatives evaluated and the alternatives to be implemented to comply with the following requirements:

(i) The discharger shall minimize the new or increased loading of the BCC by implementation of any cost-effective pollution prevention alternatives and techniques which have been adequately demonstrated and which are reasonably available to the discharger that would eliminate or significantly reduce the new or increased loading of the BCC.

(ii) If pollution prevention alternatives implemented under paragraph (i) of this subdivision do not eliminate the new or increased loading of the BCC, then the discharger shall evaluate alternative or enhanced treatment techniques which have been adequately demonstrated and which are reasonably available to the discharger that would eliminate the new or increased loading of the BCC and shall implement the techniques that have a cost that is reasonable relative to the cost of treatment necessary to achieve applicable effluent limitations.

(iii) If the new or increased loading is a point source discharge to a Lake Superior basin-outstanding international resource water as defined in subrule (7) of this rule and if the BCC of concern is a LSB-BSIC, then the requirements of paragraph (ii) of this subdivision do not apply. If the pollution prevention alternatives implemented under paragraph (i) of this subdivision do not eliminate the new or increased loading of the LSB-BSIC to a Lake Superior basin-outstanding international resource water, then the discharger shall evaluate and implement the best technology in process and treatment (BTPT) that would eliminate or reduce the new or increased loading of the LSB-BSIC. BTPT shall be the most advanced treatment techniques which have been adequately demonstrated and which are reasonably available to the discharger. However, innovative or experimental technology shall also be considered if proposed by the discharger. Upon demonstration by the permittee, the requirement to implement BTPT may be waived by the department for new or increased loadings of LSB-BSICs that occur as trace contaminants in naturally occurring raw materials at the facility. If the BTPT requirement is waived, then the requirements of paragraph (ii) of this subdivision shall apply.

(5) If the department determines that the antidegradation demonstration information from subrule (4) of this rule shows that lowering of water quality is necessary to support important social and economic development in the area and that, if applicable, BTPT will be implemented consistent with subrule (4)(b)(iii) of this rule, then the department shall authorize the lowering of water quality through issuance of the control document. In no event may this decision allow water quality to be lowered below the minimum level required to fully support the designated uses. The antidegradation demonstration shall be available to the public for review during any public comment period on the control document.

(6) If high quality water bodies are designated outstanding state resource waters (OSRW) by the department, then controls shall be applied on pollutant sources to the OSRW or tributaries so that the water quality is not lowered in the OSRW. A short-term, temporary, for example, weeks or months, lowering of water quality in the OSRW may be permitted by the department on a case-by-case basis. The following water bodies are designated as OSRWs:

(a) The following water bodies designated as wild rivers pursuant to the Michigan scenic rivers act of 1991, 16 U.S.C. §1271 et seq:

(i) The Carp river (Mackinac county) - the 7.5-mile segment from Michigan state highway 123, T42N, R5W, section 2, to 1/4 of a mile upstream from forest development road 3119, T42N, R4W, section 4.

(ii) The Carp river (Mackinac county) - the 4.9-mile segment from 1/4 of a mile downstream of forest development road 3119, T42N, R4W, section 3, to McDonald rapids.

(iii) The east branch of the Ontonagon river (Houghton and Ontonagon counties) - the 25.5-mile segment from the east branch of the Ontonagon river's confluence with an unnamed stream in T48N, R37W, section 30, to the Ottawa national forest boundary, T50W, R38W, section 33.
(iv) The middle branch of the Ontonagon river (Ontonagon county) - the 17.4-mile segment from Trout creek, T48N, R38W, section 20, to the northern boundary of the Ottawa national forest, T50N, R39W, section 12.
(v) The Sturgeon river (Baraga and Houghton counties) - the 16.5-mile segment from the Sturgeon river's entry into the Ottawa national forest, T48N, R35W, section 12, to Prickett lake.
(vi) The east branch of the Tahquamenon river (Chippewa county) - the 3.2-mile segment from the center of T46N, R6W, section 20, to the boundary of the Hiawatha national forest, T46N, R6W, section 19.
(vii) The Yellow Dog river (Marquette county) - the 4-mile segment from the Yellow Dog river's origin at the outlet of Bulldog lake dam, T50N, R29W, section 31, to the boundary of the Ottawa national forest, T50N, R29W, section 17.

