Presented below are water quality standards that are in effect for Clean Water Act purposes.

EPA is posting these standards as a convenience to users and has made a reasonable effort to assure their accuracy. Additionally, EPA has made a reasonable effort to identify parts of the standards that are not approved, disapproved, or are otherwise not in effect for Clean Water Act purposes.

Enclosure 1

MULTIPLE DISCHARGER VARIANCE AND PERMITTING STRATEGY FOR MERCURY FISCAL YEARS 2025 - 2029

August 12, 2024

Prepared for:

United States Environmental Protection Agency

Region 5

By:

Michigan Department of Environment, Great Lakes, and Energy

Water Resources Division

Introduction

Michigan hereby proposes a multiple discharge variance (MDV) from the water quality standard (WQS) for mercury for facilities under the National Pollutant Discharge Elimination System (NPDES) Program that meet the requirements of Title 40 of the Code of Federal Regulations (CFR), Part 131, Water Quality Standards and 40 CFR, Part 132, Water Quality Guidance for the Great Lakes System. The WQS variance is limited to a period of five years and allows eligible dischargers to discharge mercury concentrations in excess of the water quality-based effluent limits (WQBEL) necessary to meet the existing WQS of 1.3 nanograms per liter (ng/L) for the protection of wildlife and 1.8 ng/L for the protection of human health of the Part 4 Rules, Water Quality Standards (Part 4 Rules), promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). Michigan proposes the WQS variance based on its findings that justify the need for a WQS variance consistent with the requirements of 40 CFR, Section 131.14. A Mercury Permitting Strategy developed by the Michigan Department of Environmental Quality (MDEQ), Water Bureau, now the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), in 2000 and updated in 2004, 2009, 2015, and 2019 established the MDV for mercury consistent with Rule 323.1103, Variances, of the Part 4 Rules. Michigan is seeking approval for an MDV for mercury for Fiscal Years (FY) 2025-2029, October 1, 2024, to September 30, 2029.

The information included in the proposed MDV supports the findings that efforts under previous MDVs have been successful in reducing mercury to the environment; there is currently no cost-effective treatment for reducing effluent mercury concentrations to meet the WQS of 1.3 ng/L; and human-caused mercury in the atmosphere is the major source of mercury to Michigan surface waters.

Regulatory Framework

Variances from a WQS are allowed under state and federal regulations. Michigan Rule 323.1103, Variances, of the Part 4 Rules, allows for a variance from a Michigan WQS that is the basis for a WQBEL in an NPDES permit where various conditions prevent the attainment of a WQS (Attachment A). Federal requirements under 40 CFR,

Section 131.14, Water Quality Standards Variances, provides states, territories, and authorized tribes a mechanism to adopt WQS variances. Michigan is part of the Great Lakes system and, therefore, is not only subject to 40 CFR, Part 131, but also 40 CFR, Part 132, Water Quality Guidance for the Great Lakes System Procedure 2, Variances from Water Quality Standards for Point Sources.

A WQS variance requires a 45-day public notice of a public hearing and documents available to the public 30-days prior to the public hearing. The draft MDV public notice and information meeting and hearing were announced in EGLE's online Environmental Calendar beginning May 10, 2024. Notice of the public hearing and that the MDV would be available for comment was emailed to all NPDES permittees with mercury limits and/or monitoring requirements, stakeholder groups, federally recognized Tribes, and the other Great Lakes states' environmental agencies on May 10, 2024. The draft MDV public notice period began May 28, 2024, and ended July 1, 2024. An information meeting and public hearing was held on June 27, 2024.

Scope of Facilities Eligible for Consideration under the MDV

Michigan's Part 8 Rules, Water Quality-Based Effluent Limit Development for Toxic Substances, promulgated under Part 31 of the NREPA, are used to establish WQBELs for toxic substances for point source discharges that are protective of the designated uses of surface waters of the state. The WQBELs for mercury are developed for NPDES permitted facilities following provisions contained within Michigan's Rule 323.1211, Reasonable Potential for Chemical-Specific WQBELs, of the Part 8 Rules, and are incorporated into NPDES permits when mercury is, or may be, discharged at a level that has the reasonable potential to cause or contribute to an exceedance of the WQS. In summary, for each discharge for which facility-specific effluent mercury data is provided, a statistical analysis is conducted to determine if there is reasonable potential for a proposed discharge concentration of mercury to exceed the WQBEL necessary to meet the WQS. If reasonable potential exists for exceedance of a WQBEL and the facility existed prior to March 23, 1997, the facility is eligible for consideration under the MDV.

Designated Uses
Sections 101(a) and 303(c)(2)(A) of the federal Clean Water Act requires states to identify appropriate uses for all waterbodies, and provide, where attainable, water

quality (in the form of WQS) for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water. Designated uses describe the various uses of waters that are considered desirable and identify those waters that should be protected. At a minimum, all surface waters in Michigan are designated and protected for all of the following uses: agriculture, navigation, industrial water supply, warmwater fishery, other indigenous aquatic life and wildlife, partial body contact recreation, total body contact recreation (May 1 to October 31), and fish consumption. A select group of rivers and inland lakes and the Great Lakes and connecting channels are designated and protected for coldwater fisheries and public water supply (Rule 323.1100, Designated Uses, of the Part 4 Rules).

Many of Michigan waters are not supporting designated uses for other indigenous aquatic life and wildlife and/or fish consumption due to mercury in the water column and/or fish tissue. There are 76,439 river miles, 872,109 acres of inland lakes and reservoirs, 42,167 square miles of Great Lakes open water, 3,049 miles of Great Lakes shoreline, and 125 miles of connecting channels in Michigan. Michigan's 2024 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Report uses data from the fish contaminant and water chemistry monitoring programs, in addition to others, to assess specific surface waters impacted by mercury and other pollutants. The Integrated Report identifies 16,975 miles of rivers and streams, 464,329 acres of inland lakes and reservoirs, all of the Great Lakes open water and shorelines, and all of connecting channels in Michigan as not supporting one or more designated uses due to elevated concentrations of mercury in the ambient water column or in fish tissue (EGLE, 2024).

