

MUNICIPAL NPDES PERMITTING STRATEGY FOR PFOS AND PFOA

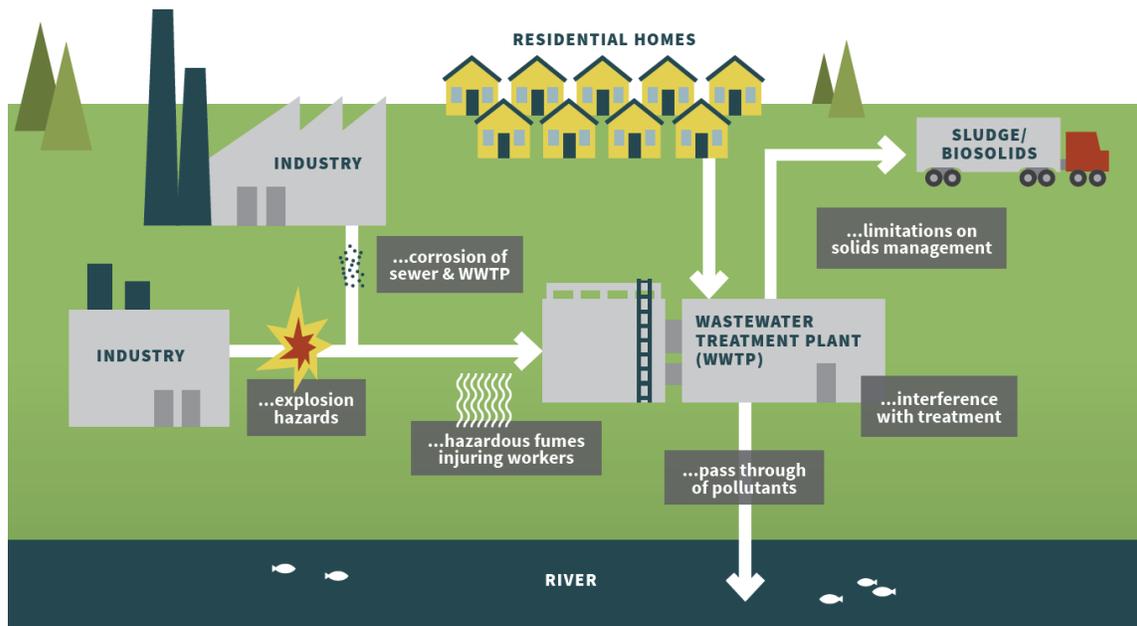
WATER RESOURCES GUIDANCE

BACKGROUND

Perfluoroalkyl and polyfluoroalkyl substances (PFAS), also known as perfluorochemicals (PFCs), have been classified by the U.S. Environmental Protection Agency as an emerging contaminant on the national level. PFAS are a suite of chemicals historically used in thousands of applications throughout the industrial, food, and textile industries. Historical uses include firefighting foams, food packaging, cleaning products, and various other products. It is also used by many industries such as plating, tanneries, or clothing manufacturers, where waterproofing may be required, or a protective film is needed in a manufacturing process. These chemicals are incredibly stable, breaking down very slowly in the environment, and are highly soluble, easily transferring through soil to groundwater. The Part 4, Water Quality Standards (WQS) (Part 4 Rules), promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), exist for two of these chemicals, perfluorooctane sulfonate (**PFOS**) and perfluorooctanoic acid (**PFOA**). PFOS is considered a bioaccumulative chemical of concern (BCC). While concentrations of both chemicals have been detected in influent and/or effluent at some municipal wastewater treatment plants (WWTP), PFOS has been found in higher concentrations in wastewater effluent relative to its WQS and is the focus of this strategy.

Pollutants in industrial wastewater may interfere with municipal treatment plant processes or contaminate waters of the state (i.e., pass-through). To protect municipal treatment plants and the environment, the Industrial Pretreatment Program (IPP) requires industrial dischargers to use treatment techniques and management practices to reduce or eliminate the discharge of harmful pollutants to sanitary sewers. The figure below shows why the IPP is important to protect health, safety, and Michigan’s surface waters.

Industrial Pretreatment Programs Protect Against...



In February 2018, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) launched the IPP PFAS Initiative, requiring all WWTPs with either federal- or state-required IPPs to determine whether they may be passing through PFOS and/or PFOA to surface waters and reduce and eliminate any sources if found. For municipal WWTPs, the majority of PFOS sources were metal finishers, contaminated sites associated with industries or activities associated with PFOS, and landfills that accepted industrial wastes containing PFOS. Chemical manufacturers in the United States voluntarily stopped making PFOS and PFOA years ago; however, these chemicals may still be manufactured in other countries and imported. Industries were prohibited from using PFOS-containing chemicals in chromium electroplating tanks in September 2015, but these persistent chemicals have been found in factories years after they were used. Sites contaminated by firefighting foams or PFAS-contaminated industrial wastes have also been found to be sources for WWTPs if they discharge to the sanitary sewer.