(b) The main, north, south, east, and west branches of the Two-Hearted river and Dawson creek from their headwaters to the mouth of the river at Lake Superior, which are designated as wilderness rivers pursuant to part 305 of Act No. 451 of the Public Acts of 1994, as amended, being §324.30501 et seq. of the Michigan Compiled Laws.

(c) Water bodies within the designated boundaries of the following national parks or national lakeshores:
(i) Sleeping bear dunes national lakeshore.
(ii) Pictured rocks national lakeshore.
(iii) Isle royale national park.

(7) All surface waters of the Lake Superior basin that are not identified as OSRWs are designated as Lake Superior basin - outstanding international resource waters (LSB-OIRW). Under the LSB-OIRW designation, new or increased loadings of any LSB-BSIC from point sources to the surface waters of the Lake Superior basin are prohibited unless the new or increased loading of a LSB-BSIC is consistent with the requirements of this rule.

(8) Except for water bodies designated as OSRWs, or as the department may determine on a case-by-case basis that the application of the procedures in this rule are required to adequately protect water quality, the following do not constitute a lowering of water quality.

(a) The short-term, temporary, for example, weeks or months, lowering of water quality.
(b) Bypasses that are not prohibited by regulations set forth in 40 C.F.R. §122.41(m) (1995).
(c) Response actions undertaken to alleviate a release into the environment of pollutants that may pose an imminent and substantial danger to the public health or welfare under any of the following:
(i) The comprehensive environmental response, compensation and liability act of 1980, (CERCLA), as amended, 42 U.S.C. §9601 et seq.
(ii) The resource conservation and resource recovery act of 1976, as amended, 42 U.S.C. §6901 et seq.
(iii) Part 201 of Act No. 451 of the Public Acts of 1994, as amended, being §§324.20101 to 324.20141 of the Michigan Compiled Laws.
(iv) Part 213 of Act No. 451 of the Public Acts of 1994, as amended, being §§324.21301 to 324.21331 of the Michigan Compiled Laws.
(v) Part 31 of Act No. 451 of the Public Acts of 1994, as amended, being §§324.3101 to 324.3119 of the Michigan Compiled Laws.
(d) Discharges of pollutant quantities from the intake water at a facility proposing a new or increased loading of a pollutant, if the intake and discharge are on the same body of water.
(e) Increasing the sewered area, connecting new sewers and customers, or accepting trucked-in wastes, such as septage and holding tank wastes, by a publicly owned treatment works, if the increase is within the design flow of the facility, there is no increased loading due to nondomestic wastes from a significant industrial user for BCCs that are not specifically limited in the current permit, and there is no significant change expected in the characteristics of the wastewater collected.
(f) Intermittent increased loadings related to wet-weather conditions.
(g) New or increased loadings due to implementation of department-approved industrial or municipal controls on wet-weather related flows, including combined sewer overflows and industrial storm water.
(h) New or increased loadings authorized by certificates of coverage under NPDES general permits and notices of coverage for storm water from construction activities.
(i) Increased non-BCC loadings within the authorized levels of a limit in an existing control document.
(j) Increased BCC loadings within the authorized levels of a limit in an existing control document, except for those BCC loadings that result from actions by the permittee that would otherwise require submittal of an increased use request.
(k) New or increased loadings at a site where there is a simultaneous enforceable decrease in the allowed loading of the pol lutant under consideration from sources contributing to the receiving water body, such that there is no net increase in the loading of the pollutant to the water body at that site consistent with trading rules established by the department.