Information outlined in the MDV and further evaluated and explained in the Statewide Michigan Mercury Total Maximum Daily Load (TMDL), approved by the United States Environmental Protection Agency (USEPA) in September 2018 (MDEQ, 2018), demonstrated that the human-caused condition of mercury air deposition prevents the attainment of the existing use and cannot be remedied within the term of this variance. Atmospheric mercury deposition in Michigan accounts for 98.6 percent of the mercury load to Michigan surface waters, while NPDES discharges account for 1.4 percent. Atmospheric mercury deposition comes from local (instate sources), regional, national, and global sources that are both anthropogenic (80 percent) and natural (20 percent) in origin (MDEQ, 2018). Most contributions to mercury deposition originate from outside Michigan. In-state sources make up 7.8 percent of the state's atmospheric mercury load (MDEQ, 2018). Atmospheric mercury deposition originating from sources within and

outside of Michigan must be controlled in order to reduce concentrations of mercury in fish tissue to protect human health and wildlife.

Data and Analysis Review

Mercury is a naturally occurring metal that is prevalent throughout the global environment. The well-known neurotoxic properties of mercury make it dangerous, at high exposure levels, for both humans and wildlife, especially the young. Human exposure through consumption of fish is the principal public health concern with mercury in the environment. Mercury emitted to the atmosphere can be transported short and long distances from its source before being deposited to land and water. The widespread loading of mercury into the Great Lakes region causes mercury-related fish consumption advisories throughout the Great Lakes system. In Michigan, the majority of mercury pollution in waterbodies is a result of atmospheric deposition from human activities originating from local, regional, national, and global sources (MDEQ, 2018). The widespread impacts of mercury deposition in Michigan are reflected in the results from multiple monitoring programs for fish, wildlife, and ambient water.

Ambient Water Data

The Water Chemistry Monitoring Program (WCMP) began in 1998 with fixed sampling in Michigan's Great Lakes connecting channels, Saginaw Bay, Grand Traverse Bay, and selected tributary stations. A probabilistic design, or statistical sampling, was added to the WCMP in 2005 to gain the ability to extrapolate the data for statewide and regional analyses. The development of the MDV is supported using the most recent quality assured dataset from 2018 through 2022.

Great Lakes Connecting Channels

Total mercury concentrations are measured monthly from April through November at upstream and downstream locations in each Great Lakes Connecting Channel: St. Marys River, St. Clair River, and the Detroit River. These locations are used to determine WQS attainment and measure water quality changes over time. Geometric

means of the 2018 to 2022 WCMP data at the St. Marys River, St. Clair River, and Detroit River stations were under the WQS of 1.3 ng/L with a range of 0.31 to 0.99 ng/L.

Probabilistic River and Stream Analysis

A probabilistic river and stream analysis included 250 sites that were monitored over a four-year period from 2018 through 2022. The geometric mean of the entire mercury dataset collected during this time period was calculated at each station. The WQS of 1.3 ng/L was exceeded at 166 of the 250 stations resulting in 66 percent of the probabilistic stations exceeding the WQS.

Fish Tissue Data

Michigan has a statewide fish consumption advisory for mercury, which was first issued in 1988 by the Michigan Department of Community Health (MDCH), now known as Michigan Department of Health and Human Services (MDHHS). The advisory applies to certain species from all inland lakes and reservoirs, based on a preponderance of data indicating mercury concentrations were elevated in those species in most lakes and impoundments. The MDCH historically used a trigger level for mercury of 0.5 milligram per kilogram (mg/kg) to determine issuance of statewide mercury fish consumption advisory guidelines when developing public health advisories for the Michigan Fish Consumption Advisory Program (MDCH, 2013). In 2013, a change to the approach used by the MDHHS for developing fish consumption advisories was completed. The MDHHS developed a range of fish consumption screening values (FCSV) for mercury that are used to recommend meal consumption categories (e.g., 1 meal per month versus 2 meals per month, etc.), and are protective for everyone, including vulnerable populations such as people with existing medical conditions and unborn and young children. Screening values for the meal consumption categories range from 0.07 mg/kg mercury to 2.2 mg/kg (i.e., a “do not eat” meal category trigger). Mercury was quantified in all 3,007 fish fillet samples collected from inland waters between 2013 and 2022 (Brandon Armstrong, personal communication, February 20, 2024). Mercury concentrations exceeded the lowest MDHHS FCSV of 0.07 mg/kg in 2,453 samples (82 percent). The average concentration exceeded 0.07 mg/kg in at least 1 species from 168 of the 183 (92 percent) inland water bodies sampled during that 10-year time period.

EGLE does not use the MDHHS meal consumption guidelines related to mercury for determining designated use support. Fish tissue mercury concentrations from specific waterbodies are compared to Michigan's fish tissue value for mercury of 0.35 mg/kg, the concentration that is not expected to pose a health concern to people consuming 15 grams or less of fish per day. The methodology used by EGLE to derive the fish tissue residue value is consistent with the methodology used by the USEPA to derive a national fish tissue residue value and consistent with federal requirements for the Great Lakes Basin (USEPA, 1995). A total of 183 inland waterbodies were sampled for fish tissue contaminants between 2013 and 2022. Of those, 89 waterbodies (49 percent) had at least 1 species with an average mercury concentration exceeding 0.35 mg/kg. Many of Michigan's surface waters are impaired due to mercury and do not support the fish consumption designated use.

Long-term trend analysis (1990-2015) for fish tissue data indicates that mercury concentrations in fish from the Great Lakes, connecting channels, and inland waters of Michigan have generally remained static over that period. A detailed discussion of the specifics of this analysis is included in Michigan's Fish Contaminant Trend Summary (Bohr, 2019).

Wildlife Data

A reduction in mercury concentrations occurred in herring gull eggs across the Great Lakes from 1967-2009 as a result of reduced mercury emissions (Evers et al., 2011). Decreases in mercury concentrations also occurred in herring gull eggs from five Michigan colonies between the time periods 2002 to 2006 and 2008 to 2012 (Fuentes et al., 2014). There were nominal increases in mercury concentrations between 2013 and 2019 in the herring gull colonies (EGLE, 2024). Similarly, decreases in mercury concentrations in nesting bald eagles in Michigan occurred from 1986 to 2008, with a slight increase occurring between 2009 and 2012 (Fuentes and Bowerman, 2014). The slight increase found between 2009 and 2012 occurred in eagles nesting in inland and Great Lakes territories. Mercury testing in nestling bald eagles through EGLE's Wildlife Contaminant Monitoring Program was ceased in 2012.

