

Region 5 NPDES Program and Permit Quality Review Michigan

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Executive Summary

This report presents results of a Program and Permit Quality Review (PQR) of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) National Pollutant Discharge Elimination System (NPDES) program. The U.S. Environmental Protection Agency (EPA) conducted the PQR in November 2021 under the authority of the Clean Water Act (CWA) to provide oversight of the state NPDES program. Helping states ensure that their NPDES permits are consistent with federal requirements is a fundamental priority for EPA.

The review examined NPDES permit administrative records, gathered information from the state about its NPDES program structure and organization, and included conference calls and virtual meetings where the EPA review team spoke with EGLE permitting staff and managers to share preliminary findings. The review followed EPA's national NPDES PQR Standard Operating Procedures (SOPs), examining permit and program "core" elements and permit requirements associated with national topic areas for the current PQR cycle. Core elements are permit administration, effluent limitations, monitoring requirements, standard conditions, and special conditions. National topic areas for the fiscal year (FY) 2018 – 2022 PQR cycle are Permit Controls for Nutrients in Non-Total Maximum Daily Load (TMDL) Waters, Effectiveness of NPDES Permits for Publicly Owned Treatment Works (POTWs) with Food Processor Contributions, and Small Municipal Separate Storm Sewer System (MS4) Permit Requirements. EPA Region 5 chose not to include any regional topic areas for the FY 2018 – 2022 PQR cycle.

As of October 21, 2021, EGLE administers 764 non-MS4 individual permits, 209 individual MS4 permits, and 26 general permits in its NPDES program. From this universe, the 14 individual permits issued between fiscal years 2016 and 2021 that had not undergone an EPA real time review (RTR) were selected for this review.¹ The selection methodology met the minimum number of permit types and facility sizes prescribed in the PQR SOP. Of the 14 permits, 8 were issued to municipal wastewater treatment facilities, 2 to MS4s, and 4 to non-municipal facilities.

Major Findings

The PQR found that EGLE successfully upholds the mission of the CWA through processes and tools for staff development and program administration. Through its culture of continuous improvement and innovation, EGLE has a robust and effective program. Strengths of the permit program include clearly written procedures and customizable templates for staff to employ during permit development, auto-generated email application reminders to permittees, and a well-established watershed-based permit development/issuance approach. EGLE's well-established, multi-purpose MiWaters platform (now MiEnviro) supports an online environment

¹ EPA conducts RTRs under the authority of the CWA to provide oversight of authorized state NPDES programs. RTRs consist of reviews of selected draft or proposed NPDES permits the state intends to issue. This is a shared-governance approach where states and the EPA work together to fulfill their statutory and regulatory responsibilities.

that provides varying levels of accessibility and functionality for EGLE staff, NPDES permittees, and the general public.

Additionally, the PQR found that EGLE responds to new challenges when they arise. EGLE acted quickly and demonstrated leadership in adding NPDES permit requirements to monitor per- and polyfluoroalkyl substances (PFAS) at specific discharger types. EGLE also continues to be a leader in championing asset management through special conditions in major municipal NPDES permits. Currently, EGLE is developing general permit conditions for owners/operators of sanitary sewer systems to adopt a capacity, management, operations, and maintenance (CMOM) approach similar to asset management but focused on the sewer system.

Action Items

The permits reviewed generally conform with federal requirements. However, the PQR identified eight essential and 10 recommended action items to address areas for improvement. Some action items were shared with EGLE managers in November 2021 as preliminary findings. Essential action items must be addressed by EGLE to meet federal NPDES regulations and will be subject to agreed-upon milestones and due dates as a part of a workplan to be developed. Essential action items from this PQR concern permit application requirements, development and documentation of permit limits, and certain special conditions.

Recommended action items are an opportunity for EGLE to implement EPA guidance/policy more fully or otherwise improve program effectiveness. Most of the recommended action items are associated with documentation and fact sheets. They also address permit content, including how best to represent influent and effluent monitoring point locations. When conducting assessments for nutrients, the report recommends that EGLE continue with its efforts to establish effluent limits for any pollutant that will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard.

EPA is available to assist EGLE in addressing all action items and will annually track EGLE's progress with essential action items. The status of all action items will be reported during the next PQR cycle.

I. PQR BACKGROUND

An NPDES PQR is an evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the CWA and NPDES regulations. Through this review mechanism, EPA promotes national consistency, and identifies successes in implementation of the NPDES program as well as opportunities for improvement in the development of NPDES permits.

This PQR report identifies action items from a PQR at EGLE in 2021. The action items are identified within Sections III and IV of this report and are divided into two categories to identify the priority that should be placed on each item.

- **Essential Actions** – Address inconsistencies with a federal regulation, which EPA cites for each essential action item.
- **Recommended Actions** – Make recommendations based on guidance, policies, or other best practices.

The essential actions are used to augment the existing list of “follow-up actions” currently tracked by EPA Headquarters on an annual basis and are reviewed during subsequent PQRs.

EPA’s review team, consisting of six EPA Region 5 staff and two EPA Headquarters contractor staff, conducted the PQR remotely. EGLE provided the requested permit and program information to EPA electronically and participated in meetings with EPA and the contractor via Microsoft Teams. Meetings included an opening interview on November 15, 2021, discussion about specific topics on November 16, 2021, and a closing meeting on November 19, 2021. The PQR considered a review of core permit areas and national topic areas.

Core Review

The core review evaluates selected permits and supporting materials using basic NPDES program criteria. Core reviews evaluate similar issues or types of permits in all states to focus permit quality on the *Central Tenets of the NPDES Permitting Program*.² Reviewers complete the core review by examining selected permits and supporting documentation, assessing these materials using standard PQR tools, and talking with permit writers regarding the permit development process.

Topic Area Review

National topic areas reviewed in this PQR are: Permit Controls for Nutrients in Non-TMDL Waters, Small MS4 Permit Requirements, and Effectiveness of POTW NPDES Permits with Food Processor Industrial User (IU) Contributions.

EPA Region 5 has elected not to include an optional regional topic in this review.

² <https://www.epa.gov/npdes/central-tenets-npdes-permitting-program>

Permits Selected for the PQR

As shown in Table 1, the PQR involved 14 individual permits issued within five fiscal years prior to the start of the PQR. Eight of the permittees are municipal (POTW), four are non-municipal (non-POTW), and two are small MS4s. Except for the small MS4s, all underwent a core review. Including the small MS4s, eight were reviewed for one or more national topic areas.

Table 1. Permits Selected for the PQR

Permittee (NPDES Number)	FY Issued	Core Review				National Topics		
		Major	Minor	POTW	Non- POTW	Small MS4	Nutrients	Food Processor IU
City of Rogers (MI0057813)	2017		X	X				
DTE Energy, Detroit (MI0038172)	2017	X			X			
Landfill Management Company (MI0058853)	2017		X		X			
City of Coopersville (MI0022730)	2017	X		X			X	X
St. Mary's Cement (MI0003158)	2019	X			X			
Tawas Utility Authority (MI0021091)	2020	X		X				
City of Plainwell (MI0020494)	2021	X		X				
City of East Lansing (MI0022853)	2016	X		X			X	
DTE Energy, Fermi 3 (MI0058892)	2017				X		X	
City of Wyoming (MI0024392)	2016	X		X				X
Lakewood Wastewater Authority (MI0042978)	2019	X		X				X
City of Saginaw (MI0025577)	2018	X		X				X
City of East Lansing (MI0059327)	2020					X		
Northville Township (MI0060048)	2020					X		
Total	14	9	2	8	4	2	3	4

II. STATE PROGRAM BACKGROUND

A. Program Structure

EPA granted the state of Michigan authority to administer and implement the NPDES program on October 17, 1973. Between 1978 and 2006, EPA amended and expanded Michigan's NPDES program authority as follows: 1) on December 9, 1978, to regulate federal facilities; 2) on June 7, 1983, to administer the pretreatment program; 3) on November 29, 1993, to issue general NPDES permits; and 4) on September 28, 2006, to administer the biosolids program.

EGLE (formerly called the Department of Environmental Quality, (DEQ)) is the NPDES permitting authority for the state of Michigan. When EGLE formed in 2019, it assumed DEQ responsibilities along with the addition of a newly organized Office of Climate and Energy and took responsibility for the Office of the Great Lakes which had previously been part of the Michigan Department of Natural Resources. In 2021, the EGLE Water Resources Division (WRD) comprised six sections: Permits, Surface Water Assessment, Field Operations (Lakes Erie and Huron), Emerging Pollutants, Field Operations (Lakes Michigan and Superior), and Field Operations Support. The Permits Section was divided into specific units, including Water Use Assessment, Municipal Permits, Water Quality and Aquatic Nuisance Control Permits, Groundwater Permits, and Industrial and Storm Water Permits.

EGLE's main office is in Lansing, with 10 district offices located throughout the state. Staff in the main office are responsible for developing and issuing NPDES permits, and staff in the district offices manage permit compliance. NPDES permits are developed by four different units of the Permits Section: the Industrial Permits Unit, the Municipal permits unit, the Storm Water permits unit, and the Water Quality and Aquatic Nuisance Control Permits Units. The Surface Water and Assessment Section in the Water Toxics Unit develops water quality standards (WQS).

In 2021, EGLE employed 22 full-time equivalent (FTE) staff to develop NPDES permits. On average, seven were dedicated to municipal permitting and 15 focused on non-municipal permitting. In addition, five FTE specifically supported the development of water quality-based effluent limitations (WQBELs).

EGLE reports that in recent years, the state typically drafts NPDES permits covering 55 municipalities, 20 industries or commercial establishments, 70 MS4s, and 2 concentrated animal feeding operations (CAFOs) annually. EGLE estimates that staff issue an average of 10 permit modifications per year. Permit writers in the main office receive support from other EGLE staff including administrative staff, water quality experts, compliance and enforcement staff, and legal staff.

EGLE permit writers receive professional training through internal mentoring and attending EPA's NPDES Permit Writers' Course (5-day), internal EGLE training, and conferences and courses provided by professional organizations, such as the Water Environment Federation and the Michigan Water Environment Association.

EGLE maintains an extensive collection of written procedures, strategies, and guidance to support permit writers and WQBEL developers. They include guidance for developing WQBELs, conducting whole effluent toxicity (WET) reviews, developing effluent limitations and monitoring requirements specifically for temperature and total phosphorus, implementing antidegradation and anti-backsliding requirements, and developing supporting documentation (e.g., fact sheets and basis for decision memos). One strategy -- *Municipal Permitting Strategy for PFOS and PFAS [perfluorooctane sulfonate and perfluorooctanoic acid]* -- addresses permitting decisions related to PFOS and PFAS, two types of per- and polyfluoroalkyl substances (PFAS). In addition, permit writers consult the EPA *Permit Writers' Manual*.

EGLE uses MiWaters to store NPDES permit administrative records and other files related to permit development, including permit applications, correspondence, internal memoranda, compliance reports, and monitoring information.³ Except for some historical documents and documents that are in larger format or otherwise difficult to digitize, which are retained in hard copy, most permit files are in electronic format. EGLE is in the process of digitizing historical permit documents to add them to MiWaters. MiWaters includes features such as:

- Facility and discharge location mapping – EGLE permit writers and EGLE aquatic biologists who support the NPDES program use MiWaters' mapping features to search for applicable TMDLs, threatened and endangered species, waterbody ambient data, designated uses, and use attainment status.
- Permit compliance data entry/retrieval – EGLE uploads data from MiWaters to EPA's NPDES Integrated Compliance Information System (ICIS).
- Draft permit development – EGLE permit writers use MiWaters to generate permit documents.
- Permit application processing – Individual permit applications and general permit applications for certificates of coverage (COC) are submitted by the permittee directly to MiWaters. About 180 to 200 days prior to individual permit (IP) or general permit (GP) expiration, MiWaters auto-generates an email reminder to the permittee. The reminder email includes the application due date and provides the expiration date of the IP or GP/COC.

EGLE permit writers use templates for developing NPDES permits, fact sheets, basis for decision memos, notices of intent (NOIs) for general permits, and public notices. Permit writers also use a standardized Excel spreadsheet to conduct reasonable potential analysis (RPA) and develop WQBELs. Permit writers may also use individual spreadsheets to document technology-based effluent limitations (TBEL) calculations.

EGLE's permit development timeframes are established in Michigan's Natural Resources and Environmental Protection Act 451 (Michigan Compiled Laws Section 324.3120). (The

³ MiWaters, the WRD permitting and compliance application, was active when the PQR review process was being conducted. As of 2023, MiWaters was upgraded and renamed MiEnviro Portal.

timeframes apply for the purpose of retention or return of permit application fees.) EGLE utilizes a strategic “5-Year Basin Plan” as an effective approach to organize EGLE workloads and permit issuance activities. Given that nearly all individual permits are issued for a five-year term, the approach divides individual permits across the state into five groups so that approximately 20 percent of the state’s individual permits need a reissuance action each year. Because each group is within the boundary of certain watersheds, EGLE is able to schedule watershed evaluations to coincide closely with upcoming permit actions. Similarly, EGLE can develop individual permits within the watershed(s) to have the same issuance and expiration date. When the group of individual permits expire on October 1, staff can pace their work throughout the year to process the applications (received by April 1 or 180 days prior to permit expiration), prepare the draft permits, give public notice (including public hearings if necessary), and issue the permits (by September 30 or midnight on the day prior to permit expiration). EGLE’s watershed-based method for organizing NPDES permit development work is a national model.

EGLE uses peer review and management review for permit quality assurance/quality control (QA/QC). During permit development, EGLE aquatic biologists within the Permits Section complete peer review of the “*WQBEL Memo – Toxics*,” also known as the WQBEL toxics memo. EGLE management reviews the “*WQBEL Memo – Conventionals*,” also known as the WQBEL conventionals memo. As permit development proceeds, permit writers share draft permits for peer review and then management review prior to sharing the pre-public notice draft permit with the discharger and, when requested, EPA Region 5. District compliance staff complete a *District Application Compliance Comments* document to provide input on draft permits. After the draft permit undergoes public notice, a second management review and database QA/QC review occur prior to permit issuance. EGLE does not use a QA/QC checklist.