(9) Except for water bodies designated as OSRWs, the following do not constitute a lowering of water quality:

(a) Increased loadings within the existing capacity and processes that are covered by the existing applicable control document, including the following:
(i) Normal operational variability.
(ii) Changes in intake water pollutants.
(iii) Increasing the production hours of the facility, for example, adding a second shift.
(iv) Increasing the rate of production.
(b) Changes in a control document that are not a result of changes in pollutant loading, but are the result of any of the following:
(i) Improved monitoring data.
(ii) New or improved analytical methods or sensitivity.
(iii) New or modified water quality values.
(c) Increased loadings of a pollutant which do not involve a BCC and which use less than 10% of the unused loading capacity that exists at the time of the request.

History: 1954 ACS 77, Eff. Dec. 13, 1973; 1979 AC; 1986 MR 11, Eff. Dec. 2, 1986; 1997 MR 7, Eff. July 28, 1997; 1999 MR 3, Eff. Apr. 2, 1999.

Glossary

ACUTE TOXICITY: The ability of a substance to cause severe biological harm or death soon after a single exposure or dose. Also, any harmful effect resulting from a single short-term exposure to a toxic substance.

ANNUAL WASTEWATER REPORT: A report required under Michigan law that must be filed by some facilities that discharge wastewater into the surface waters of the state or to a sewer system.

ANTIDEGRADATION POLICY: A requirement of the federal Clean Water Act; each state must establish a policy to protect the existing uses of waters, to avoid and minimize impacts to waters whose quality meets or exceeds established standards, and strictly protect outstanding waters.

BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE: The treatment technology-based standards set by EPA for discharges of toxic and non-conventional pollutants from existing sources. Where a BAT is defined, major sources are required to use it unless they demonstrate that it is not feasible for energy, environmental, or economic reasons.

BEST CONVENTIONAL POLLUTANT CONTROL TECHNOLOGY: The treatment technology-based standards adopted by the EPA for industrial discharges of conventional pollutants at existing sources.

BEST MANAGEMENT PRACTICES: Methods that have been determined to be effective, practical means of preventing or reducing pollution from nonpoint sources.

BEST PRACTICABLE CONTROL TECHNOLOGY CURRENTLY AVAILABLE: The initial treatment technology-based standards developed by EPA for industrial discharges; may still be used if the technology has not changed since the initial effluent limitation guidelines were adopted.

BEST PROFESSIONAL JUDGMENT: A method used on a case-by-case basis by permit writers to develop treatment technology-based effluent limitations when no regulatory effluent limitation guidelines exist, relying on the past experience and expertise of the permit writer.

BIOACCUMULATIVE: The retention and concentration of a substance by an organism. Substances that are taken up directly from the water or consumed in food that contains the substance become more concentrated by higher organisms as they are transferred up the food chain.

BIOCHEMICAL OXYGEN DEMAND: A measure of the amount of oxygen consumed in the biological processes that break down organic matter in water. The greater the BOD, the greater the degree of pollution.

BIOSOLIDS: The residues from treatment of sanitary sewage through one or more processes that reduce pathogens and attractiveness to disease vectors; generated at POTWs and can be applied to agricultural lands as a method of disposal.

CHRONIC TOXICITY: The capacity of a substance to cause long-term harmful health effects in humans, animals, fish, and other organisms.

COMBINED SEWER OVERFLOW: A collection system that carries storm water as well as domestic and/or industrial wastewater to a POTW. During wet weather, the volume of water may be so great as to cause overflows of untreated discharge into receiving waters.

COMPREHENSIVE NUTRIENT MANAGEMENT PLAN: A plan required for CAFOs that describes the farm operation, the amount of animal manure and wastewater output, how outputs are collected and stored, the nature of the storage structures, management practices for application of manure, feed management, chemical management, emergency action plan, and how records are kept.

CONCENTRATED ANIMAL FEEDING OPERATIONS: Agricultural operations where animals are raised for commercial purposes, such as dairies, hog farms, or turkey farms.