Air Quality Data

In Michigan, the majority of mercury pollution is a result of atmospheric deposition. Atmospheric mercury deposition in Michigan comes from local (i.e., in-state sources), regional, national, and global sources that are both anthropogenic (human-caused) and natural in origin. Most contributions to mercury deposition originate from outside Michigan. In-state sources make up 7.8 percent of the state's atmospheric mercury load (MDEQ, 2018). Atmospheric mercury deposition originating from sources within and outside of Michigan must be controlled in order to reduce concentrations of mercury in fish tissue to protect human health and wildlife.

Ambient air concentrations of mercury from event precipitation samples were measured over ten years by the University of Michigan Air Quality Laboratory (2009), in collaboration with EGLE at three sites (Dexter, Pellston, and Eagle Harbor, Michigan). There is a clear decreasing spatial trend of wet mercury deposition from south to north (Dexter, Michigan to Eagle Harbor, Michigan), but no statistically significant statewide trend has been observed over this same time period (MDEQ, 2008). Evers et al. (2011) also reported no evidence of appreciable decline in wet deposition in the Great Lakes and Canada between 2002 and 2008. The Michigan Statewide Mercury TMDL, approved by the USEPA, identifies multiple studies that show mercury wet deposition has been decreasing in other parts of the country and can be attributed to reduction in mercury in commercial products and reductions from coal-fired utilities (MDEQ, 2018).

An emissions inventory was developed in 2002 by EGLE's Air Quality Division (AQD) for anthropogenic emissions of mercury located within the state of Michigan. An emissions inventory compiles emissions from point, area, and mobile sources. Point sources include specific industrial facilities, such as a steel mill or power plant. Area sources include small pollution sources like fluorescent light bulb crushers that do not emit sufficient quantities of criteria pollutants to require reporting to the annual point source inventory. Mobile sources include on-road vehicular traffic and off-road equipment, such as agricultural and construction equipment. From 2002 to 2017 there have been approximately a 71 percent decrease in Michigan mercury emissions between these 15 years (Michigan.gov/EGLEMercury). The AQD has plans to develop a mercury emissions inventory by the end of 2024. Looking at the coal fired power sector, there have been an estimated mercury emissions reduction of 2,369 pounds between the years 2011 to 2017. Additional mercury activities can be found in the "Great Lakes Binational Strategy for Mercury Risk Management"

(Binational.net, June 2021) and the "Great Lakes Commission Issue Brief" on mercury 2021 (Michigan.gov/EGLEMercury).

Highest Attainable Condition

The requirements of 40 CFR, Section 131.14, specify a variance must represent the highest attainable condition (HAC) achievable by the permittee. The HAC is the condition that is both feasible to attain and is closest to the protection afforded by the designated use and criteria. The requirements of 40 CFR, Section 131.14, requires consideration of feasible pollutant control technologies more stringent than those required by Sections 301(b) and 306 of the federal Clean Water Act prior to adopting a water quality variance.

Treatment for mercury involves removal from wastewater, usually in the form of precipitation, adsorption of mercury onto a media, such as carbon, or filtering wastewater through a semipermeable membrane to remove mercury. While these treatments may offer reductions in mercury, there is no single treatment that has been proven to reliably meet the mercury WQS without environmental cost (USEPA, 2007). Treatment would involve mercury from one form (i.e., wastewater) being transformed into another, such as solid waste, which would remain in the environment. Conversely, prevention and source reduction eliminate or reduce the mercury from entering the environment. While source reduction may take several permit cycles, the benefits are more desirable than the negative impacts of treatment.

Michigan has reviewed the available information regarding end-of-pipe treatment for mercury, including the effectiveness of the treatment and associated costs (Ohio EPA, 1997; and USEPA, 2007). The Ohio analysis concluded that end-of-pipe treatment to meet the WQS would cause widespread social and economic impacts and that a general (e.g., statewide) mercury variance was appropriate. The USEPA analysis concluded treatment could reduce mercury to less than 2.0 ng/L. However, this treatment could require multiple steps, increase cost, and include using flocculants, which can be an additional source of mercury. In addition, treatment effectiveness is based on other constituents of the wastewater, indicating no single treatment would be effective for all dischargers, and costs could vary greatly based on site-specific conditions. Due to uncertainty with treatment and success shown through implementation of the Pollutant Minimization Program (PMP) for mercury, Michigan

believes end-of-pipe controls are not feasible and source reduction and elimination are the best options for reducing mercury in the effluent of Michigan NPDES facilities.

Michigan supports the position that pollution prevention and waste minimization programs for mercury should be the first steps in restoring water quality. The WRD completed a review of publicly owned wastewater treatment facilities in Michigan with data from August 2018 to December 2023 with long-term average effluent mercury concentrations of 1.3 ng/L or lower. Of the 98 publicly owned wastewater treatment facilities reviewed, 3 (3.1 percent) utilize membrane filtration, 31 (31.6 percent) have Advanced Waste Treatment (AWT) limits and employ non-membrane filtration, 15 (15.3 percent) are considered by the WRD to employ advanced treatment (without nonmembrane filtration), 5 (5.1 percent) employ nonmembrane filtration without AWT limits, and 44 (44.9 percent) implement mercury PMPs without AWT limits or nonmembrane filtration (Figure 1). This suggests that PMPs are effective in reducing mercury in wastewater effluent at a level similar to nonmembrane filtration and AWT limits.

Consistent with the federal regulations in 40 CFR, Section 131.14(b), the HAC for facilities covered by the MDV consists of an interim effluent limit that reflects the mercury effluent level currently achievable (LCA) through operation of the existing pollution control technologies at each facility at the time the MDV is adopted. An LCA is derived using facility-specific effluent data, and inclusion in an NPDES permit requires a facility-specific PMP to be developed and implemented. The method used by EGLE to derive LCA-based limits is detailed in Policy and Procedure WRD-004 (Attachment C). EGLE's PMP requirements are outlined in Rule 323.1213(d) of the Part 8 Rules.