B. Universe and Permit Issuance

As of October 21, 2021, EGLE administers 764 individual non-MS4 NPDES permits, 209 individual MS4 permits, and 26 GPs. Among the individual non-MS4 permits, 175 are major permits: 67 are non-municipal majors and 108 are municipal majors. The GPs are identified in Table 2, with the issuance date, effective date, and expiration date as of October 21, 2021.

As of October 21, 2021, all MS4 permits and all GPs are current (i.e., not administratively extended), whereas 255 of the 764 individual non-MS4 permits (or approximately 33 percent) are administratively extended. Of the 255 administratively extended IPs, 104 are municipal permits and 151 are non-municipal; 98 are major permits and 157 are minor.

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Table 2. NPDES General Permits ^{4, 5}

NPDES Number	Permittee	Issuance Date	Effective Date	Expiration Date	Number of Facilities Covered
MIG033000	Forest Canopy Pest Control	1/31/2017	2/1/2017	2/1/2022	8
MIG030000	Mosquito and Other Flying Insect Pest Control	1/31/2017	2/1/2017	2/1/2022	9
MIG032000	Nuisance Animal Control and Fish Reclamation	1/31/2017	2/1/2017	2/1/2022	2
MIG031000	Nuisance Plant and Algae Control	1/31/2017	2/1/2017	2/1/2022	85
MIG010000	Concentrated Animal Feeding Operations	3/27/2020	4/1/2020	4/1/2025	234
MIG080000	Petroleum-Contaminated Wastewater	3/31/2020	4/1/2020	4/1/2025	32
MIG490000	Mining Wastewater	9/17/2019	4/1/2020	4/1/2025	19
MIG570000	Secondary Treatment Wastewater	12/26/2019	4/1/2020	4/1/2025	17
MIG640000	Wastewater Discharge from Municipal Potable Water Supply	1/22/2020	4/1/2020	4/1/2025	14
MIG760000	Public Swimming Pool Wastewater	8/29/2019	4/1/2019	4/1/2025	38
MIG960000	Land Application of Biosolids	11/25/2019	4/1/2020	4/1/2025	5
MIS040000	Storm Water Discharges from Municipal Separate Storm Sewer Systems (MS4s) - Jurisdictional General Permit ⁶	2/25/2003	4/1/2003	4/1/2008	12
MIG619000	Storm Water Discharges from Municipal Separate Storm Sewer Systems (MS4) - Watershed General Permit ⁶	12/5/2002	4/1/2003	4/1/2008	28
MIG250000	Non-Contact Cooling Water	8/29/2019	8/29/2019	4/1/2023	92
MIG670000	Hydrostatic Pressure Test Water	3/29/2018	4/1/2018	4/1/2023	25
MIG580000	Wastewater Stabilization Lagoons	1/29/2019	4/1/2019	4/1/2024	21
MIS110000	Storm Water Discharges Not Associated with Special-Use Areas for Cycle-Year 1 Watersheds	10/27/2020	4/1/2021	4/1/2026	180
MIS120000	Storm Water Discharges Associated with Special-Use Areas for Cycle-Year 1 Watersheds	10/27/2020	4/1/2021	4/1/2026	7
MIS210000	Storm Water Discharges Not Associated with Special-Use Areas for Cycle Year 2 Watersheds	8/31/2016	4/1/2016	4/1/2022	465

⁴ Information in this table is current as of July 21, 2022.

⁵ This table does not include the Construction Stormwater Permit which is subject to “Permit by Rule” (Rule 323.2190, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended [NREPA]). For more information see: <https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/WRD/Storm-Water-SESC/permit-by-rule-construction-storm-water-faq.pdf?rev=e5b749ee443c49cddb4003fb9e7c094d&hash=20393CB75CA457CE441D6DF07D7E2BF8>

⁶ Facilities previously covered by general permits MIS040000 and MIG619000 have transitioned or are currently being transitioned into individual permits. Facilities not yet covered by an individual permit are currently under administrative order.

NPDES Number	Permittee	Issuance Date	Effective Date	Expiration Date	Number of Facilities Covered
MIS220000	Storm Water Discharges Associated with Special-Use Areas for Cycle-Year 2 Watersheds	8/31/2016	4/1/2017	4/1/2022	50
MIS310000	Storm Water Discharges Not Associated with Special-Use Areas for Cycle Year 3 Watersheds	9/28/2017	4/1/2018	4/1/2023	346
MIS320000	Storm Water Discharges Associated with Special-Use Areas for Cycle Year 3 Watersheds	9/28/2017	4/1/2018	4/1/2023	46
MIS410000	Storm Water Discharges Not Associated with Special-Use Areas for Cycle Year 4 Watersheds	8/3/2018	4/1/2019	4/1/2024	312
MIS420000	Storm Water Discharges Associated with Special-Use Areas for Cycle Year 4 Watersheds	8/3/2018	4/1/2019	4/1/2024	35
MIS510000	Storm Water Discharges Not Associated with Special-Use Areas for Cycle-Year 5 Watersheds	8/29/2019	4/1/2020	4/1/2025	328
MIS520000	Storm Water Discharges Associated with Special-Use Areas for Cycle-Year 5 Watersheds	8/29/2019	4/1/2020	4/1/2025	37

EGLE identified the following significant industries in the state with regard to NPDES permitting: steel manufacturing, power plants, paper manufacturing, automotive parts manufacturing, landfills and hazardous waste collection, mining, and groundwater cleanup sites.

C. State-Specific Challenges

When asked about training needs or interests, EGLE responded that an EPA NPDES permit writer training on CAFOs and pesticides would be helpful, as would NPDES program guidance related to priority issues such as climate change.

D. Current State Initiatives

EGLE has been working with stakeholders to develop a general permit covering about 500 sanitary sewer systems (customer communities), which are connected to an NPDES permitted facility but are outside the jurisdictional boundary of the NPDES permittee. The general permit would include requirements for the customer community to implement CMOM provisions, to help ensure the sewer system is properly operated and maintained and to adequately control excessive infiltration and inflow, thereby reducing the potential for treatment plant hydraulic overloading and sanitary sewer overflows.

EPA defines a new permit as backlogged if it is not issued or denied within 360 days of receipt of the complete application. EPA defines an existing permit as backlogged if the permit is not renewed 180 days after expiration date, provided an application was received allowing the permit to be administratively extended. EGLE is implementing a plan to reduce the number of individual permits on backlog, with progress being monitored through the state's performance partnership agreement with EPA.

EGLE is a leader in addressing emerging pollutants such as PFAS. Success is owed in part to EGLE’s Emerging Pollutants Section in the WRD which has been investigating PFAS to determine reasonable pollution control approaches. In one approach, EGLE established the Industrial Pretreatment Program PFAS Initiative in 2018 to study wastewater treatment and source control methods.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Background

Basic facility information is necessary to properly establish permit conditions. For example, information regarding facility type, location, treatment processes and other factors is required by NPDES permit application regulations (40 CFR 122.21). This information is essential for developing technically sound, complete, clear, and enforceable permits. Similarly, fact sheets must include a description of the type of facility or activity subject to a draft permit.

The review found that EGLE’s fact sheets and permit applications contain facility information, including the facility background, type of operation, wastewater treatment processes, expected waste streams, and receiving water.

Program Strengths

The review team did not identify any program strengths in this core area.

Areas for Improvement

The review team did not identify any areas for improvement in this core area.

Action Items

Essential

- The PQR did not identify any essential action items for this section.

Recommended

- The PQR did not identify any recommended action items for this section.

2. *Permit Application Requirements*

Background and Process

Federal regulations at 40 CFR 122.21 and 122.22 specify application requirements for persons seeking NPDES permits. Although federal forms are available, authorized states are also permitted to use their own forms provided they include all information required by the federal regulations. This portion of the review assesses whether appropriate, complete, and timely application information was received by the state and used in permit development.

MiWaters allows persons to submit applications electronically and is programmed to send current permittees an email reminding them of the upcoming date for submitting the permit renewal application. The reminder email is sent about six months prior to the permit application due date. MiWaters maintains a list of created applications, allowing the supervisor to manage staff assignments prior to application submittal. Once the application is submitted, MiWaters automatically notifies the permitting unit supervisor who assigns the permit action to the permit writer for processing (e.g., application review).

Permit writers review individual permit applications and general permit COCs to determine whether they are complete. An EGLE guidance document (“NPDES Individual Permit Application and Permit Processing Guidance Document”) outlines the process for individual permits, which involves a workflow in MiWaters. The permit writer is expected to enter in MiWaters the date on which the application was deemed to be complete.

The PQR observed the following different forms used for the completeness review:

- Processing Checklists for IP Application and COC – allows the permit writer to enter the date the application or COC is received, the review due date, whether an application or COC is complete, and if not when the incomplete notice was sent.
- NPDES Application Review Checklist for Treatment Works Treating Domestic Sewage – allows the permit writer to check whether the right form was used, if identification information is correct, whether contacts are identified, if an increased loading is expected, and if maps and location information are provided, etc. This checklist identifies the date of EGLE staff review, but not the date when EGLE deems the application to be complete.
- NPDES Application Review Checklist for Industrial / Commercial Facilities – allows the permit writer to check, among other things, whether the appropriate form was used; if increased flow or loading is expected; and if entries for applicant name, facility information, facility contacts, antidegradation, laboratory services, analytical data, outfall information are correct. The checklist includes the date of the permit application and date of EGLE staff review, but not the date when EGLE deems the application to be complete.
- Parts 31, 301, 303, and 325 Application Administrative Completeness Review Checklist – used for general permits and minor projects categories.
- Application Compliance Comments – allows the WRD to comment on the permit status during the application phase. Space is provided to comment on the facility’s compliance

status, accuracy of the facility description, if staff are aware of operational issues or anticipated changes at the facility in the next five years, and any biosolids issues.

District staff and an aquatic biologist assist the permit writer in reviewing the permit application for completeness (e.g., to verify the application's facility description or review analytical data). The permit writer is allowed 90 days from receipt to complete the review of an application, but usually the reviews are completed sooner.

EGLE uses state NPDES permit application forms. EGLE updated these forms in 2021. All applications for permits reviewed in this PQR were submitted within 180 days prior to permit expiration.

The PQR considered applications and available supporting information for two non-municipal permits (MI0003158 and MI0058892) and five municipal permits (MI0020494, MI0021091, MI0022730, MI0022853, MI0025577). The PQR did not consider data in attachments or hyperlinks if referenced in applications but not provided or not accessible (due to inactive hyperlinks). The following describes observations and findings.

Non-municipal Permit Applications

The application for MI0058892 was submitted as a permit renewal.

- The permitted facility has not yet been built and has not commenced discharging. Most application information is rolled over from the application for the previous permit, which was a new permit application and includes projections of effluent quality based on a similar facility owned by the applicant and permitted by EGLE.

The application for MI0003158 was submitted as a permit renewal.

- The state's application form does not provide space for identifying whether toxic substances (i.e., pollutants required by Table 2C in the EPA application form) are or are not present. Data for most toxic substances is not reported in the application and the application does not show whether the applicant believes these substances are or are not present. According to 40 CFR 122.21(g)(7)(vi) and (vii), applicants with discharges from existing manufacturing operations are to indicate on the form provided by the Director for each outfall whether they "know or have reason to believe" specific pollutants are present.
- The application did not include quantitative data for 5-day biochemical oxygen demand (BOD₅), chemical oxygen demand (COD), total organic carbon (TOC), and ammonia (as Nitrogen [N]) for all outfalls, and total suspended solids (TSS) for outfall 004. This is required data unless the state determines that a waiver is appropriate in accordance with 40 CFR 122.21(g)(7)(iv). The application provided waiver requests for these outfalls and parameters with the rationale, "NOT ASSOCIATED WITH CEMENT MANUFACTURING." Since the permit renewal went forward without the data, the review concluded that EGLE approved the waivers, but did not document the timing or

basis of EGLE's decision on the matter. It was noted that EGLE's Application Review Checklist, question B.3., asks if a waiver is requested, not if one was granted. The PQR determined that the record would be improved if EGLE documented its decisions on these types of waiver requests.

Municipal Permit Applications

EGLE NPDES permit application Section II – Sanitary Wastewater part B (Outfall Information) does not require applicants with design average flow greater than 0.1 million gallons per day (MGD) to report data for total Kjeldahl nitrogen (TKN), nitrate/nitrite, and oil and grease (O&G). According to 40 CFR 122.21(j)(4)(iii), these types of applications must include effluent data shown in Part 122 Appendix J, Table 1, which includes TKN, nitrate/nitrite, and O&G unless the Director has waived this requirement as they have access to substantially similar information.

The review found that applications for all five municipal permits did not provide data for nitrate/nitrite, TKN and O&G, nor was it evident that substantially similar information was available. In addition, the *Application Review Checklist* did not ask whether data for nitrate/nitrite, TKN, and O&G were provided.

The review noted one municipal permit (MI0022730) where application deficiencies were identified, but the record included no date showing when the deficiencies were resolved.

Regulations at 40 CFR 122.21(j)(6)(i) and (ii) state that NPDES applications must identify the number of significant Industrial users (SIUs) and non-significant categorical industrial users (NSCIUs), including SIUs or NSCIUs that haul or truck waste discharging to the POTW. Applications reviewed include some but not all of this information. Specifically, applications identify the number of SIUs and provide specific information about them. However, EGLE's application forms provide no space for the applicant to input the number of NSCIUs. The review found no indication that input about the number of SIUs is waived per 40 CFR 122.21(j)(6)(iii).

The application for one permit (MI0021091) reported toxic pollutant non-detects ("ND") but did not fill in the corresponding space provided for the analytical method used and method detection limit. This information is identified in 40 CFR 122.21(j)(4)(ix)(C) and (D) as application requirements for new and existing POTWs. The permit record has no indication that the state has access to substantially identical information about these parameters submitted by the permittee in DMRs or by other means.