CONVENTIONAL POLLUTANTS: Statutorily listed pollutants that do not have a toxic effect including five-day BOD, TSS, pH, fecal coliform, oil and grease. Regulated in the original version of the Clean Water Act in 1972.

DESIGNATED USE: Those water uses identified in the state water quality standards that must be achieved and maintained as required under the Clean Water Act. Designated uses in Michigan are defined in Administrative Rule 323.1100.

DISCHARGE MONITORING REPORTS: The forms used by NPDES permit holders to report self-monitored data from their effluent discharges. DMRs are submitted monthly to the DEQ.

EFFLUENT LIMITATION: As defined in the Clean Water Act, "any restriction [including schedules of compliance] established by a State or the Administrator [of the EPA] on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources" into regulated waters. 33 USC § 1362(11).

EXISTING USE: The uses that the waterway supported or was clean enough to support on or after November 28, 1975. These uses must be protected by the state's water quality standards. While designated uses cover broader, more general classes of uses, existing uses can cover specific, often site specific, uses of waters.

ILLICIT DISCHARGE ELIMINATION PROGRAM: A program that prohibits dumping of substances such as motor oil, household hazardous wastes, among others, into the drainage system.

IMPAIRED WATERS: Waters that are not attaining water quality standards or supporting designated and existing uses, or where standards and supporting uses are threatened.

INDIRECT DISCHARGE: The discharge of pollutants into a municipal sewage treatment system from an industrial or commercial facility.

INDUSTRIAL PRETREATMENT PROGRAM: A program set up by a POTW that allows the POTW to set up a system where it receives wastewater from local industries and treats their waste, allowing for centralized waste treatment. The program requires the local industries to meet certain standards of "pre-treatment" before discharging their waste to the POTW. Through local ordinances adopted by the participating municipalities, the POTW must have regulatory and enforcement authority over the local industries discharging to the POTW.

INTENDED USE PLAN: The list of specific projects for future funding through the State Revolving Fund.

MIXING ZONES: A defined area within a water body where the discharge is mixed with surface waters.

NATIONAL ENVIRONMENTAL POLICY ACT: A federal law that requires the consideration of need, review of alternatives, analysis of environmental impacts, and public involvement in the review process for federal projects.

NEW SOURCE PERFORMANCE STANDARDS: Treatment technology-based standards that apply to new sources of discharge within EPA's established categories for effluent limitation guidelines.

NON-ATTAINMENT WATERS: Waters where water quality standards for the designated uses are not met.

NONPOINT SOURCE: Diffuse pollution sources, such as runoff, that do not have a single point of origin or that are not introduced into receiving waters from a specific outlet.

OUTFALL: The place where effluent is discharged into the receiving waters.

pH: An expression of the intensity of the basic or acid condition of a liquid. The pH scale ranges from 0 to 14, where 0 is the most acid, 14 is the most basic, and 7 is neutral.

POINT SOURCE: As defined under the Clean Water Act, "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 USC § 1362(14).

POLLUTANT: As defined in the Clean Water Act, any "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water." 33 USC § 1362(6).

PRIORITY POLLUTANTS: A list of 126 pollutants and classes of pollutants found at 40 CFR 122 Appendix D.

REASONABLE POTENTIAL ANALYSIS: The statistical projection of whether the parameters within a discharge are likely to violate water quality standards. This projection is based on a number of factors including quantity of data and available dilution.

RECEIVING WATERS: The water body into which runoff or wastewater flows.

SANITARY SEWER OVERFLOW: A sewer designed to carry only sewage from domestic and/or industrial facilities to a POTW. During wet weather, the volume of water may be so great as to cause overflows of raw or partially treated sewage into receiving waters.

STATE REVOLVING FUND: A low interest loan financing program to assist qualified local municipalities with the construction of needed water pollution control facilities.

STORMWATER POLLUTION PREVENTION PLAN: A plan required in some individual and general permits to manage storm water on site. It sets out requirements and implementation of structural and non-structural controls.