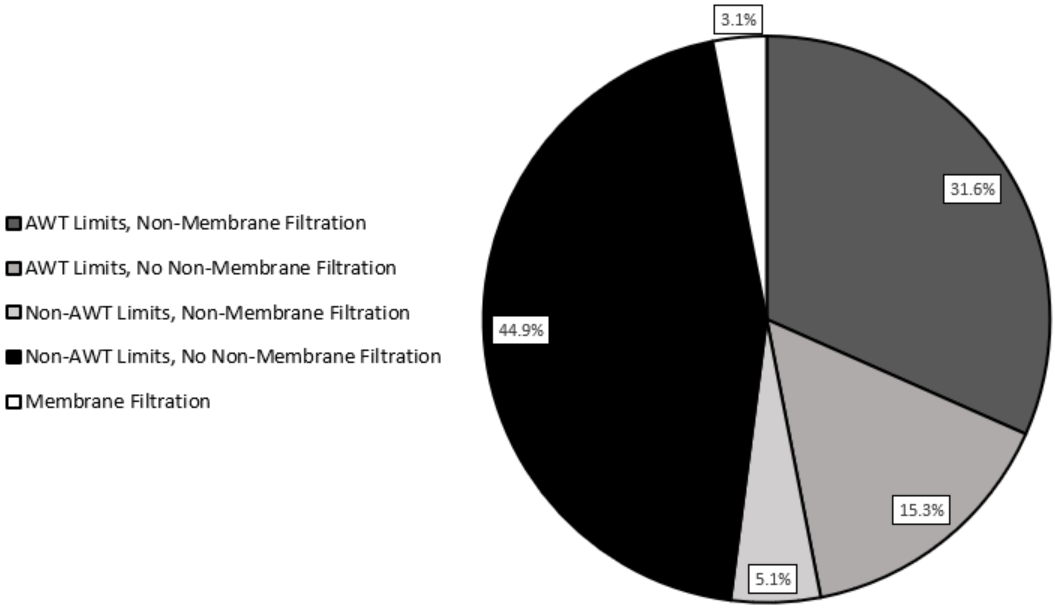

Figure 1: The pie graph shows NPDES publicly owned wastewater treatment facilities with long-term mean mercury effluent concentrations from August 2018 to December 2023. There were 98 facilities with long-term mean mercury effluent concentrations less than or equal to 1.3 ng/L. Of the 98 facilities, 44.9 percent do not have non-membrane filtration or AWT limits and are effectively utilizing PMPs.

Term of the Variance

A WQS variance is a time-limited designated use and criterion that reflects the HAC during the term specified of the variance. All underlying designated uses and associated criteria remain applicable and are not covered under this MDV. Once approved by the USEPA, the MDV will be the applicable WQS. Effluent limits included in NPDES permits will be reflected as the HAC for each facility eligible under the MDV and require facility-specific PMP plans and implementation.

In order to meet the HAC, facilities are required to meet the interim requirements applicable throughout the term of this WQS variance. The interim requirements represent the effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the state adopts the WQS variance. These interim requirements will be represented as LCA limits in an NPDES permit. The development of a site-specific LCA includes utilizing site-specific effluent data using Policy and Procedure WRD-004 (Attachment C). Consistent with Rule 323.1103(6), permits with LCAs will include requirements to implement a PMP.

The requirements for a PMP set forth in Rule 323.1213(d) of the Part 8 Rules are somewhat general. This allows for a great deal of facility-specific flexibility in PMP development and implementation. PMPs are developed to be dynamic documents that can be revised if additional sources are identified, new information becomes available on possible sources of mercury (e.g., source materials or chemicals used in treatment or the industrial process), and if a facility sees influent and/or effluent data trending upward. The flexibility and facility specificity allow for the MDV for mercury to be applicable across a wide range of municipalities and industrial dischargers. EGLE permit compliance staff utilize Policy and Procedure WB-011, Procedure for Review of Pollutant Minimization Programs and Annual Reports (Attachment D) when assisting facilities in the development and implementation of their PMPs and what should be included in their annual reports.

Through the implementation of PMPs and associated monitoring, incremental progress towards reducing effluent mercury concentrations throughout the term of the variance will be accomplished. Specific PMP requirements are outlined in Rule 323.1213(d) of the Part 8 Rules and include the following:

(i) An annual review and semiannual monitoring of potential sources of the toxic substance.

(ii) Quarterly monitoring for the toxic substance in the influent to the wastewater treatment system.

(iii) A commitment by the permittee that reasonable cost-effective control measures will be implemented when sources of the toxic substance are discovered. Factors to be considered shall include all of the following:

(A) Significance of sources.

(B) Economic considerations.

(C) Technical and treatability considerations.

(iv) An annual status report. The report shall be sent to EGLE and shall include all of the following:

(A) All minimization program monitoring results for the previous year.

(B) A list of potential sources of the toxic substance.

(C) A summary of all actions taken to reduce or eliminate the identified sources of the toxic substance. The requirements of paragraphs (i) to (iv) of this subdivision may be modified by EGLE on a case-by-case basis.

Compliance with an LCA mercury NPDES permit limit is determined with required monitoring and results in submittal of the data through Michigan's Discharge Monitoring Reports (DMR) electronic reporting system. Exceedances of the LCA mercury NPDES limit are flagged, and facilities are required to notify EGLE staff of the violation in accordance with the Noncompliance Notification Requirements of the NPDES permit (Attachment E). EGLE permit compliance staff review this information and determine if a facility needs to take additional action to identify and reduce mercury sources. Additional actions may include review of sampling and analytical procedures and field and method blank results, additional samples collected upstream in the collection system or contributing waste streams, desktop review or windshield surveys of community development and identification of additional possible sources, and/or review of any changes in chemicals used at a Wastewater Treatment Plant (WWTP) or in an industrial process.