Program Strengths

The automated process developed by ELGE in MiWaters is an efficient way to generate application reminder emails to permittees about six months prior to the date a permit renewal application is due.

EGLE staff review applications for completeness and EGLE has developed forms to help guide staff with their application completeness reviews. EGLE staff are expected to conduct appropriate and timely follow-up with permit applicants to address application deficiencies.

Areas for Improvement

When application deficiencies are noted, the permit writer should use the *Application Review Checklist* or some other form to record follow-up and document the date that the application is deemed complete.

The state should review NPDES permit application forms for existing facilities to ensure applications meet information requirements in 40 CFR 122.21(g)(7)(vi), and (vii) and 122.21(j); Appendix J to Part 122.

Action Items

Essential	<ul style="list-style-type: none"> Ensure that required information is included in permit application submittals. See 40 CFR 122.21(g) for non-municipal applicants and 122.21(j) for municipal applicants.
Recommended	<ul style="list-style-type: none"> Where a permit applicant requests a waiver from submitting quantitative data, EGLE should document its decisions on whether or not the waiver request is granted. The <i>Application Completeness Checklist</i> should show both the identification and resolution of issues as well as the date when EGLE deems the application complete.

B. Development of Effluent Limitations

1. Technology-based Effluent Limitations

CWA Section 301(b) and the NPDES regulations at 40 CFR 125.3(a) require that permitting authorities develop TBELs, which represent the minimum level of control that must be imposed in a permit for a particular discharger category. NPDES permits must then include applicable TBELs and standards (40 CFR 122.44(a)(1)). TBELs are developed independently of considering the potential impacts of a discharge on the receiving water, which are addressed through WQBELs as necessary.

TBELs for POTWs

Background and Process

POTWs must meet secondary or equivalent to secondary treatment standards at 40 CFR Part 133. The standards consist of BOD₅ or carbonaceous BOD₅ (CBOD₅), TSS, pH, and minimum 85 percent removal of BOD₅, or CBOD₅, and TSS unless certain special conditions in 40 CFR 133.103 and 133.105 apply to minimum percent removal. Municipal permits must contain numeric limitations for all these parameters (or authorized alternatives). As shown below, all eight

municipal permits reviewed for the PQR include requirements at least as stringent as secondary treatment standards. The permit record appropriately supported the basis of the requirements.

- CBOD₅ limits.
Four permits (MI0022730, MI0057813, MI0025577, and MI0021091) have CBOD₅ 30-day average limits equal to the secondary treatment standard at 40 CFR 133.102(a). Four (MI0022853, MI0024392, MI0042978, and MI0020494) have CBOD₅ limits more stringent than 40 CFR 133.102(a), based on advance wastewater treatment (AWT) or a WQBEL.
- TSS and pH limits.
All eight permits include year-round TSS and pH limits based on secondary treatment standards at 40 CFR 133.102(b) and (c). One (MI0022583) includes a more stringent (20 mg/L) TSS limit due to AWT.

Program Strengths

EGLE’s guidance to permit writers helps ensure POTW permits consistently contain effluent limitations that are at least as stringent as secondary treatment standards at 40 CFR 133.102 and require influent sampling and analysis when needed to monitor percent removal.

Areas for Improvement

The review team did not identify any areas for improvement in this core area.

Action Items

Essential	• The PQR did not identify any essential action items for this section.
Recommended	• The PQR did not identify any recommended action items for this section.

TBELs for Non-POTW Dischargers

Background and Process

Permits issued to non-POTWs must ensure compliance with a level of treatment performance equivalent to best practicable control technology currently available (BPT), best available technology economically achievable (BAT) or best conventional pollutant control technology (BCT) for existing sources, and consistent with new source performance standards (NSPS) for new sources. Where federal effluent limitations guidelines (ELGs) have been developed for a category of dischargers, TBELs must be based on the application of those guidelines. If ELGs are not available, a permit must include requirements at least as stringent as BAT/BCT developed

on a case-by-case using best professional judgement (BPJ) in accordance with the criteria outlined at 40 CFR 125.3(d).

EGLE reported that permit writers use guidance in EPA's *Permit Writers' Manual* and other references when establishing TBELs. EGLE permit writers calculate TBELs through an evaluation of federal ELGs and determine limits based on BPJ on a case-by-case basis when national guidelines and standards do not exist. The PQR found that non-municipal permits appropriately expressed TBELs in both forms (daily maximum and monthly average) as required by 40 CFR 122.45(d)(2).

TBELs based on ELGs. All four of the non-municipal permits (MI0038172, MI0058853, MI0003158, and MI0058892) are subject to one or more federal ELG. Permit documentation indicates that the technology standards for these permittees are all concentration-based. A review of the permits and supporting documentation indicate that all permits have appropriate TBELs.

TBELs based on BPJ. The basis for decision memos for two non-municipal permits (MI0038172 and MI0003158) identify BPJ limits. As mentioned below in Section III.B.3 *Effluent Limits and Documentation*, due to lack of documentation the PQR could not assess whether the BPJ limits represent the minimum level of control that must be imposed in the permit. See Section III.B.3 for more information on documentation of development of effluent limitations. Details on these two BPJ permits are described below.

- MI0038172 – Monitoring point 001A includes a monthly average thermal discharge limit of 7,000 million British Thermal Units per hour (mBTU/hr) at monitoring point 001A. The PQR found no documentation explaining how the 7,000 mBTU/hr monthly limit was developed.
- MI0003158 – The permittee is authorized to discharge 0.7 MGD of treated groundwater through monitoring point 002B, which flows to a drainage ditch that leads to outfall 002. Outfall 002 is authorized to discharge 3.0 MGD to Lake Michigan. Outfall 002B includes limits for total BETX (the calculated arithmetic sum of benzene, ethylbenzene, toluene, and xylene), benzene, and naphthalene. While not stated in permit documentation, the PQR found that these limits are carried over from a previous permit. Additional comments about documentation when limits are carried over from a previous permit is provided in Section B.3 *Final Effluent Limitations and Documentation*.

Program Strengths

The establishment of TBELs appears consistent and meets regulatory requirements regarding units and form. Treatment Technology Based Effluent Limitations (TTBEL) memos document whether limits are based on effluent guidelines or BPJ.

Areas for Improvement

The review team did not identify any areas for improvement in this core area.

*Action Items***Essential**

- The PQR did not identify any essential action items for this section.

Recommended

- The PQR did not identify any recommended action items for this section.

2. Reasonable Potential and Water Quality-Based Effluent Limitations*Background*

NPDES regulations at 40 CFR 122.44(d)(1) require permits to include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state WQS, including WQS based on numeric or narrative water quality criteria. To establish such WQBELs, the permitting authority must evaluate whether any pollutants or pollutant parameters are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any state WQS.

This PQR assessed the processes employed to implement these requirements. Specifically, the PQR reviewed permits, fact sheets, and other documents in the administrative record to evaluate how permit writers and water quality modelers:

- determined the appropriate WQS applicable to receiving waters,
- evaluated and characterized the effluent and receiving water including identifying pollutants of concern,
- determined critical conditions,
- incorporated information on ambient pollutant concentrations,
- assessed any dilution considerations,
- determined whether limitations were necessary for pollutants of concern and, where necessary, and
- calculated such limitations or other permit conditions.

For impaired waters, the PQR also assessed whether and how permit writers consulted and developed limitations consistent with the assumptions and requirements of applicable EPA-approved TMDLs.

Process for Assessing Reasonable Potential

Michigan Administrative Code R323.1211 (Rule 1211) establishes requirements for evaluating reasonable potential for chemical-specific WQBELs and for incorporating WQBELs where EGLE:

“determines that a toxic substance is or may be discharged into waters of the state at a level that has the reasonable potential to cause or contribute to an excursion above any water quality value. The determination shall be made by developing preliminary effluent limitations (PELs) and comparing the effluent limitations to the potential effluent quality (PEQ) of the discharge. ...Reasonable potential for the discharge of a toxic substance to cause or contribute to an excursion above any water quality value will be considered to exist if the average or maximum PEQ exceeds any of the chronic or acute PELs, respectively.”

EGLE staff utilize the EGLE WRD draft *Procedure for Developing WQBELs for NPDES Permits* (Draft-WRD-PS-003) for conducting RPA on chemical-specific parameters other than mercury. The 2021 draft lays out a comprehensive, start-to-finish description of what a Permit Section aquatic biologist and peer reviewer do to conduct and document an RPA. In addition, the draft procedure identifies useful resources and links to applicable Michigan rules, templates, forms, and policies.

The draft procedure is consistent with the Great Lakes Initiative (40 CFR Part 132) and follows EPA’s *Technical Support Document* (TSD).⁷ For example, EGLE considers all valid data points. Where there are 10 or more data points, EGLE calculates the PEQ using a statistical analysis based on a delta lognormal distribution. Where there are fewer than 10 items of data, the PEQ is calculated using maximum effluent quality and multiplier based on a coefficient of variation of 0.6. Analytical results less than the detection level are recorded as one-half the minimum detection level (MDL), unless all data are below the MDL in which case all ND are treated as zero. Parameters detected at below the maximum quantification level (QL) are recorded at the QL. Where there are issues with data such as where sample contamination is noted, data are not used but identified with the reason in the spreadsheet.

An aquatic biologist enters information about the receiving stream into the spreadsheet. Information includes use attainment status, TMDL status, low flow, and background concentrations. Michigan Administrative Code R323.1090 is used to determine if mixing zones are allowed for toxic pollutants and WET. EGLE guidance outlines recommendations for mixing zones for temperature and mass balance equations for total phosphorus. They may also use low flow conditions (e.g., a 95 percent exceedance flow). If the waterbody is ephemeral or a wetland, permit writers use zero flow.

Dischargers may petition for a mixing zone under Michigan Administrative Code R323.1082 (Rule 82). The discharger would develop a demonstration study, including a mixing study plan, which EGLE would then review to ensure it meets the requirements for an alternative mixing zone. These analyses are factored into the RPA and documented in the fact sheet.

EGLE has a separate procedures document for aquatic biologists to conduct RPA for WET. As with the chemical-specific procedures, the procedure walks the biologist through the RPA process step-by-step. It includes a step for review of water treatment additives. An aquatic biologist documents RPA findings in a “*WQBEL Toxics Memo*” and/or “*WQBEL Conventionals*

⁷ EPA (March 1991) Technical Support Document for Water Quality Based Toxics Control. EPA/505/2-90-001.

Memo.” The memo includes recommendations for each parameter analyzed and it becomes part of the permit public record.

Process for Developing WQBELs

Staff in the EGLE Permits Section work collaboratively to develop WQBELs considering the *WQBEL Toxics Memo*, *WQBEL Conventionals Memo*, and *Permit Review Biologist Recommendations Memo*. In addition, permit writers follow relevant WRD guidance documents to set limits as appropriate for total dissolved solids (TDS), chloride, sulfate, temperature, and phosphorus.

Program Strengths

Reasonable Potential

EGLE has developed clearly written procedures and tools for permitting staff to employ during permit development. They include step-by-step procedures to identify pollutants of concern and conduct RPA. RPA is determined with the aid of a customized spreadsheet pre-programmed to calculate PEQ and PEL values using EPA-accepted procedures. The outputs clarify data sources, calculation approaches, and potential data outliers. EGLE has developed detailed guidelines for establishing WQBELs for non-conventional parameters such as phosphorus, TDS, chloride, sulfate, and temperature. Clear and consistent procedures ensure transparency in EGLE’s data analyses.

WQBEL Development

EGLE has thorough procedures for incorporating WQBELs into permits. The procedures include information and analysis provided by EGLE aquatic biologists.

Areas for Improvement

The review team did not identify any areas for improvement in this core area.

Action Items

Essential

- The PQR did not identify any essential action items for this section.

Recommended

- The PQR did not identify any recommended action items for this section.

3. Documentation of Effluent Limitations Development

Background and Process

Permits must include all applicable statutory and regulatory requirements, including technology and water quality-based requirements. Final effluent limitations must ensure all applicable CWA standards are met. In addition, for reissued permits, if any of the limitations are less stringent than limitations on the same pollutant in the previous NPDES permit, the permit writer must conduct an anti-backsliding analysis, and if necessary, revise the limitations accordingly. In addition, for new or increased discharges, the permitting authority should conduct an antidegradation review to ensure the permit is written to maintain existing high quality of surface waters, or if appropriate, allow for some degradation. The WQS regulations at 40 CFR 131.12 outline the common elements that need to be embodied in a state antidegradation policy.

In addition, permit records for POTWs and industrial facilities should contain documentation in the permit fact sheet (40 CFR 124.56) of the development of all effluent limitations. The record should include assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop TBELs. The procedures implemented for determining the need for WQBELs as well as the procedures explaining the basis for establishing, or for not establishing, WQBELs should be clear and straight forward. The permit writer should adequately document changes from the previous permit, ensure draft and final limitations match (unless the basis for a change is documented), and include all supporting documentation in the permit file. The permit writer should sufficiently document determinations regarding anti-backsliding and antidegradation requirements.

Michigan Administrative Code R323.1098 (Rule 98) requires that any person applying for an NPDES permit to discharge new or increased pollutants to a high-quality water or Lake Superior outstanding international resource water must provide an antidegradation demonstration or show how the discharge is exempted from antidegradation. The contents of an antidegradation demonstration are listed in Rule 98, which include why the proposed discharge is necessary, why there are no alternatives to the new or increased discharge, and the social or economic benefits of allowing the new or increased discharge.

Permitting staff use EGLE's standard procedures and document templates when developing technical memos that summarize permit decisions, analyses conducted, and decisions made regarding discharge limitations. Examples of EGLE's technical documentation for effluent limitation development include the TBEL recommendation memo, WQBEL memo, basis for decision memo, and fact sheet.

As discussed above in Section III.B.1, the basis for decision memos of two permits (MI0038172 and MI0003158) identify BPJ limits, but calculations to develop the BPJ limits were not found in permit documentation. Based on the review, it appears that all BPJ limits were carried over unchanged from the previous permits, but there was no reference to prior permit documentation or prior record supporting development of these specific BPJ requirements.