TOTAL MAXIMUM DAILY LOAD: A calculation of the maximum amount of a pollutant that a river, lake, or coastal water can receive before becoming unsafe and a plan to lower pollution to that identified safe level. As defined by the Clean Water Act regulations, a TMDL is "the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background…" See 40 CFR 130.2(i)

TOTAL SUSPENDED SOLIDS: All particles suspended in water that will not pass through a filter.

TOXIC POLLUTANTS: As defined under the Clean Water Act, "those pollutants or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will . . . cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring." 33 USC § 1362(13).

TREATMENT TECHNOLOGY-BASED STANDARDS: Minimum pollutant control standards for numerous categories of industrial discharges, sewage discharges and for other types of discharges. In each industrial category, the EPA establishes effluent limitation guidelines for particular pollutants based on the capability of a treatment technology to reduce the pollutant to a certain concentration.

WATER QUALITY CRITERIA: Descriptions of the chemical, physical, and biological conditions necessary to achieve and protect designated uses. They may be numeric or narrative, or a combination of both. Numeric criteria are scientifically derived limits set for a specific pollutant in order to protect human health or aquatic life. Narrative criteria are statements that describe the desired water quality goal.

WATER QUALITY STANDARDS: State-adopted and EPA-approved standards for water bodies, including designated uses, water quality criteria, and antidegradation requirements. In Michigan, the water quality standards are found in Administrative Rules 323.1041 through 323.1117, known as the Part 4 Rules.

WATERSHED: The land area that drains snow melt, rain, runoff, and surface waters into a stream, river, lake or other specific body of water. Large watersheds may be composed of smaller watersheds.

WHOLE EFFLUENT TOXICITY: : The total combined toxic effect of an effluent measured directly with a toxicity test.

Acronyms

ALJ: Administrative Law Judge

AWR: Annual Wastewater Report

BAT: Best Available Technology Economically Achievable

BCT: Best Conventional Pollutant Control Technology

BPT: Best Practical Control Technology Currently Available

BOD: Biochemical Oxygen Demand

BPJ: Best Professional Judgment

BMP: Best Management Practices

CAFO: Concentrated Animal Feeding Operation

CNMP: Comprehensive Nutrient Management Plan

COC: Certificate of Coverage

CSO: Combined Sewer Overflow

CWA: Clean Water Act

DEQ: Michigan Department of Environmental Quality

DMR: Discharge Monitoring Reports

ECHO: Enforcement and Compliance History On-Line

EPA: United States Environmental Protection Agency

FOIA: Freedom of Information Act

IDEP: Illicit Discharge Elimination Program

IPP: Industrial Pretreatment Program

IUP: Intended Use Plan

LCA: Level Currently Available

MEPA: Michigan Environmental Protection Act

MS4: Municipal Separate Storm Sewer Systems

NEPA: National Environmental Policy Act

NOC: Notice of Coverage

NPDES: National Pollutant Discharge Elimination System

NPS: Nonpoint Source

NREPA: Natural Resources and Environmental Protection Act

NSPS: New Source Performance Standards

OSRW: Outstanding State Resource Waters

PEAS: Pollution Emergency Alerting System

PCBs: Polychlorinated biphenyls

PCS: Permit Compliance System

POTW: Publicly Owned Treatment Works; also known as WWTP: Waste Water Treatment Plant

PSES: Pretreatment Standards for Existing Sources

PSNS: Pretreatment Standards for New Sources

RMP: Residuals Management Program

SEP: Supplemental Environmental Projects

SRF: State Revolving Fund

SSO: Sanitary Sewer Overflows

SWPPP: Storm Water Pollution Prevention Plan

TMDL: Total Maximum Daily Load

TSS: Total Suspended Solids

TTBEL: Treatment Technology-Based Effluent Limitation

WET: Whole Effluent Toxicity

WQBEL: Water Quality-Based Effluent Limitation

WWTP: Waste Water Treatment Plant; also known as POTW: Publicly Owned Treatment Works