The term of this WQS variance is five years consistent with requirements under 40 CFR, Sections 131 and 132. As specified in Section 402(b)(1)(B) of the federal Clean Water Act, NPDES permits are for fixed terms not to exceed five years. Michigan has established an approach for scheduling permit reissuance known as the "5-Year Basin Plan" and established a timetable for reissuance of permits located in specific receiving waters. A receiving water is the river, stream, or lake that "receives" a discharge. It is ideal to simultaneously evaluate all permits allowing discharge to a receiving water or watershed. Michigan has established a goal of reissuing NPDES permits every five years, with approximately 20 percent of the permits being reissued each year. The 5-Year Basin Plan was established with the objective of establishing the most efficient plan for water quality monitoring and permit reissuance. Source identification and mercury reduction programs can involve multiple permit cycles to

address mercury reductions. While the time needed by each facility will vary, Michigan revaluates a facility's eligibility under the MDV at permit reissuance. Under the MDV, LCAs are revaluated at permit reissuance as well. If the WQBEL analysis determines the facility no longer has a reasonable potential to exceed the WQS for mercury, the permittee no longer meets the requirements for inclusion in the MDV, the LCA limit and PMP requirements are removed from the permit, and quarterly monitoring is included in the reissued permit. If the Bioaccumulative Chemical of Concern analysis determines the facility continues to show a reasonable potential to exceed the WQS for mercury, the LCA is recalculated and included in the reissued permit at the level achieved in the previous permit, or a lower LCA than the previous permit, with PMP requirements being retained in the permit. EGLE permit development staff determine reasonable potential and calculate the LCA mercury limits to be recommended for NPDES permits. These staff complete detailed reviews of the DMR data that includes mercury effluent data for up to 10 years to determine current effluent quality and trends over time. If it is determined there is an upward trend in data results, EGLE permit compliance staff will determine if a facility needs to take additional action to identify and reduce mercury sources. Continued implementation of the PMP and multiple layers of staff oversight and review leads to greater source reduction and will ensure that the facility is taking the steps necessary to achieve the HAC throughout the term of the variance.

Michigan's Rule 323.1098, Antidegradation, of the Part 4 Rules, indicates that the antidegradation requirements apply to any action or activity pursuant to Part 31 that is anticipated to result in a new or increased loading of pollutants by any source to the surface waters of the state and where independent regulatory authority exists that requires compliance with a WQS. Michigan's Rule 323.1103, Variances, of the Part 4 Rules, does not apply to new dischargers unless the proposed discharge is necessary to alleviate an imminent and substantial danger to the public health or welfare. Therefore, new dischargers are not eligible for coverage by the MDV. With regards to increased discharges of mercury, Michigan Rule 323.1098(2) of the Part 4 Rules, specifies that there can be no lowering of water quality with respect to the pollutant causing the nonattainment when designated uses of the water body are not attained. Subrules 98(8) and 98(9) of Rule 323.1098 describe actions that are not considered a lowering of water quality. A facility covered by the MDV requesting an increased discharge of mercury that meets the requirements of Subrules 98(8) or 98(9) would continue to be eligible for an MDV at an LCA no greater than the level achieved under their current permit per Michigan's Rule 323.1103(6)(a). A facility not covered by the MDV requesting an increased discharge of mercury that meets the requirements of Subrules 98(8) or 98(9) may apply for an individual variance. To date, the USEPA has not approved an individual mercury variance in the State of Michigan.

NPDES Effluent Data

Although technology is advancing, there is limited information on the long-term success of newer technologies at a wide range of facilities with varying influent concentrations and design flows, and no demonstration of the environmental benefits related to the cost of their implementation. Currently, continued implementation of PMPs is the only well documented successful strategy to reduce mercury effluent concentrations at NPDES permitted facilities in Michigan. The success of the PMP is documented by mercury effluent concentrations evaluated for this MDV.

As of December 8, 2023, there were 188 Individual NPDES permits throughout the state, including inland waters, Great Lakes, and connecting channels, containing mercury limits. An additional 39 Individual NPDES permits throughout the state had monitoring requirements only for mercury. Of the 188 permits, 8 (four percent) facilities had a WQS of 1.3 ng/L and 180 (96 percent) had an LCA.

From August 1, 2018, to December 8, 2023, there were 227 facilities that reported mercury data. While data indicates many facilities are trending downward in effluent concentrations due to source identification and reduction efforts under PMPs, there are still many facilities where effluent concentrations routinely exceed the mercury WQS. Data obtained from facility DMRs for point source discharges resulted in the review of 8,201 discreet mercury datapoints at 227 facilities. Of the 8,201 data points reviewed, 3,210 (39 percent) were above the mercury WQS of 1.3 ng/L. Many facilities (131) have long-term mean mercury effluent concentrations below 1.3 ng/L. The majority of facilities (220) have long-term mean mercury effluent concentrations under 5 ng/L (Figure 2). There were 6 facilities with long-term mean mercury effluent concentrations greater than 5 ng/L and less than 10 ng/L. There was only 1 facility that had calculated mean effluent concentrations greater than or equal to 10 ng/L. This facility is a paper manufacturer.

Further analysis of data from August 1, 2018, to December 8, 2023, shows 42 percent of facilities with mercury limits or monitoring requirements have long-term arithmetic means above the WQS of 1.3 ng/L, while 58 percent of facilities with long-term arithmetic mean mercury concentrations met the WQS of 1.3 ng/L (Figure 3).

Figure 4 represents long-term arithmetic mean mercury concentrations from August 1, 2018, to December 8, 2023, for various sectors. In general, long-term arithmetic mean mercury concentrations for most sectors have shown a decrease from those concentrations reported in the previous MDV. The mining sector has shown an increase in long-term arithmetic mean mercury concentrations from 0.7 ng/L to 1.0 ng/L. However, the long-term arithmetic mean mercury concentration for the mining sector is below the WQS of 1.3 ng/L.