As discussed in Section IV.A., *Permit Controls for Nutrients in Non-TMDL Waters*, two municipal permits (MI0022730 and MI0022853) include total phosphorus limits of 1.0 mg/L. The limits are carried over from the previous permits and according to the basis for decision memos they are based on water quality. Both facilities discharge to waters impaired for nutrients, but without nutrient TMDLs. The *WQBEL-Toxics Recommendations Fact/Decision Sheet* for MI0022730 states that “no nutrient issues have been observed [or documented] in the receiving water as a result of this discharge”. For MI0022853, a memo from the Permits Section recommends no change in the total phosphorus limit with no supporting information. 40 CFR 122.44(d) provides that a WQBEL is needed when a discharge will cause, have reasonable potential to cause, or contributes to an in-stream excursion above any state water quality standard, including narrative criteria. In summary, documentation for these two permits does not address how nutrient impairment of the receiving waters was factored into development of the total phosphorus limits, nor does it show how the limits were derived from and comply with WQS (40 CFR 122.44(d)(1)(vii)(A)).

Review of the four non-municipal permits (MI0058892, MI0038172, MI0003158, and MI0058853) found that some WQBELs were expressed as either maximum daily or monthly average, not both. According to 40 CFR 122.45(d)(1) all permit effluent limitations, standards, and prohibitions of non-municipal continuous discharges must be expressed as both unless impracticable. Permit documents reviewed for the PQR did not address whether imposing limits as maximum daily and monthly average would be impracticable. Examples of these limits and the specific outfall are listed in Table 3, below.

Table 3. Limitations Expressed as Maximum Daily Only or Monthly Average Only

Permittee (NPDES Number)	Monitoring Station	Expressed Only as Maximum Daily	Expressed Only as Monthly Average
DTE Energy Fermi 3 (MI0058892)	001A	Total residual oxidant (TRO) Total residual chlorine (TRC)	Thermal
DTE-Belle River (MI00038172)	001A	TRO	--
	001D	TRO	Thermal
	002A	Total Ag	--
St. Mary’s Cement (MI0003158)	001A	TRC	Total Hg
	002A	TRC	Total Hg
	002B	BETX, Benzene, Napthalene	--
	005A	Dissolved sulfide	--
Landfill Management Company (MI0058853)	001A	BOD ₅	--
	002A	BOD ₅	--

The PQR did not review the basis of antidegradation demonstrations, including information in the state’s *Antidegradation Demonstration Checklist* for specific permits. Instead, the PQR focused on how the antidegradation demonstration was documented.

Three of the permits reviewed allowed an increase in pollutant loading:

- MI0042978 (Lakewood). Several documents in the permit record refer to antidegradation, but an antidegradation demonstration was not provided.
 - Permit application (11/13/2018) – The discharge has an increase in loading. The applicant checked “No” to the question, “is the increased loading of pollutants exempt from Antidegradation Demonstration.” In the space “Antidegradation Requirement Attachment,” the applicant responded, “none provided.”
 - Application review checklist (3/29/2017) – States, “The permittee is requesting an increased use in the design flow due to upgrades ... The permit writer should request [documentation describing a Michigan Administrative Code Rule 323.1098 - Antidegradation Demonstration] during the permit development.” Documents reviewed did not include or refer to completed antidegradation documentation.
 - Basis for decision memo (10/8/2018) – States that the facility upgraded from a seasonal lagoon discharge to a continuous discharge as of July 2015. Mass limits for CBOD₅, TSS, and ammonia nitrogen increased in proportion to the increase in design average flow; concentration limits did not change. In addition, percent removal was lowered.
 - Fact sheet (2019) – The state proposes that the applicant's Antidegradation Demonstration, based on information required by Subrule (4) of R323.1098, shows that lowering of water quality is necessary to support the identified important social and economic development in the area.
- MI0020494 (Plainwell) has one less stringent limit: the 7-day average mass limit for CBOD₅ applicable from October through April was changed from 330 lb/day to 430 lb/day. The public notice (dated 3/23/2020) states that, “Loading limits for CBOD₅ have been revised.” A review of the permit shows that the CBOD₅ loading limit for October through April was changed from 330 lb/day in the previous permit to the new limit of 430 lb/day. Permit documentation does not provide a basis for the revised limit. However, the revision appears to appropriately correct a calculation error in the previous permit. The application review checklist (dated 5/8/2020) states that antidegradation demonstration is not needed.
- MI0003158 (St. Mary’s Cement) permit documentation refers to antidegradation without any specifics about the outfall or parameters of antidegradation concern.
 - Application Complete Checklist (dated 4/4/2014) – Answers “Y” to the question, “Has a Rule 1098 Demonstration or exemption statement been provided.” Documents provided for the PQR did not include this information.
 - Fact sheet (2019) – States that the “applicant’s Antidegradation Demonstration, based on information required by Subrule (4) of R323.1098, shows that lowering of water quality is necessary to “support the identified important social and economic development in the area.” Documentation reviewed did not cite the supporting antidegradation demonstration or identify what lowering of water quality is expected.

- The PQR noted one increase related to this permit. The current permit authorizes a maximum of 6.0 MGD through Outfall 005 whereas the previous permit authorized a maximum of 0.488 MGD. Outfall 005 discharges from a settling pond that receives quarry dewatering water and an unspecified amount of stormwater runoff prior to entering an unnamed intermittent creek. According to the *WQBEL – toxics memo*, the creek has a 90Q10 low flow of 0.2 cubic feet per second (equivalent of 0.13 MGD). Permit documentation does not explain what effect the significant increase in flow authorized through outfall 005 will have on the creek. Outfall 005 was not assigned loading limits. The current permit adds a new concentration limit (expressed as a daily limit of <20 µg/L) for dissolved sulfide, and adds monitor-only requirements for hydrogen sulfide, conductivity, TDS, and hardness. The new dissolved sulfide limit is based on new water quality monitoring information and is not considered an increased loading.

Program Strengths

EGLE has developed well-written guidance to support permit writers. EGLE's technical memos that accompany the fact sheet and permit provide targeted information related to EGLE's decisions during development of permit limitations and monitoring requirements. EGLE consistently and effectively coordinates with other program areas, often with the help of MiWaters. EGLE has a good internal QA/QC process to review permits under development. The basis for decision memo includes a useful table that identifies the basis of each effluent limitation in the permit. The basis for decision memos are also useful that they are formatted to provide a concise summary of the basis of permit limits and to identify whether a requirement is a "new requirement - not in previous version."

Areas for Improvement

Permit documentation should identify the applicable subsection of 40 CFR Part 133 to support percent removal requirements that differ from 85 percent. This citation was missing from the basis for decision memo for the following permits: MI0022853, MI0042897, MI0022730, MI0020495, MI0024392 and MI0021901. For example, the record should include calculations, references, or regulatory citation to support the absence of percent removal requirements in a permit with combined sewers (MI0022853).

Fact sheets for permits reviewed did not document antidegradation considerations. When a load limit is increased, the fact sheet or basis for decision memo referenced by the fact sheet should clearly state how antidegradation was considered. Where an antidegradation demonstration or antidegradation exemption is referenced, permit documentation should state what parameters and outfalls are involved and identify the date of the antidegradation demonstration.

The table in the basis for decision memos could be improved by identifying limits that were removed due to the lack of reasonable potential (RP), as was the case in the following three permits:

- MI0038172, non-municipal – The previous permit has limits for barium, selenium, cyanide, and mercury at outfall 002A, while the renewed permit does not include limits or monitoring requirements for those parameters. The change is documented in the WQBEL memo.
- MI0058853, non-municipal – The previous permit has arsenic limits at outfall 002A, while the renewed permit has monitor only requirements for arsenic at monitoring point 002A. The WQBEL memo for the renewal indicates no RP for arsenic.
- MI0022853, municipal – The previous permit has monthly average cyanide limits for outfall 001A, and the renewed permit has monitor only requirements for cyanide at monitoring point 001A. The WQBEL memo for the renewal indicates no RP for cyanide.

The permit record should document that the final effluent limitations are protective of both technology and water quality standards.

For some permits, supporting documentation lacked calculations for effluent limitations or a full description of how background data are used in setting a mixing zone. The *WQBEL Toxics Memo*, *WQBEL Conventional Memo*, and *Permit Review Biologist Recommendations Memo* provide summaries of WQBELs recommended for the permit. However, EGLE should reference which documents host the calculations that formed the basis of permit requirements in the basis for decision memos, per 40 CFR 124.56(a) and 124.8(b)(4).

Some WQBELs in non-municipal permits were expressed only as either maximum daily or monthly average. Permit documentation should explain why it is impracticable to express these limits in both forms.

The review noted that two permits (MI0003158 and MI0038172) had BPJ limits carried forward from a previous permit. Where BPJ limits are carried over, the calculations or other supporting rationale for the BPJ values should be included either explicitly or by reference to the record of the prior permit decision.

Permit documentation (such as in the permit fact sheet as required under 40 CFR 124.56) should identify the basis for limits, monitoring requirements, and/or special conditions for total phosphorus and/or nitrogen parameters when the permittee discharges nutrients to nutrient-impaired waters without a TMDL for nutrients (see also Section IV.A., *Permit Controls for Nutrients in Non-TMDL Waters*).

Action Items

Essential

- Ensure that short-term (e.g., maximum daily) as well as long-term (e.g., average monthly) effluent limitations are established. If it is impracticable to establish both short-term and long-term limitations for a specific parameter, the rationale should be documented in the basis for decision memo or fact sheet, per 40 CFR 122.45(d)(1).
- See essential action item on 40 CFR 124.56 and 124.8 in Section III.F, *Administrative Record and Fact Sheet*.

Recommended

- Ensure the basis for decision memos document the principal facts and significant factual, legal, methodological and policy questions considered in preparing the draft permit.
 - For non-municipal permittees, document that the final effluent limitations are protective of both technology and water quality standards.
 - Identify all significant changes from the previous permit.
 - Ensure that the Basis for Limits column in tables contained in the basis for decision memo has an entry (e.g., WQBEL, STS, AWT) for each parameter.
- Consider improving WQBEL-related memos to support derivation of specific effluent limits, or absence of all limits.
 - Identify what background ambient data were considered in setting WQBELs.
 - Provide the rationale for including or not including nutrient limitations or monitoring conditions whenever a discharge containing nutrient parameters enters a nutrient-impaired water without a nutrient TMDL.

C. Monitoring and Reporting Requirements*Background and Process*

NPDES regulations at 40 CFR 122.41(j) require sampling and measurements taken for the purpose of monitoring to be representative of the monitored activity, and 40 CFR 122.41(l) requires reporting of monitoring results to the permitting authority. Monitoring and reporting conditions require the permittee to conduct routine or episodic self-monitoring of permitted discharges and where applicable, internal processes, and report the analytical results to the permitting authority with information necessary to evaluate discharge characteristics and compliance status.

Specifically, 40 CFR 122.44(i) requires NPDES permits to establish monitoring as necessary to demonstrate compliance with effluent limitations and, at minimum, annual reporting of monitoring for all limited parameters, including specific requirements for the types of information to be provided and the methods for the collection and analysis of such samples. In addition, 40 CFR 122.48(b) requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR 122.44(i) also require reporting of monitoring results with a frequency

dependent on the nature and effect of the discharge. 40 CFR Part 127 requires NPDES-regulated entities to submit certain data electronically, including discharge monitoring reports and various program-specific reports, as applicable.

NPDES permits should specify monitoring locations to ensure that they represent the monitored activity (see 40 CFR 122.41(j)). A fact sheet should include a description for all monitoring locations required by the permit. States may have policy or guidance documents to support determination of appropriate monitoring frequencies; documentation should include a discussion of the basis of the monitoring condition including frequencies as well as identification of the specific state policy or internal guidance referenced. Permits must also specify the sample collection method for all parameters required to be monitored in the permit.

Permit writers use EGLE guidance as a reference to determine monitoring requirements. For POTWs, EGLE has developed a matrix to guide monitoring frequencies for all municipal dischargers. This guidance typically requires that monitoring be conducted three to five times per week. For industrial dischargers, monitoring requirements are evaluated on a site-specific basis. Permit writers use a variety of reference materials developed by ELGE including *EGLE's Monitoring Frequency Trends Report*, *WRD's PFAS Permitting Strategy*, and parameter-specific monitoring requirements (e.g., temperature, total phosphorus, chloride, sulfate, sulfide, and total mercury). The permit writer may consult with an aquatic biologist to determine monitoring requirements for toxic pollutants. The permit writer will also consider requests from the discharger to reduce monitoring requirements.

Permits require the use of 40 CFR Part 136 analytical test methods and state that test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations. Where analytes must be monitored at low levels, permits include a table showing quantification levels for the selected parameters.

As discussed in Section III.B.1, six of the eight municipal permits reviewed require a determination of percent removal which in turn would necessitate influent monitoring. These permits do not explicitly require influent monitoring, do not identify the influent monitoring location, and do not label the monitoring station.⁸ For quality control purposes, permits should identify the influent monitoring point by number and location.

As summarized in the following table, five of the eight municipal permits allow final effluent monitoring to occur either before or after disinfection depending on the parameter. Permit documentation provided no explanation or justification for allowing wastestreams to be monitored at two locations described by the same monitoring station, and it does not explain how monitoring prior to disinfection was considered representative of the final outfall (see 40 CFR 122.41(j)).

⁸ EGLE NPDES permits identify monitoring points by the outfall number plus a letter (e.g., Monitoring Station 001A applies to flows through outfall 001).