Unfortunately, conventional WWTP treatment does not effectively remove PFAS if it is discharged to the sewer system by industries or contaminated sites. Instead, PFAS may be passed through WWTPs to lakes, streams, and groundwater, as well as interfere with the WWTP by impacting management of solids from the treatment process.

GOAL

The goal of this Permitting Strategy is to reduce or eliminate the emerging pollutants PFOS and PFOA at municipal WWTPs using National Pollutant Discharge Elimination System (NPDES) permits. Currently, municipal WWTP permits do not specify effluent limitations for PFOS or PFOA while the WWTPs are completing the IPP PFAS Initiative. For NPDES permits issued after **October 1, 2021**, permits will specify effluent limits with schedules, as appropriate, after completion of the IPP PFAS Initiative if PFAS concentrations in WWTP effluent have not been sufficiently reduced to meet appropriate WQS.

Industrial and stormwater discharges that either discharge directly to surface waters (e.g., lakes, streams, county drains) or to separate storm sewer systems will generally be addressed with an Administrative Consent Order.

SUMMARY OF NPDES REQUIREMENTS

1. For WWTPs identified under the IPP PFAS Initiative as having sources of PFAS, NPDES permits will now include the following:
 - PFOS and PFOA monitoring requirements.
 - Specific analytical methods and quantification levels for PFOS and PFOA.
 - Option to request monitoring frequency reductions for PFOS and PFOA.
 - Pollutant Minimization and Source Evaluation Program for PFOS and PFOA and related reporting requirements (for those WWTPs whose effluent exceeds WQS).

2. For WWTPs with IPPs, even those where no sources have been found, NPDES permits will now include the following:
 - PFOS and PFOA monitoring at least four times over the five-year permit cycle.
 - Upon written notification, a WWTP may be subject to an increase in monitoring frequency if at any time effluent exceeds the WQS for PFOS or PFOA.
3. For WWTPs categorized as majors (design flows greater than one million gallons per day), even those where no sources have been found, NPDES permits will now include the following:
 - PFOS and PFOA monitoring at least four times over the five-year permit cycle.
 - Upon written notification, a WWTP may be subject to an increase in monitoring frequency and/or be required to undergo the steps outlined in the IPP PFAS Initiative if at any time effluent exceeds the WQS for PFOS or PFOA.

CATEGORIZATION OF FACILITIES WITH PFOS

Information from the IPP PFAS Initiative was utilized to sort WWTPs into “Bins,” based on their effluent results and potential for sources. WWTPs were categorized as Bin 1, 2, 3a, or 3b. Effluent data for PFOS was used to categorize facilities as outlined below.

Bin	Sources Present	PFOS Effluent Data > WQS	PFOS Effluent Data (ng/L)
3b	Yes	Yes	≥50
3a	Yes	Yes	13-49
2	Yes	No	≤12 ng/L
1	No	No*	<12 ng/L*

*Bin 1 facilities may not have effluent data.

MONITORING REQUIREMENTS

In general, facilities categorized above will have the following monitoring and permit requirements. Note that facilities categorized as Bin 2 facilities will contain language that triggers the implementation of the Pollutant Minimization and Source Evaluation Program and Reporting Requirements if effluent results rise above WQS.

Bin	Effluent Monitoring	Option for Monitoring Frequency Reduction	Pollutant Minimization and Source Evaluation Program	Reporting Requirements
3b	Monthly	Yes	Yes	Yes
3a	Monthly	Yes	Yes	Yes
2	Quarterly	Yes	Yes, with trigger	Yes, with trigger
1	4x/5-yr Permit Cycle	No	No	No

POLLUTANT MINIMIZATION AND SOURCE EVALUATION PROGRAM FOR PFOS/PFOA

A Pollutant Minimization and Source Evaluation Program will require that facilities identify and eliminate or reduce sources of PFOS and/or PFOA and at a minimum include:

- Identification of, and strategies to identify, PFOS and/or PFOA sources.
- Effluent, influent, and source monitoring.
- Measures to eliminate, reduce, and/or control sources.
- Strategies that will be used to measure success.
- Facilities will be required, at a minimum, to submit annual reports detailing the progress of the Pollutant Minimization and Source Evaluation Program. Annual reports will be reviewed by EGLE staff and additional work required if needed. EGLE may require an increase in monitoring frequency due to PFOS effluent variability or exceedance of the WQS based on data submitted to EGLE and/or if the facility has been reclassified into a higher bin category.

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