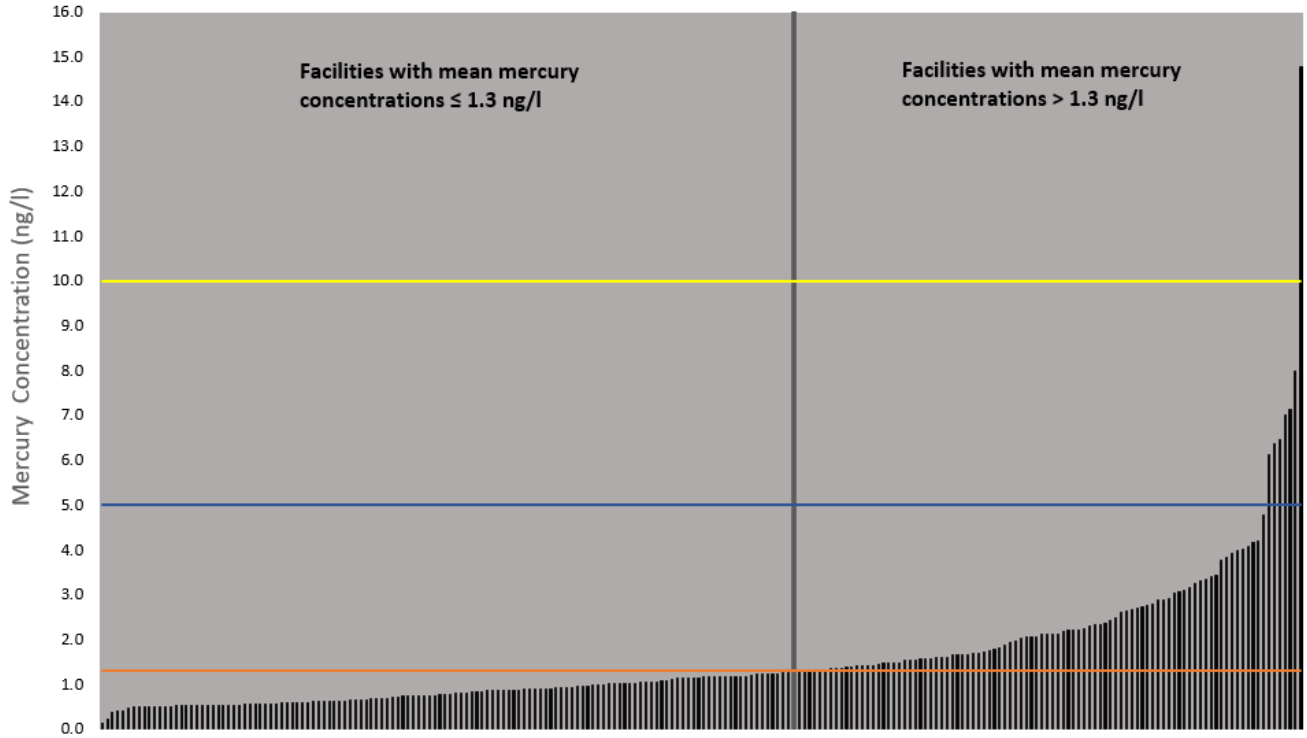

Figure 2: The bar graph shows long-term mean mercury effluent concentrations from August 2018 to December 2023 at NPDES permitted facilities. The vertical line is included to separate the facilities with long-term mean mercury effluent concentrations above and below 1.3 ng/L. The horizontal lines are included to mark the WQS of 1.3 ng/L and identify long-term mean mercury effluent concentrations above and below 5 ng/L and 10 ng/L, respectively. There are 131 facilities with long-term mean mercury effluent concentrations less than or equal to 1.3 ng/L and 96 facilities greater than 1.3 ng/L.

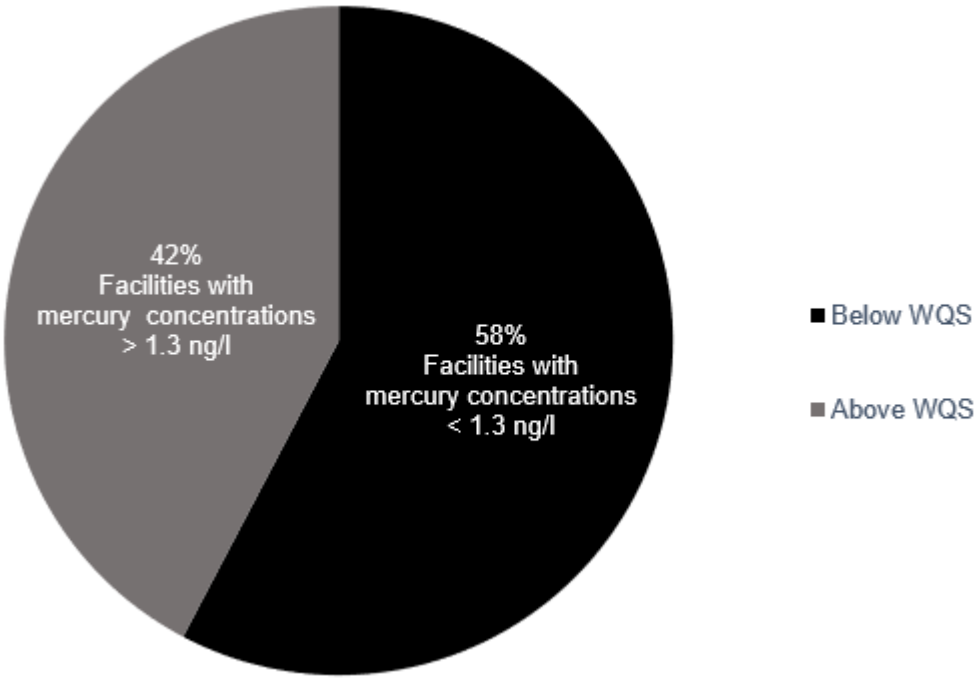

Figure 3: The pie graph shows the percentage of NPDES permitted facilities with long-term mean mercury effluent concentrations from August 2018 to December 2023. Of 227 facilities, 58 percent have long-term mean mercury effluent concentrations less than or equal to 1.3 ng/L and 42 percent are greater than 1.3 ng/L.