Table 4. Effluent Sampling Location by Parameter

Municipal Permit (Disinfection type)	Monitoring Station	Sample Before Disinfection ¹	Sample After Disinfection
MI0021091 – Tawas Utility (chlorination)	001A	Dissolved oxygen	CBOD ₅ , TSS, ammonia nitrogen, total phosphorus, fecal coliform, total residual chlorine, total mercury, PFOS, PFOA, pH
MI004978 – Lakewood (ultraviolet)	001A	CBOD ₅ , TSS, ammonia nitrogen, total phosphorus	Fecal coliform, pH, dissolved oxygen
MI0020494 - Plainwell (chlorination)	001A	CBOD ₅ , TSS, ammonia nitrogen, total phosphorus	Fecal coliform, total residual chlorine, total mercury, pH, dissolved oxygen.
MI0057813 – Rogers (ultraviolet)	001A	CBOD ₅ , TSS, ammonia nitrogen, total phosphorus	Fecal coliform, pH, dissolved oxygen, total mercury, available cyanide
MI0022853 - East Lansing (ultraviolet)	003A	<u>Sample may be taken before or after disinfection:</u> CBOD ₅ , TSS, ammonia nitrogen, total phosphorus, available cyanide, total selenium, total mercury, pH, dissolved oxygen	Fecal coliform.
MI0022730 – Coopersville (chlorination/dechlorination)	001A	N/A	Fecal coliform, CBOD ₅ , TSS, total phosphorus, total residual chlorine, total mercury, pH, dissolved oxygen
MI0025577 – Saginaw (chlorination)	001A	N/A	CBOD ₅ , TSS, ammonia nitrogen, Fecal coliform, total residual chlorine, total PCBs, WET, total mercury, pH, dissolved oxygen
MI0024392 – Wyoming (prior to 3/21/2022 chlorination/dechlorination; after 3/21/2022 ultraviolet)	001A	N/A	CBOD, TSS, ammonia nitrogen, total phosphorus, Fecal coliform, total residual chlorine (through 3/21/2022), PFOS, PFOA, total mercury, pH, dissolved oxygen

¹ Except for East Lansing where samples may be taken either before or after disinfection.

Except for the East Lansing permit, the limitations and monitoring section in Part I.A.1.b. of the permits identified in the above table state, “The Department may approve alternate sampling locations which are demonstrated by the permittee to be representative of the effluent.” A change in monitoring location should only be allowed for cause, including the causes specified in 40 CFR 122.62, such as material and substantial alterations or additions to the permitted facility and new information, but only if the information was not available at the time of permit issuance; such a change must be accomplished via permit modification.

The description of monitoring points in one non-municipal permit (MI0003158) was unclear as shown in the following table.

Table 5. Non-municipal Permit Monitoring Station Description for MI0003158

Monitoring Station	Permit Description	Comment
002A and 002B	Flow “through a drainage ditch and Outfall 002. Outfall 002 discharges to Lake Michigan...;”.	The single description provides no distinction between the locations of Monitoring Station 002A and 002B.
003A	Flow “through a drainage ditch Outfall 003. Outfall 003 discharges to Lake Michigan...”	It is not clear if the outfall 003 is the drainage ditch or the terminus of the ditch and implies sampling occurs at some point along the “drainage ditch” or at the end outfall.
005A	Flow “through a settling pond and Outfall 005. Outfall 005 discharges to an unnamed intermittent stream...”	The description implies that Monitoring Station 005A is at a point downstream of a settling pond and outfall 005.

Program Strengths

EGLE establishes appropriate monitoring requirements in NPDES permits for municipal and non-municipal facilities. EGLE adequately considers the type of treatment process and effluent variability in establishing monitoring requirements and requires that test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations. Permits include a table showing the test quantification level for regulated parameters as appropriate.

Permits include a general statement that flow through the sampling station must be representative of the discharge being sampled. Monitoring frequencies, units and sample types are clear. EGLE has developed several references for determining appropriate monitoring requirements.

Areas for Improvement

The location of monitoring stations could be more clearly stated in permits to improve enforceability, provide clarity to the permittee so that monitoring equipment is installed properly, and ensure monitoring is representative of the monitored activity (see 40 CFR 122.48(a) and (b)). Any permit requiring percent removal should identify the raw influent monitoring station.

When permits allow the option for effluent sampling to occur before the final treatment unit, permit documentation should explain the basis of that decision and how monitoring is representative of the effluent. Where municipal permits state the Department may “approve alternate sampling locations which are demonstrated by the permittee to be representative of the effluent,” it should clarify that a permit modification would be needed.

*Action Items***Essential**

- The PQR did not identify any essential action items for this section.

Recommended

- Permits should provide complete and accurate descriptions of the location of monitoring stations, and for municipal permits identify the influent monitoring station for influent sampling required to determine percent removal.
- Permit conditions referring to Department approval of alternate sampling locations should state that a change in sampling location is only authorized by permit modification.

D. Standard and Special Conditions*Background and Process*

Federal regulations at 40 CFR 122.41 require that all NPDES permits, including NPDES general permits, contain certain “standard” permit conditions. Further, regulations at 40 CFR 122.42 require that NPDES permits for certain categories of dischargers contain additional standard conditions. Permitting authorities must include these conditions in NPDES permits and may not alter or omit any standard condition unless such alteration or omission results in a requirement more stringent than those in the federal regulations.

Permits may also contain additional requirements that are unique to a particular discharger. These case-specific requirements are generally referred to as “special conditions.” Special conditions might include requirements such as: additional monitoring or special studies such as a mercury minimization plan; best management practices (see 40 CFR 122.44(k)); or permit compliance schedules (see 40 CFR 122.47). Where a permit contains special conditions, such conditions must be consistent with applicable regulations.

EGLE uses a template in MiWaters to auto-populate permits with standard conditions. EGLE staff noted that the standard conditions were updated in 2013 in collaboration with EPA Region 5. EGLE does not have a specific process or schedule for updating the standard conditions, as the need for these edits is relatively rare.

MiWaters provides a menu of template language to include as special conditions. Depending on the permittee, special conditions might involve special limits and monitoring requirements, operational plans, mercury pollutant minimization plan (PMP), untreated or partially treated sewage discharge reporting and testing requirements, cooling water intake requirements, monitoring report submittals, stormwater pollution prevention plans, operation and maintenance programs, request for approval to use water treatment additives, facility quantification levels and analytical methods for selected parameters.

Special conditions in municipal permits include asset management and, where applicable, requirements for the industrial pretreatment program (IPP) and residuals management. For combined sewer overflow (CSO) communities (e.g., MI0022853) a special condition calls attention to the long-term control plan (LTCP).

Of the eight municipal permits reviewed, six include special conditions requiring implementation of an IPP. Two different special conditions are used in these permits depending on whether the POTW has a Federal industrial pretreatment program (FIPP) or Michigan industrial pretreatment program (MIPP). FIPP applies to MI0025577, and MI0024392; MIPP applies to MI0022730, MI0021091, MI0020494, and MI0042987.

All six IPP special conditions require the permittee to implement the pretreatment program initially approved and any modifications up to the issuance date of this permit. Should a pretreatment program modification be approved by the state after the permit is issued, the state would need to issue a permit modification to address the change, ensuring that pretreatment program modifications become an enforceable part of the permit (see 40 CFR 122.62(g)). The permits with FIPP conditions state, "Approval of substantial [pretreatment] program modifications after the issuance of this permit shall be incorporated into this permit by minor modification in accordance with 40 CFR 122.63." All six permits require the submittal of an annual pretreatment report as required by 40 CFR 403.12(i) or R323.2301(8).

The PQR found that standard conditions related to records retention for municipal permits (in Part I.D.1. and Part II.B.5.) and non-municipal permits (in Part II.B.5.) lack some specific language in the conditions or reference to the regulation as required by 40 CFR 122.41(j)(2). The following requirements were missing from the conditions in the permits:

- The permittee must retain "records of all data used to complete the application for the permit," and
- A description of the start time for the three-year records retention period as "from the date of the sample, measurement, report, or application."

Regarding 40 CFR 122.42, the PQR found that non-municipal permits do not include sufficient requirements to notify EGLE as soon as the permittee knows or has reason to believe that any activity has occurred or will occur which would result in changes described in 40 CFR 122.42(a)(1)-(2).

The PQR found that municipal permits for POTWs without a FIPP, do not include necessary requirements to notify EGLE as per 40 CFR 122.42(b)(1)-(3). This includes POTWs required to implement a MIPP, and POTWs that do not need/have a pretreatment program.

POTWs with FIPPs satisfy 40 CFR 122.42(b)(1)-(3) through pretreatment program special conditions that require permittees to review and update their local limits when: 1) new pollutants are introduced, 2) new pollutants that were previously unevaluated are identified, 3) new water quality or biosolids standards are established or additional information becomes available about the nature of pollutants, such as removal rates and accumulation in biosolids, or 4) substantial increases of pollutants are proposed as required in the notification of new or increased uses in accordance with the provision of 40 CFR 122.42.

One municipal permit (MI0021091) served by a sanitary sewer system, includes a special condition titled, "Untreated or Partially Treated Sewage Discharge Reporting and Testing

Requirements” which requires the permittee to notify EGLE, local health departments, and newspapers in the affected area if untreated or partially treated sewage is directly or indirectly discharged from the sewer system onto land or into waters of the state. It is EGLE’s stated position that permits do not need to include language expressly prohibiting the discharge of untreated or partially treated sewage since the permit does not authorize those discharges. EPA has accepted this position.

Permit number MI0058892 (DECO-Fermi 3 Power Pit) was issued to a power generating facility that has not been built and has not commenced discharging. The expected date to commence discharging is not indicated in the permit application or fact sheet and as of this writing is still undetermined. It is recommended that permits issued to non-POTWs that have not commenced discharging, include monitoring and reporting conditions sufficient to ensure EGLE has timely access to actual effluent data upon which to confirm or rebut estimates provided in permit applications. For example, MI0058892 should:

- Include requirements to submit the 316(b) study and short-term storm water characterization study required by the permit, *no sooner than two years prior to start of operations*. This would supplement the current language requiring submittal “at least one year prior to the start of operations.” Requiring submission of these studies closer to the operation start date would help ensure that the studies represent actual expected operating conditions.
- Require the permittee to provide EGLE with annual certification of the expected date of the commencement of discharge. This certification would eliminate the burden on EGLE to keep track of the permittee’s status as an inactive or active discharger.
- Include a reopener to adjust limits as needed to protect water quality.

Program Strengths

Since templates are used, standard and special conditions are generally clearly written and consistent for the permit type. Special conditions in permits to CSO communities refer to the applicable LTCP. Special conditions for POTWs with FIPPs include appropriate pretreatment program requirements. For non-municipal permits, special conditions are attentive to water treatment additives. EGLE has been a leader among Region 5 states with asset management special conditions in major municipal permits. Where permits require monitoring of toxic parameters, special conditions provide a helpful table referring to the analytical method and method detection level. All the non-MS4 municipal permits reviewed include a special condition regarding pretreatment.

Areas for Improvement

Municipal and non-municipal permits lacked some language required by 40 CFR 122.41(j)(2) related to records retention. Non-municipal permits lacked requirements to notify EGLE as soon as the permittee knows or has reason to believe that any activity has occurred or will occur which would result in changes as described in 40 CFR 122.42(a)(1)-(2). Municipal permits for facilities without a FIPP lacked notification requirements for new and increased discharges specified by 40 CFR 122.42(b)(1)-(3).

Action Items

Essential

- Ensure that permits fully specify records retention requirements (40 CFR 122.41(j)(2)).
 - Specify that data which must be retained includes data used by the permittee to complete the permit application.
 - Specify that the three-year records retention period starts on the date of the sample, measurement, report, or application.
- Ensure that permits contain all appropriate additional standard conditions for notification required by 40 CFR 122.42(a)(1)-(2) (applicable to non-municipal permits) and 40 CFR 122.42(b)(1)-(3) (applicable to municipal permits) for POTWs without a FIPP.

Recommended

- NPDES permits for planned facilities that have not yet been built or commenced discharging should include monitoring and reporting conditions to ensure that once discharging begins, EGLE has timely access to actual data upon which to confirm or rebut estimates provided in permit application and act if necessary to modify the permit.

E. Administrative Process*Background and Process*

The administrative process includes documenting the basis of all permit decisions (40 CFR 124.5 and 124.6); coordinating EPA and state review of the permit (40 CFR 123.44); providing public notice (40 CFR 124.10); conducting hearings if appropriate (40 CFR 124.11 and 124.12); responding to public comments (40 CFR 124.17); and modifying a permit (if necessary) after issuance (40 CFR 124.5). EPA discussed each element of the administrative process with Michigan, and reviewed materials from the administrative process as they related to the core permit review.

Michigan Administrative Code Part 21 (Rule 21) outlines EGLE’s administrative procedures for wastewater discharge permits. The rule addresses NPDES permit applications and forms (R323.2114), tentative determinations on draft permits (R323.2116), public participation, fact sheets, and hearing procedures (R323.2117 through R323.2131). In addition, Rule 21 refers to appeal procedures, and procedures specific to storm water NPDES permits, general NPDES permits, and CAFOs.

EGLE staff use MiWaters to access permit development software and templates of supporting documents such as the fact sheet, various correspondence, and basis for decision memo. Staff use the MiWaters “My Tasks” feature to track progress with their permit development assignments. Workflow begins when applications arrive. EGLE shares the draft permit with the applicant, typically allowing two to three weeks for feedback prior to EGLE initiating public notice. Workflow includes peer review of the draft permit and supporting document, followed by unit supervisor pre-public notice review.

MiWaters is programmed to generate notification emails at the start of the public notice period. Notifications are sent to the applicant and those who have previously sent EGLE a written request to be notified about public notice actions for specific permit(s) or permits within specific geographical drainage area(s). EGLE advises the applicant to post a paper copy of the public notice during the public notice period at the discharging facility, at nearby public building, and local newspaper, and advises the applicant to confirm by email what noticing was done. MiWaters also makes public notice information available to the public through the MiWaters public notice page.⁹ As provided in Rule 21, the public notice period lasts at least 30 days; however, EGLE has authority to provide a longer public notice period if deemed necessary.

Written comments submitted in response to a public notice are either entered directly into MiWaters by the commenter or when comments arrive by email or paper mail, they are uploaded to MiWaters by EGLE. If the number of comments is small, EGLE will provide separate responses directly to the commenters by email. For a larger number of comments, EGLE prepares a response-to-comments document that includes a summary of the comments and responses. If EGLE contemplates a change to the draft permit prior to issuance, the permittee/applicant is advised and afforded an opportunity to review the change. The PQR found response to comment emails but did not see any record indicating if comments were not received.

EGLE follows the EPA-state memorandum of agreement for sharing permit actions with EPA for real time review.

Some permit proceedings also include a public hearing concerning the draft permit. Typically, permits that receive many comments, are controversial, or highly visible will likely be subject to a public hearing. Hearings generally consist of two parts: an informational presentation where EGLE presents information about the permit, and a public comment session. Since 2020 with an overall shift to remote work, EGLE has conducted public hearings online or by phone and has seen a positive trend in increased attendance. The public hearing notice is searchable through the MiWaters the public notice search site.

EGLE reported that final permit decisions are rarely appealed; however, an ongoing appeal of a CAFO permit that was challenged in 2019 is still in progress. Once an appeal is concluded, any revisions to the permit and record would be included in MiWaters. The opportunity to appeal is addressed in EGLE NPDES permits in a standard paragraph under the heading, "Contested Case Information."

The PQR reviewed six public notice documents (MI0057813, MI0020494, MI0022853, MI0024392, MI0025577, and MI0038172) and found that the notices include useful information about changes to the draft permit compared to the previous (expiring) permit. Notices provided most of the information required by 40 CFR 124.10; however, public notices reviewed did not

⁹ <https://miwaters.deq.state.mi.us/ncore/external/publicnotice/search>.

describe sludge use and disposal practices as applicable to POTWs (see 40 CFR 124.10(d)(1)(vii)).

Program Strengths

MiWaters provides a comprehensive and useable platform to administer the NPDES program, for example:

- EGLE staff use MiWaters to develop and monitor permit development. MiWaters templates and permit-building software help staff develop documents with consistent formatting while allowing flexibility to add information or topics where appropriate. The MiWaters workflow feature enables staff and supervisors to monitor and report on assignment progress.
- Registered MiWaters users including NPDES permit holders and others outside of EGLE can use the system to find forms, manage permit fees, submit applications or COCs, submit reports, view issued permits, see notifications, and more.
- The public without a MiWaters account can search for NPDES permits and public records geographically and by search term. MiWaters provides the public easy access to a list of all permits currently on public notice.

Permits provide a brief paragraph “Contested Case Information” on rights of aggrieved parties to appeal or challenge permit conditions up to 60 days from permit issuance.

Areas for Improvement

EGLE should ensure that all public notices for municipal permits identify the sludge use and disposal practice consistent with 40 CFR 124.10(d)(1)(vii).

The administrative record should include a statement indicating whether substantive comments were or were not received during the public comment period. Response-to-comment emails were provided for some permits; however, where there was not a response to comment memo it was unclear if the record was missing response to comments or if no comments were received.

Action Items

Essential	• Ensure that the public notice includes all required elements in 40 CFR 124.10(d)(1)(vii), regarding sludge use and disposal practice.
Recommended	• Consider including in the permit record a note of "comments received" or "no comments received" during the public notice period.

F. Administrative Record and Fact Sheet

Background and Process

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR 124.9 identifies the required content of the administrative record for a draft permit and 40 CFR 124.18 identifies the requirements for a final permit. Authorized state programs should, but are not required to, have equivalent documentation. The record should contain the necessary documentation to justify the draft and final permit decisions. At a minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or statement of basis;¹⁰ all items cited in the statement of basis or fact sheet including calculations used to derive the permit limitations, public notice, and final response to comments received during the public comment period. The record should include other information such as meeting reports and correspondence between the applicant and regulatory personnel, if the information formed part of the basis for the permit decision.

Regulations at 40 CFR 124.8(b) and 124.56 require that fact sheets briefly describe information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limitations and conditions, the reasons for application of certain specific limitations, rationales for variances or alternatives, contact information, and procedures for issuing the final permit.

Rule 21 requires that EGLE develops fact sheets for all facilities with a discharge volume above 0.5 MGD. In addition, the rule states that EGLE may develop a fact sheet for discharges less than 0.5 MGD, if EGLE “...deems the discharge is of significant importance to warrant additional information for public comment.” EGLE prepares basis for decision memos for all individual NPDES permits. Fact sheets incorporate the basis for decision memo by reference.

Michigan began transitioning to electronic files and recordkeeping in 2008. EGLE provides access to the permit administrative record electronically in MiWaters, which allows staff and the public to have access to permit records including the draft and final permits, fact sheets, and permit applications. In some cases, paper files are retained for large-format application documents (e.g., engineering drawings or reports) or for specific permit development documentation for complex industrial permits. The file review and discussions with EGLE staff demonstrated that EGLE NPDES administrative records are well organized.

The PQR found that fact sheets included the name and telephone number of the EGLE contact person and provided a description of procedures for reaching a final decision when public comments are received, or a hearing is requested.

¹⁰ Per 40 CFR 124.8(a), every EPA and state-issued permit must be accompanied by a fact sheet if the permit: Incorporates a variance or requires an explanation under 124.56(b); is an NPDES general permit; is subject to widespread public interest; is a Class I sludge management facility; or includes a sewage sludge land application plan.

Fact sheets provided an image with labels from a topographic map showing the discharge location as specified by 40 CFR 124.8(b)(8) and 124.56(c). However, fact sheets would be strengthened by also including a general schematic or sketch of the regulated facility.

Fact sheets are kept brief, at about 4 to 5 pages, by including references to the basis for decision memo and draft permit. The basis for decision memo identifies whether parameters are based on secondary treatment standards, permit writer's judgement, or if they are technology- or water quality-based. However, basis for decision memos often do not identify the regulatory basis associated with the limits. Instead, the regulatory basis may be identified in another document such as a WQBEL memo that is not referenced in either the fact sheet or basis for decision memo. As a result, fact sheets fall short of addressing the information required by 40 CFR 124.8(b) and 124.56(b), including an explanation about why limitations on toxic pollutants and limits developed on a case-by-case basis are appropriate.

Unique circumstances also apply to municipal permits with percent removal requirements based on special conditions at 40 CFR 133.103. The fact sheet should address procedures used in reaching the percent removal limits for these facilities (see 40 CFR 124.8(b)(3)). Fact sheets would be strengthened with information on whether anti-backsliding and antidegradation evaluation was completed for any limit that is removed or relaxed, or where there is authorization to use a previously unused or proposed outfall.

Fact sheets for some municipal permits with pretreatment programs include as "Additional Information" a reference to applicable Part 23 rules for state IPPs. Documentation referenced in the fact sheet such as the basis for decision memo could identify the reason why an IPP is appropriate, such as by identifying the number of SIUs and NSCIUs.

Program Strengths

MiWaters provides a searchable repository of NPDES permitting records. EGLE applies a practical file naming convention (e.g., a suffix for the permit and modification) that facilitates locating permit versions in a document set. EGLE uses permit-building software and provides templates that help build consistency in formatting and level of detail in permits, fact sheets, TTBEL memos, basis for decision memos, and other supporting documents. EGLE's permits are well organized and include a helpful glossary of terms.

Areas for Improvement

Fact sheets appropriately provide a brief description of the treatment system as required by 40 CFR 124.8(b)(1). For additional clarity, consideration should be given to also including a flow schematic to represent the treatment facility and numbered discharges or monitoring points.

According to 40 CFR 124.8(b)(2), fact sheets shall include a brief description of the type of wastes, fluids or pollutants being treated. EGLE's fact sheets identify POTW wastewater simply as "municipal wastewater." This generic term could include sewage, industrial wastes, and/or stormwater. If a facility is covered by an IPP the fact sheet should, at a minimum, state that material being treated includes industrial as well as sanitary wastewater. If a municipal permit

is served by combined sewers or is permitted for wastewater associated with industrial activity, the fact sheet should refer to the stormwater as a type of wastewater being treated.

Fact sheets should describe reasons behind mercury limits and mercury minimization plan conditions when based on a mercury variance, as required by 40 CFR 124.8(b)(5).

Fact sheets would be strengthened by providing instructions on how to access supporting materials referenced in the fact sheet, such as the basis for decision memo and draft permit, and by identifying how these materials address the information required by 40 CFR 124.8(b)(3). The fact sheet should make it clear that documents are available to the public in MiWaters or include them with the fact sheet as an attachment. Currently, fact sheets refer to MiWaters in the context of public comments or hearing requests.

Where individual circumstances warrant, fact sheets could be improved by expanding the discussion of antidegradation/anti-backsliding decisions, development of case-by-case TBELs, and description of the receiving water use attainment status. In addition, fact sheets could be improved by providing more detail on calculations or other explanation of derivation of limits including the WQBEL memo and TTBEL memo (see 40 CFR 124.56(a)).

Action Items

<p>Essential</p>	<ul style="list-style-type: none"> • Ensure that fact sheets identify the applicable regulations or policy considerations for each limit type, either directly in the fact sheet or within supporting references cited by fact sheets, per 40 CFR 124.8(b)(4) and 40 CFR 124.56, specifically, <ul style="list-style-type: none"> • Where an ELG applies to a permittee, include citations to the ELG. • Where a POTW permit includes an alternative limitation for percent removal, identify the regulatory basis (e.g. 40 CFR 103.105(a), 103.105(b) or 133.103(d)) for the alternative limitation. • When a BPJ limit is carried forward from a previous permit, ensure that the current permit fact sheet includes a description of or reference to the BPJ basis associated with the limit carried forward. • Ensure the calculations for any pollutant with a discharge limitation are included in the fact sheet, per 40 CFR 124.56(a). • Ensure that fact sheets address how effluent limitations that have been removed or relaxed from the previous permit conditions comply with anti-backsliding and antidegradation requirements, per 40 CFR 124.8.
<p>Recommended</p>	<ul style="list-style-type: none"> • Consider improving fact sheets to ensure that the principal facts and significant factual, legal, methodological and policy questions are provided to the applicant and other interested persons: <ul style="list-style-type: none"> • Where the permit includes federal pretreatment program conditions, the fact sheet should include the number of SIUs, or volume of industrial flow discharged to the POTW. • In addition to naming the receiving water use designation(s), consider identifying the use attainment status of the receiving water, including where applicable pollutants are causing or contributing to the impairment, and any approved TMDL addressing pollutants in the discharge, per 40 CFR 124.8. • For clarity, define abbreviations such as SSO, CSO, and DMR.

IV. NATIONAL TOPIC AREA FINDINGS

National topic areas are aspects of the NPDES permit program that warrant review based on the specific requirements applicable to the selected topic areas. These topic areas have been determined to be important on a national scale. National topic areas are reviewed for all state PQRs. The national topics areas are: Permit Controls for Nutrients in Non-TMDL Waters, Effectiveness of POTW NPDES Permits with Food Processor Contributions, and Small MS4 Permit Requirements.

A. Permit Controls for Nutrients in Non-TMDL Waters

Background

Nutrient pollution is an ongoing environmental challenge; however, nationally permits often lack nutrient limitations. It is vital that permitting authorities actively consider nutrient pollution in their permitting decisions. Of the permits across the country that do have limitations, many are derived from wasteload allocations in TMDLs. For this section, waters that are not protected by a TMDL are considered. These waters may already be impaired by nutrient pollution or may be vulnerable to nutrient pollution due to their hydrology and environmental conditions. For the purposes of this program area, ammonia is considered as a toxic pollutant, not a nutrient.

Federal regulations at 40 CFR 122.44(d)(1)(i) require permit limitations to be developed for any pollutant which causes, has the reasonable potential to cause, or contributes to an excursion above any state WQS, whether those WQS include narrative or numeric criteria.

Program Overview

Michigan regulates nutrient discharges through Administrative Code R323.1060 (Rule 60). Rule 60 is divided into two parts:

- Part (1) specifies that “phosphorus which is or may readily become available as a plant nutrient shall be controlled from point source discharges to achieve 1 mg/L of total phosphorus as a maximum monthly average effluent concentration unless other limits, either higher or lower, are deemed necessary and appropriate by [EGLE].”
- Part (2) states that in addition to the protection provided in Part (1), “nutrients shall be limited to the extent necessary to prevent stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria which are or may become injurious to the designated uses of the surface water of the state.”

Phosphorus has long been recognized by EGLE as a controlling factor in plant and algae growth in Michigan lakes and streams. Consequently, NPDES controls on nutrients have centered primarily on total phosphorus (TP). According to EGLE, the state evaluates the need for TP limits

under part (2) by interpreting technical papers.^{11,12} For example, EGLE refers to draft reports developed by the state for a 2001 nutrient criteria development program which recommend in-stream TP levels of 0.03 – 0.1 mg/L for rivers and 0.008 – 0.03 mg/L for lakes/impoundments. In addition, EGLE has a guidance document for phosphorus. Generally, an aquatic biologist will check downstream waterbodies within 20 miles for phosphorus impairments or other evidence of nutrient concerns (e.g., algal blooms or aquatic nuisance control permits). EGLE reports that there are 80 NPDES permits with phosphorus effluent limits based on Part (2)¹³.

To assess how nutrients are addressed in the EGLE program, EPA reviewed three individual permits issued to permittees that discharge to nutrient impaired water bodies that do not have a completed TMDL for nutrients. Two of the permits are POTWs with design average flow greater than 1.0 MGD (MI0022853 and MI0022730) and one is a non-municipal permittee which has not yet started discharging (MI0058892). The review considered supporting documentation in each permit's administrative record as well as information about the receiving water from the 2016 Integrated Report which identifies impaired waters on the state's CWA Section 305(b) list and probable causes of impairment on the CWA Section 303(d) list.

Both POTWs have a monthly average TP limit of 1.0 mg/L. The basis for decision memo for both refers to water quality as the basis. For, MI0022730 the basis of the TP limit is "WQBEL" and for MI0022853 the basis is "WQS." These limits are carried over from the previous permit, and documentation with the current permit does not explain how the 1.0 mg/L value is derived. Additionally, none of the fact sheets or supporting materials for either POTW indicate that the state conducted an RPA for TP. As stated in Section III.B.2 *Reasonable Potential and Water Quality-Based Effluent Limitations*, EGLE has developed detailed guidelines for establishing WQBELs for non-conventional parameters such as phosphorus. 40 CFR 122.44(d)(1)(vii)(A) provides that, when developing WQBELs, the permit authority shall ensure that "the level of water quality to be achieved by limits on point sources shall be derived from and comply with all applicable water quality standards."