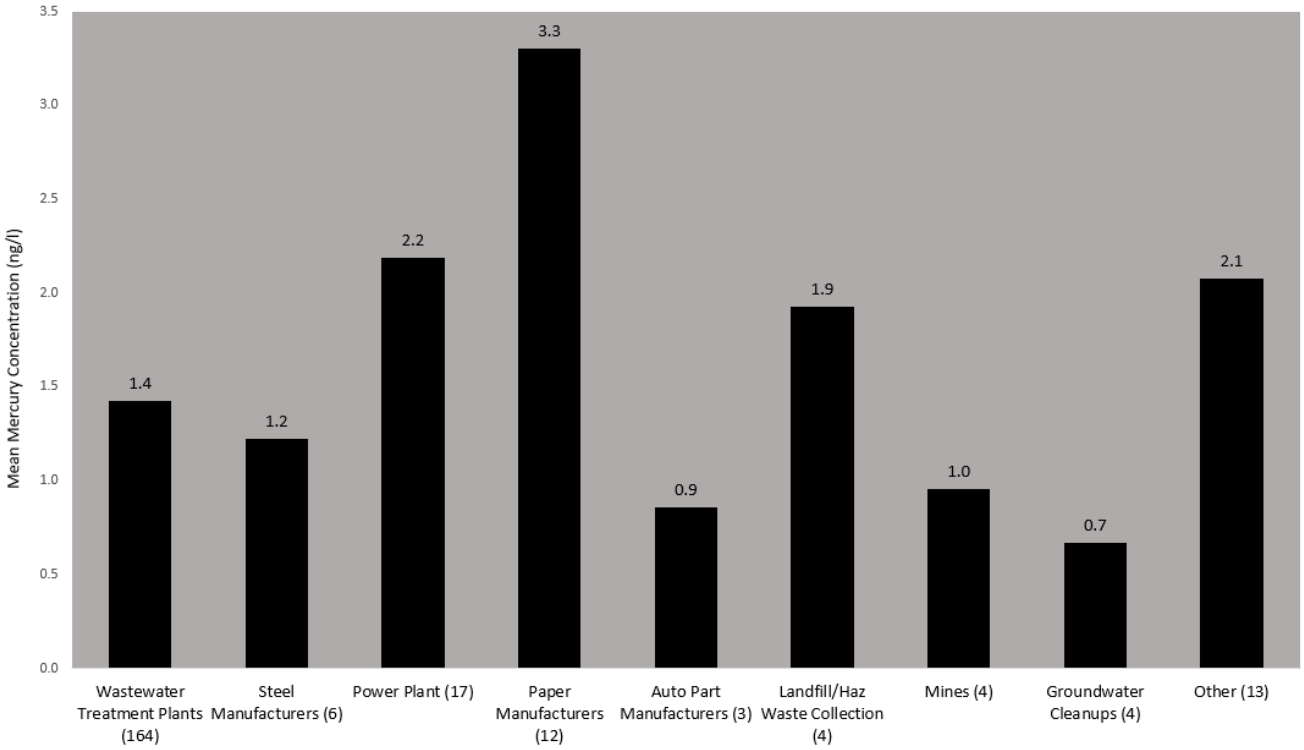

Figure 4: The bar graph shows long-term mean mercury effluent concentrations from August 2018 to December 2023 by sector. The sectors include WWTPs, steel manufacturers, power plants, paper manufacturers, auto parts manufactures, landfill and hazardous water collection, mines, groundwater cleanups, and other industrial dischargers.

Overall, under the current variance, Michigan continues to see reductions in mercury discharges. The reduction of mercury in facility effluent data supports Michigan's approach to use pollution prevention, source control, and other waste minimization programs to move Michigan toward future compliance with the mercury WQS of 1.3 ng/L.

Date range	Facilities with mean effluent concentrations below 1.3 ng/L	Facilities with mean effluent concentrations below 5.0 ng/L
January 2005 to January 2009	19%	84%
July 2009 to April 2014	37%	91%
August 2013 to July 2018	45%	95%
August 2018 to December 2023	58%	97%

While the NPDES Program continues to make great efforts utilizing the MDV LCA limits, the nonattainment of the mercury standard in surface waters cannot be remedied by reductions in NPDES permits and requires reductions in air deposition of mercury.

As a result of the MDV and PMP requirements, Michigan NPDES facilities show an overall reduction in mercury concentrations and more facilities with long-term effluent mercury concentration means approaching the WQS. The goal of the PMP is to maintain the effluent concentration of total mercury at or below 1.3 ng/L. The goal of 1.3 ng/L, developed to protect wildlife, will ensure this proposed MDV will not jeopardize the continued existence of endangered or threatened species listed under Section 4 of the Endangered Species Act. Template language used for including requirements for mercury in NPDES permits can be found in Attachment F.

Pollution Prevention and Reduction Efforts

A Michigan Statewide Mercury TMDL was approved by the USEPA in September 2018. The TMDL assumes that concentrations of mercury in the surface waters of the state will continue to decrease because of reductions in atmospheric mercury loads to Michigan waters, cleanup of legacy sources, voluntary activities, state and federal regulatory activities, and the NPDES Program. Additional details on these reductions are included in the Michigan Statewide Mercury TMDL (MDEQ, 2018). EGLE is working with facilities and laboratories on increasing data accuracy and reporting with the Mercury Sampling and Reporting Guidance for NPDES Permit Compliance (Attachment G).

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Attachment A

R323.1103 Variances

Rule 103.
(1) A variance may be granted from any water quality standard (WQS) that is the basis of a water quality-based effluent limitation in a national pollutant discharge elimination system (NPDES) permit as restricted by the following provisions:

a) A WQS variance applies only to the permittee or permittees requesting the variance and only to the pollutant or pollutants specified in the variance. The variance does not modify the water quality standards for the water body as a whole.

b) A variance shall not apply to new dischargers unless the proposed discharge is necessary to alleviate an imminent and substantial danger to the public health or welfare.

c) A WQS variance shall not be granted that would likely jeopardize the continued existence of any endangered or threatened species listed under section 4 of the endangered species act or result in the destruction or adverse modification of the species' critical habitat.

d) A WQS variance shall not be granted if the standard in the receiving water will be attained by implementing the treatment technology requirements under the clean water act of 1972, as amended, 33 U.S.C.§§301(b) and 306, and by the discharger implementing cost-effective and reasonable best management practices for nonpoint sources over which the discharger has control within the vicinity of the facility.

e) The duration of a WQS variance shall not exceed the term of the NPDES permit. If the time frame of the variance is the same as the permit term, then the variance shall stay in effect until the permit is reissued or revoked.