The non-municipal permit (MI0058892) does not include TP limits or TP monitoring requirements as it is permitted to discharge only industrial process wastewater and stormwater that is not expected to contain nutrients. The facility's sanitary wastewater will discharge to a local POTW.

Permit applications are missing some nutrient information. Applications for the two municipal permits reviewed in the nutrient topic area (MI0022853 and MI0022730) do not provide effluent data for nitrate/nitrite and TKN. See also *Areas for Improvement*

¹¹ Presentation at the state and EPA face-to-face meeting, "Phosphorus Limits and Implementation in Michigan", by Permits Section, Water Bureau, Michigan EGLE, given to R5 NPDES Program. May 5, 2010.

¹² A framework for developing ecosystem-specific nutrient criteria: Integrating biological thresholds with predictive modeling. Patricia A. Soranno, et al. March 31, 2008.

¹³ Alexander, C., Michigan DEGLE, attachment to July 19, 2022, electronic mail message to Steve Jann, EPA.

Section III.A.2., *Core Review Findings, Permit Application Requirements* for a discussion about EGLE permit application requirements.

Program Strengths

EGLE has phosphorus implementation procedures to interpret Rule 60, the Michigan narrative criterion, to set numeric WQBELs for TP on a case-by-case basis, as required by 40 CFR 122.44(d)(1). EGLE continues to make good progress implementing the narrative WQS for nutrients through a numeric limit(s), consistent with requirements at 40 CFR 122.44, including sections 122.44(d)(1)(iii) through (vi).

Areas for Improvement

As stated above in Section III.B.3 *Final Effluent Limitations and Documentation*, permit documentation should identify the basis for limits, monitoring requirements, and/or special conditions for nutrient parameters when discharging into nutrient impaired waters that do not have a TMDL for nutrients (see 40 CFR 124.56(a)).

Action Items

- Essential

 - The PQR did not identify any essential action items for this section.

- Recommended

 - No new recommended action item, see recommendation for nutrient documentation in Section III.B.3 *Development of Effluent Limitations*.

B. Effectiveness of POTW NPDES Permits with Food Processor Contributions

Background

The PQR national topic area *Effectiveness of POTW NPDES Programs with Food Processor Contributions* evaluates successful and unique practices with respect to food processor IUs by evaluating whether appropriate controls are included in the receiving POTW’s NPDES permit and documented in the NPDES permit fact sheet or statement of basis. This topic area aligns with the EPA Office of Enforcement Compliance and Assurance National Compliance Initiative, [Reducing Significant Noncompliance with National Pollutant Discharge Elimination System Permits](#) by gathering information that can be used to provide permit writers with tools to maintain or improve POTW and IU compliance with respect to conventional pollutants and nutrients.

The food processing sector manufactures edible foodstuffs such as dairy, meat, vegetables, baked goods, and grains. The main constituents of food processing wastewaters are conventional pollutants (BOD₅, TSS, O&G, pH, and bacteria) and non-conventional pollutants (such as TP and ammonia nitrogen). The food processing sector may produce these pollutants

at levels or intervals that could upset the POTW or cause treatment interference if not properly controlled.

Michigan is authorized by EPA to implement the pretreatment program (see 40 CFR 403.10). Regulations governing this program are at 40 CFR Part 403, and R323.231 through R323.2317 of the Michigan Administrative Code (Part 23 rules). EGLE regulates POTWs with pretreatment programs either through the MIPP or the FIPP. Generally, the MIPP regulates POTWs with a design average flow equal to or less than 5 MGD whereas the FIPP regulates those with a design average flow greater than 5 MGD. Both programs are similar, but MIPP requirements are less extensive.

The General Pretreatment Regulations at 40 CFR 403.5(c)(1) require POTWs with approved pretreatment programs to continue to develop and apply local limits as necessary to control any pollutant that can reasonably be discharged into the POTW by an IU in sufficient amounts to pass through or interfere with the treatment works, contaminate its sludge, cause problems in the collection system, or jeopardize workers’ health and safety. The General Pretreatment Regulations require an Approval Authority to ensure that all substantive parts of the POTW’s pretreatment program are fully established and implemented, including control mechanisms a POTW issues to its IUs to reduce pollutants in the indirect discharge (see 40 CFR 403.11). In Michigan, this would apply to FIPPs.

POTWs that do not have approved programs may also be required to develop specific local limits as circumstances warrant (see 40 CFR 403.5(c)(2)). Local limits and other site-specific requirements are enforced by the POTW through IU control mechanisms and POTW sewer use ordinances (SUOs).

Table 6 identifies the pretreatment and NPDES requirements considered during this PQR. For the purposes of this table, the terms Director and Permitting Authority refer to EGLE. As Permitting Authority, EGLE is responsible for administering the NPDES program consistent with provisions of the CWA, including issuance of NPDES permits to POTWs with approved pretreatment programs.

Table 6. Regulatory Focus for this Section of the PQR

Citation	Description
40 CFR 122.42(b)	POTW requirements to provide adequate notice of new pollutants to the Director
40 CFR 122.44(j)	Pretreatment Programs for POTW
40 CFR 124.3(a) and (c)	The POTW must submit a timely and completed application for an NPDES permit or NPDES permit renewal
40 CFR 124.8(a) and (b)	The permitting authority must prepare a fact sheet for every draft permit for a major NPDES facility. Fact sheets must briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit including references.
40 CFR 403.5(a), (b) and (c)	National pretreatment standards: Prohibited discharges
40 CFR 403.3	Definitions
40 CFR 403.8	Pretreatment program requirements: Development and implementation by POTW

Citation	Description
40 CFR 403.10	Development and submission of NPDES state pretreatment programs
40 CFR 403.11	Approval procedures for POTW pretreatment programs and POTW granting of removal credits

Pretreatment Program Coverage

As shown in Table 7, 95 POTWs in Michigan have an MIPP or FIPP which represents 32 percent of the municipal individual NPDES permits in the state as of October 21, 2021. Among the 95 POTWs, 62 are MIPPs and 33 are FIPPs. FIPPs and MIPPs control a total of 894 SIUs, most of which (82 percent) are covered by a FIPP. About half of the 894 SIUs are CIUs, as defined at 40 CFR 403.8(f)(1)(ii). There are currently no federal categorical pretreatment standards for food processors so none of the food processor IUs examined in this section are categorical industrial users (CIUs).

All discharge permits issued to IUs are through the MIPP or FIPP. In other words, EGLE does not issue discharge permits to IUs, including IUs connected to POTWs without an approved pretreatment program.

Table 7. Michigan SIUs by Pretreatment Program Status

SIU Description	Number of SIU(s) Controlled by a FIPP (33 POTWs)	Number of SIU(s) Controlled by a MIPP (62 POTWs)	Total
Categorical SIU (CIU)	366	86	452
Non-categorical SIU	371	71	442
Total SIU	737	157	894

Data Source: Received via email on 3/21/2022 from the EGLE Pretreatment Coordinator

EGLE pretreatment staff conduct all pretreatment program report reviews, including annual report reviews. EGLE staff conduct pretreatment compliance audits and pretreatment compliance inspections at POTWs with FIPPs and MIPPs.

EGLE requires POTWs with a design flow of 5 MGD or greater that receive process wastewater from SIUs to develop and implement a FIPP.

Permits to POTWs with a FIPP or MIPP include special conditions to implement the program. Permits to POTWs without a pretreatment program include a special condition requiring the POTW to notify EGLE within 30 days if an IU commences to discharge or proposes to commence discharging industrial wastes to the POTW, and specific prohibitions from 40 CFR 403.5(b).

Findings

Table 8 identifies the four permits reviewed for this topic area: two (MI0022730 and MI0042978) are MIPPs; and two (MI0024392 and MI0025577) are FIPPs. EPA Region 5 selected

these permits from eight permits with food processor indirect dischargers identified by EGLE. For the two MIPPs, EPA selected MI0022730 because it discharges to nutrient impaired receiving waters without a TMDL (This was for the sake of PQR efficiency, not due to any correlation between the two factors.), and MI0042978 because it has multiple food processor IUs. As for the FIPPs, two were excluded since one had undergone an EPA Region 5 RTR, and another has a single food processor IU that is reported to rarely discharge food processing wastewater containing biodegradable organic materials.

Table 8 identifies the type of controls in SUOs issued by each of the four POTWs. Collectively, the SUOs include local limits and/or surcharge controls. The type of control (local limits or surcharge) and parameters controlled vary by POTW. All four SUOs regulate BOD₅ or CBOD₅, TSS, and phosphorus, and three control ammonia, and fats, oil, and grease (FOG). SUOs for three of the POTWs are available online (hyperlinked in the table).

Table 8. NPDES Permits Selected for the Pretreatment Topic Area

POTW Name and NPDES Number (SUO is linked)	Pretreatment Program Type	Design Average Flow (DAF) (MGD)	No. of SIUs ¹	No. of Food Processor IUs ¹	Example of SUO Controls
City of Coopersville MI0022730	MIPP	2.3	1	1	Local limits for arsenic, cadmium, total chromium, copper, cyanide, lead, mercury, nickel, silver, zinc, BOD ₅ , total phosphorus, TSS, and FOG
Lakewood Wastewater Authority ² MI0042978	MIPP	1.38	3	3	Local limits for BOD ₅ , TSS, total phosphorus, TKN, FOG, pH, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, and zinc Surcharge for BOD ₅ , TSS, total phosphorus, TKN, and ammonia nitrogen may be approved as an alternative to compliance with local limit.
City of Saginaw MI0025577	FIPP	32	10	1	Local limits for arsenic, benzene, cadmium, chromium, copper, cyanide (amenable), lead, mercury, nickel, selenium, total BTEX, total PCBs, zinc, BOD, TSS, phosphorus, and ammonia nitrogen
City of Wyoming MI0024392	FIPP	22	0	3	Local limits for BOD ₅ , TSS, total phosphorus, ammonia nitrogen, and FOG Surcharge for BOD ₅ , TSS, phosphorus, FOG, and ammonia nitrogen

¹ Based on the information provided in the permit application, unless otherwise noted.

² Lakewood Wastewater Authority SUO was not available online.

The PQR reviewed three control mechanisms (discharge permits issued to IUs by the POTW) to identify IU requirements for conventional pollutants. As shown in Table 9, the reviews involved one food processor for MI0022730 and three food processors for MI0042978.

Table 9. Summary of SIU Discharge Permit Conditions

Permittee Name (NPDES Number)	IU Name (Discharge Permit Number)	Type of Food Processor ¹	Average Process Wastewater Discharge (gallons per day [gpd]) ¹	Monitored Pollutants ^{2,3}
City of Coopersville (MI0022730)	Continental Dairy Facilities (Not available ⁴)	Powdered milk and customized milk products	Not determined (N/D) ⁵	Limits: Flow, CBOD, TSS, phosphorus ⁶
Lakewood Wastewater Authority (MI0049278)	Cargill Kitchen Solutions (LWA-001-042018)	Egg products	250,000	Limits: BOD ₅ , TSS, TP, TKN, and pH
	Herbuck's Poultry Ranch (LWA-002-072018)	Poultry farm, henner, egg washing, and egg cracking	40,000	Limits: BOD ₅ , TSS, TP, TKN, and pH Monitoring-only: Molybdenum and zinc
	Twin City Foods (LWA-003-042018)	Harvesting, washing, and packing of green beans	203,000	Limits: BOD ₅ , TSS, TP, TKN, and pH

¹ Based on information included in the POTW's NPDES permit application.

² Includes parameters identified in the permit with numerical discharge limits, applicable surcharge values, and/or monitoring only requirements.

³ Based on information included in the IU's control mechanism.

⁴ Permit not provided for review.

⁵ Information not provided in the POTW's NPDES permit application.

⁶ Based on information included in the POTW's inspection report for an inspection of the food processor conducted on October 19, 2021.

Infrequent monitoring of potentially variable loadings from IUs may impede a POTW's ability to detect and expeditiously react to influent quality changes. Table 10 compares IU effluent limitations and discharge monitoring frequencies for food processors with those for the receiving POTWs to evaluate the adequacy of IU discharge monitoring frequencies to support timely detection of discharges with the potential to cause problems with the POTW collection or treatment systems.

Table 10. Comparison of NPDES Permit and IU Discharge Permit Conditions

IU and POTW	Pollutant Monitoring Frequency and Limit ¹									
	Total P		Ammonia		BOD ₅		TSS		O&G	
City of Coopersville (MI0022730)										
Continental Dairy Facilities	Daily	394 lbs/day DM	N/A	N/A	Daily (BOD ₅)	11,855 lbs/day DM	Daily	3,316 lbs/day DM	Daily	N/A
City of Coopersville (MI0022730)	Daily	21 lbs/day MM; 1.0 mg/l MM	Quarterly	Report only	Daily (CBOD ₅)	520 lbs/day MM; 830 lbs/day 7-day max; 25 mg/l MM; 40 mg/l 7-day max	Daily	530 lbs/day MM; 940 lbs/day 7-day max; 30 mg/l MM; 45 mg/l 7-day max	N/A	N/A
Lakewood Wastewater Authority (MI0042978)										
Cargill Kitchen Solutions	Daily	10 mg/l DM	Daily	N/A	Daily	300 mg/l DM	Daily	350 mg/l DM	N/A	250 mg/l IM
Herbuck's Poultry Ranch	Weekly	10 mg/l DM	N/A	N/A	Weekly	580 mg/l DM	Weekly	350 mg/l DM	N/A	250 mg/l IM
Twin City Foods	Daily	30 lb/day MA June 15-Oct 31; 3.7 lb/day DM Nov 1-June 14	Daily	0.1 mg/l	Daily	4,000 lbs/day June 15-Oct 31; 350 lbs/day DM Nov 1-June 14	Daily	1,000 lbs/day June 15-Oct 31; 77 lbs/day Nov 1-June 14	N/A	250 mg/l IM
Lakewood Wastewater Authority (MI0049278)	5x/week	12 lbs/day MM and 1.0 mg/l MM Sept-Apr; 3.5 lbs/day MM and 0.3 mg/l MM May-Aug	5x/week	35lbs/day and 3.0 mg/l 7-day max May-Sept; report only Oct-Apr	5x/week (CBOD ₅)	170 lbs/day MM, 250 lbs/day 7-day max, 15 mg/l MM, and 22 mg/l DM May-Sept ; 290 lbs/day MM, 460 lbs/day 7-day max, 25 mg/l MM, and 40 mg/l 7-day max Oct-Apr ; report DM Oct-Apr	5x/week	350 lbs/day MM, 520 lbs/day 7-day max, 30 mg/l MM, and 45 mg/l 7-day daily max	N/A	N/A
City of Saginaw (MI0025577)										
Hausbeck Pickle Co.	N/A	7 mg/l	N/A	77 mg/l	N/A	493 mg/l	N/A	1100 mg/l	N/A	N/A
City of Saginaw (MI0025577)	Daily	190 lbs/day MM and 0.7 mg/l MM	April-Sept Daily; Oct-	5300 lbs/day 7-day max	Daily (CBOD ₅)	June-Sept: 4500 lbs/day MM; 6700	Daily	8000 lbs/day MM; 12000 lbs/day 7-	N/A	N/A

IU and POTW	Pollutant Monitoring Frequency and Limit ¹									
	Total P		Ammonia		BOD ₅		TSS		O&G	
		Oct-March; report April-Sept	Nov Weekly	and 20 mg/l DM April-May; 1500 lbs/day 7-day max and 5.5 mg/l DM June-Sept; 5900 lbs/day MM and 22 mg/l MM Oct-Nov		lbs/day 7-day max; 17 mg/l MM; 25 mg/l DM Oct-May: 6700 lbs/day; 11000 lbs/day 7-day max; 25 mg/l MM; 40 mg/l 7-day max		day max; 30 mg/l MM; 45 mg/l 7-day max		
City of Wyoming (MI0024392)										
City of Wyoming (MI0024392)	Daily	180 lbs/day MM; 1.0 mg/l MM	Daily	June-Sept: 1500 lbs/day 7-day max; 8 mg/l 7-day max Oct-May; report	Daily (CBOD ₅)	June-Sept; 2200 lbs/day MM; 3300 lbs/day 7-day max; 12 mg/l MM; 18 mg/l DM Oct-May; 4600 lbs/day MM; 7300 lbs/day 7-day max; 25 mg/l MM; 40 mg/l 7-day max	Daily	5500 lbs/day MM; 8300 lbs/day 7-day max; 30 mg/l MM; 45 mg/l 7-day max	N/A	N/A

¹ For this table, the following abbreviations apply: not applicable (N/A), weekly average (WA), monthly average (MA), instantaneous maximum (IM), daily maximum (DM), and monthly maximum (MM).

NPDES fact sheets for Coopersville (MI0022730), Lakewood (MI0042978), Saginaw (MI0025577) and Wyoming (MI0024392) do not identify contributing industrial dischargers. The fact sheet for MI0022730 includes an “Additional Information” section with two paragraphs about the MIPP. The first identifies the MIPP approval date and governing Part 23 Rules. The second discusses an approved change in the point of discharge to the WWTP by a food processing IU. Fact sheets for MI0042978 and MI0024392 did not refer to an IPP or include an “Additional Information” section. Basis for decision memos identify FIPP or MIPP in the list of permit conditions.

Monitoring frequencies in MI0042978 and MI0025577 are similar to the discharge permits for their respective food processor IUs. Monitoring frequencies in MI0022730 for TP, BOD₅, and TSS are similar to the discharge permits issued to the POTW’s food processor. These monitoring frequencies appear adequate to provide the POTW information to assess if the industrial conventional pollutant flow affects the POTW operations.

All four NPDES permits require the POTW to implement either a MIPP or a FIPP, to submit an annual pretreatment report (citing to 40 CFR 403.12(i) for FIPPs and R323.2310(8) for state pretreatment programs). Permits with FIPPs (MI0024392 and MI0025577) require that the permittee provide a written technical evaluation of the need to revise their local limits within one year of the permit effective date (40 CFR 122.44(j)(2)(iii)). Similar requirements to provide a technical evaluation of local limits are not included in the other two permits (MI0042987 and MI0024392) since they have MIPPs.

The headings in the special conditions for the Industrial Pretreatment Program are clear about whether the program is or is not federally approved. Special conditions for POTWs with state pretreatment programs (MI0022730 and MI0042978) state that the permittee must comply with the approved Michigan Industrial Pretreatment Program, and conditions for the federal pretreatment programs (MI0025577 and MI0024392) state that the permittee must comply with R323.2301 through R323.2317 of the Michigan Administrative Code, the General Pretreatment Regulations at 40 CFR Part 403 and the approved Federal Industrial Pretreatment Program.

All NPDES permits reviewed for this section require development and enforcement of local limits.

Program Strengths

The EGLE MIPP program provides an efficient and responsive approach for placing appropriate controls on industrial users when the POTW is not required under 40 CFR 403.8(a) to develop a FIPP. Permit special conditions are very clear about whether the program is a FIPP or MIPP. Permit conditions appear to consider the additional organic loads possible from food processor IUs and set limitations or monitoring requirements accordingly.

Areas for Improvement

The PQR did not identify any areas for improvement in this topic area.

Action Items

Essential	<ul style="list-style-type: none">• The PQR did not identify any essential action items for this section.
Recommended	<ul style="list-style-type: none">• The PQR did not identify any recommended action items for this section.

C. Small MS4 Permit Requirements

Background

EPA recently updated the small MS4 permitting regulations to clarify: (1) the procedures to be used when coverage is by general permits (see 40 CFR 122.28(d)); (2) the requirement that the

permit establish the terms and conditions necessary to meet the MS4 permit standard (i.e., “to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act”), including conditions to address the minimum control measures, reporting, and, as appropriate, water quality requirements (see 40 CFR 122.34(a) and (b)); and (3) the requirement that permit terms must be established in a “clear, specific, and measurable” manner (see 40 CFR 122.34(a)).

EGLE replaced its small MS4 GP coverage with IPs for small MS4s. The PQR reviewed two small MS4 IPs for consistency with the Phase II stormwater permit regulations: MI0060048 for Northville Township MS4–Oakland issued on June 1, 2020; and MI0059327 for East Lansing MS4–Ingham issued February 1, 2020. Both permits include clear, specific, and measurable requirements that satisfy the small MS4 permit standards under 40 CFR 122.34(a)-(b). The permits require that the permittees update and/or amend current Storm Water Management Plans (SWMPs) to document their programs. EGLE implements TMDL-related requirements in the permit explicitly rather than by reference. Permits are clear and specific about how the SWMP must implement the TMDL-related requirements.

Program Strengths

The individual permits include several good examples of provisions that meet the 40 CFR 122.34(a) regulatory requirements for clear, specific, and measurable provisions, particularly in the sections addressing the minimum control measures (MCMs). Individual permits consistently use similar or identical language across all permits, which streamlines issuance of subsequent permits. Some permittees in the same watershed, such as the Alliance of Rouge Communities, have developed elements of their SWMP collaboratively to better align similar goals. This is developed alongside their individual SWMP.

Areas for Improvement

Consider including conditions that apply when another entity carries out responsibilities for the MS4 permittee as specified in 40 CFR 122.35(a)(1)-(3).

Action Items

Essential

- The PQR did not identify any essential action items for this section.

Recommended

- Permits for MS4s should specify conditions that apply when another entity carries out responsibilities for the MS4 permittee.

V. REGIONAL TOPIC AREA FINDINGS

Region 5 elected not to include a Regional Topic in this review.

VI. REVIEW OF PROGRESS ON ESSENTIAL AND RECCOMENDED ACTION ITEMS FROM LAST PQR

Region 5 did not participate in the 2012-2017 PQR cycle; therefore, there are no previous essential or recommended action items.

VII. ACTION ITEMS FROM FY 2018–2022 PQR CYCLE

This section provides a summary of the main findings of the PQR and provides proposed action items to improve Michigan’s NPDES permit programs, as discussed throughout sections III, IV, and V of this report.

The proposed action items are divided into two categories to identify the priority that should be placed on each item and facilitate discussions between Regions and states.

- **Essential Actions** – Address inconsistencies with a federal regulation, which EPA cites for each essential action item. Essential actions are listed in Table 11 below.
- **Recommended Actions** – Make recommendations based on guidance, policies, or other best practices. Prior PQR reports identified these action items as Category 2 and 3. Recommended actions are listed in Table 12 below.

Table 11. Essential Action Items from FY2018-2022 PQR Cycle

Topic	Essential Action(s)
Permit Application Requirements	<ul style="list-style-type: none"> • Ensure that required information is included in permit application submittals. See 40 CFR 122.21(g) for non-municipal applicants and 122.21(j) for municipal applicants.
Development of Effluent Limitations	<ul style="list-style-type: none"> • Ensure that short-term (e.g., maximum daily) as well as long-term (e.g., average monthly) effluent limitations are established. If it is impracticable to establish both short-term and long-term limitations for a specific parameter, the rationale should be documented in the basis for decision memo or fact sheet, per 40 CFR 122.45(d)(1).
Standards and Special Conditions	<ul style="list-style-type: none"> • Ensure that permits fully specify records retention requirements (40 CFR 122.41(j)(2)). <ul style="list-style-type: none"> ○ Specify that data which must be retained includes data used by the permittee to complete the permit application. ○ Specify that the three-year records retention period starts on the date of the sample, measurement, report, or application. • Ensure that permits contain all appropriate additional standard conditions for notification required by 40 CFR 122.42(a)(1)-(2) (applicable to non-municipal permits) and 40 CFR 122.42(b)(1)-(3) (applicable to municipal permits) for POTWs without a FIPP.
Administrative Process	<ul style="list-style-type: none"> • Ensure that the public notice includes all required elements in 40 CFR 124.10(d)(1)(vii), regarding sludge use and disposal practice.

Topic	Essential Action(s)
Administrative Record and Fact Sheet	<ul style="list-style-type: none"> • Ensure that fact sheets identify the applicable regulations or policy considerations for each limit type, either directly in the fact sheet or within supporting references cited by fact sheets, per 40 CFR 124.8(b)(4) and 40 CFR 124.56, specifically, <ul style="list-style-type: none"> ○ Where an ELG applies to a permittee, include citations to the ELG. ○ Where a POTW permit includes an alternative limitation for percent removal, identify the regulatory basis (e.g. 40 CFR 103.105(a), 103.105(b) or 133.103(d)) for the alternative limitation. ○ When a BPJ limit is carried forward from a previous permit, ensure that the current permit fact sheet includes a description of the BPJ basis associated with the limit carried forward. • Ensure the calculations for any pollutant with a discharge limitation are included in the fact sheet, per 40 CFR 124.56(a). • Ensure fact sheets address how effluent limitations that have been removed or relaxed from the previous permit conditions comply with anti-backsliding and antidegradation requirements, per 40 CFR 124.8.

Table 12. Recommended Action Items from FY2018-2022 PQR Cycle

Topic	Recommended Action(s)
Permit Application Requirements	<ul style="list-style-type: none"> • Where a permit applicant requests a waiver from submitting quantitative data, EGLE should document its decisions on whether or not the waiver request is granted. • The <i>Application Completeness Checklist</i> should show both the identification and resolution of issues as well as the date when EGLE deems the application complete.
Development of Effluent Limitations	<ul style="list-style-type: none"> • Ensure the basis for decision memos document the principal facts and significant factual, legal, methodological and policy questions considered in preparing the draft permit. <ul style="list-style-type: none"> ○ For non-municipal permittees, document that the final effluent limitations are protective of both technology and water quality standards. ○ Identify all significant changes from the previous permit. ○ Ensure that the Basis for Limits column in tables contained in the basis for decision memo has an entry (e.g., WQBEL, STS, AWT) for each parameter. • Consider improving WQBEL-related memos to support derivation of specific effluent limits, or absence of all limits. <ul style="list-style-type: none"> ○ Identify what background ambient data were considered in setting WQBELs. ○ Provide the rationale for including or not including nutrient limitations or monitoring conditions whenever a discharge containing nutrient parameters enters a nutrient-impaired water without a nutrient TMDL.
Monitoring and Reporting Requirements	<ul style="list-style-type: none"> • Permits should provide complete and accurate descriptions of the location of monitoring stations, and for municipal permits identify the influent monitoring station for influent sampling required to determine percent removal. • Permit conditions referring to Department approval of alternate sampling locations should state that a change in sampling location is only authorized by permit modification.

Topic	Recommended Action(s)
Standard and Special Conditions	<ul style="list-style-type: none"> • NPDES permits for planned facilities that have not yet been built or commenced discharging should include monitoring and reporting conditions to ensure that once discharging begins, EGLE has timely access to actual data upon which to confirm or rebut estimates provided in permit application and act if necessary to modify the permit.
Administrative Process	<ul style="list-style-type: none"> • Consider including in the permit record a note of "comments received" or "no comments received" during the public notice period.
Administrative Record and Fact Sheet	<ul style="list-style-type: none"> • Consider improving fact sheets to ensure that the principal facts and significant factual, legal, methodological and policy questions are provided to the applicant and other interested persons: <ul style="list-style-type: none"> ○ Where the permit includes federal pretreatment program conditions, the fact sheet should include the number of SIUs, or volume of industrial flow discharged to the POTW. ○ In addition to naming the receiving water use designation(s), consider identifying the use attainment status of the receiving water, including where applicable pollutants are causing or contributing to the impairment, and any approved TMDL addressing pollutants in the discharge, per 40 CFR 124.8. ○ For clarity, define abbreviations such as SSO, CSO, and DMR.
Small MS4 Permit Requirements	<ul style="list-style-type: none"> • Permits for MS4s should specify conditions that apply when another entity carries out responsibilities for the MS4 permittee.