2) A variance may be granted if the permittee demonstrates to the Department that attaining the WQS is not feasible for any of the following reasons:

a) Naturally occurring pollutant concentrations prevent the attainment of the WQS.

b) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the WQS.

c) Human-caused conditions or sources of pollution prevent the attainment of the WQS and cannot be remedied or more environmental damage would occur in correcting the conditions or sources of pollution than would occur by leaving the conditions or sources in place.

d) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the WQS, and it is not feasible to restore the water body to its original condition or to operate the modification in a way that would result in the attainment of the WQS.

e) Physical conditions related to the natural features of the water body preclude attainment of WQS.

f) Controls more stringent than the treatment technology requirements in the clean water act of 1972, as amended, 33 U.S.C. §§301(b) and 306 would result in unreasonable economic effects on the discharger and affected communities.

3) In addition to the requirements of subrule (2) of this rule, a permittee shall do both of the following:

a) Show that the variance requested conforms to the antidegradation demonstration requirements of R 323.1098

b) Characterize the extent of any increased risk to human health and the environment associated with granting the variance compared with compliance with WQS without the variance in a way that enables the Department to conclude that the increased risk is consistent with the protection of the public health, safety, and welfare.

4) A permittee may request a variance when a NPDES permit application is submitted or during permit development. A variance request may also be submitted with a request for a permit modification. The variance request to the Department shall include the following information:

a) All relevant information which demonstrates that attaining the WQS is not feasible based on one or more of the conditions in subrule (2) of this rule.

b) All relevant information which demonstrates compliance with subrule (3) of this rule.

5) The variance request shall be available to the public for review during the public comment period on the draft NPDES permit. The preliminary decision regarding the variance shall be included in the public notice of the draft NPDES permit. The Department will notify the other Great Lakes states of the preliminary variance decision.

6) If the Department determines, based on the conditions of subrules (2) and (3) of this rule, that the variance request demonstrates that attaining the WQS is not feasible, then the Department shall authorize the variance through issuance of the NPDES permit. The permit shall contain all conditions needed to implement the variance, including, at a minimum, all of the following conditions:

a) That compliance with an effluent limitation that, at the time the variance is granted, represents the level currently achievable by the permittee. For an existing discharge, the effluent limitation shall be no less stringent than that achieved under the previous permit.

b) That reasonable progress be made in effluent quality toward attaining the water quality standards. If the variance is approved for any BCC, a pollutant minimization program shall be conducted consistent with the provisions in paragraphs (i) through (iv) of R 323.1213(d). The Department shall consider cost-effectiveness during the development and implementation of the pollutant minimization program.

c) That if the duration of a variance is shorter than the duration of a permit, then compliance with an effluent limitation that is sufficient to meet the underlying water quality standard shall be achieved when the variance expires.

7) The Department shall deny a variance request through action on the NPDES permit if a permittee fails to make the demonstrations required under subrules (2) and (3) of this rule.

8) A variance may be renewed, subject to the requirements of subrules (1) through (7) of this rule. As part of any renewal application, a permittee shall again demonstrate that attaining WQS is not feasible based on the requirements of subrules (2) and (3) of this rule. A permittee's application shall also contain information concerning the permittee's compliance with the conditions incorporated into the permittee's permit as part of the original variance pursuant to subrule (6) of this rule.

9) Notwithstanding the provision in subrule (1)(a) of this rule, the Department may grant multiple discharger variances. If the Department determines that a multiple discharger variance is necessary to address widespread WQS compliance issues, including the presence of ubiquitous pollutants or naturally high background levels of pollutants in a watershed, then the Department may waive the variance demonstration requirements in subrules (2), (3), and (4) of this rule. A permittee that is included in the multiple discharger variance will be subject to the permit requirements of subrule (6) of this rule if it is determined under R 323.1211 that there is reasonable potential for the pollutant to exceed a permit limitation developed under to R 323.1209.

Attachment B

Response Document for
Multiple Discharger Variance and Permitting Strategy
for Mercury Fiscal Years 2024 – 2029

A water quality standards variance requires a 45-day public notice of a public hearing and documents available to the public 30-days prior to the public hearing. The draft Multiple Discharger Variance public notice and information meeting and hearing were announced in EGLE's online Environmental Calendar beginning May 10, 2024. Notice of the public hearing and that the MDV would be available for comment was emailed to all NPDES permittees with mercury limits and/or monitoring requirements, stakeholder groups, federally recognized Tribes, and the other Great Lakes states' environmental agencies on May 10, 2024. The draft MDV public notice period began on May 28, 2024, and ended July 1, 2024. A virtual informational meeting and public hearing was held on June 27, 2024.

The comments and questions received were combined into major issues and a commenter number was assigned to individual comments to designate what entity submitted the comment (Appendix A). Comment letters received are included as Appendix B.

Comment 1: Of the three types of mercury seemed quite different, and it seems like there are different health impacts for them and it seems like they are from quite different things as well. I would encourage maybe more granular data, maybe not every time you test for mercury but understanding what types of mercury may add value going forward. (1) Are we looking at all types of mercury? (1)

EGLE Response: The Michigan WQS for mercury is 1.3 ng/l and is expressed as total mercury. According to USEPA Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry (EPA-821-R-02-019), Total mercury includes all brominemonochloride (BrCl)-oxidizable mercury forms and species found in an unfiltered aqueous solution. This includes, but is not limited to Hg(II), Hg(0), strongly organo-complexed Hg(II) compounds, adsorbed particulate Hg, and several tested covalently bound organo-mercurials (e.g. CH_3HgCL, $(CH_3)_2Hg$, and $C_6H_5HgOOCCH_3$). EGLE does not plan to make changes to the Variance based on this comment.

Comment 2: If mercury is spread in the air, is it measured in air quality? Can the contaminant enter the body by breathing it in? (1)

EGLE Response: The following link includes information related to mercury air deposition: Michigan.gov/EGLEMercury. Inhalation is the hazardous route of exposure of mercury vapor which is often associated with the inadequate cleanup of broken mercury-containing products. However, the main way people are exposed to mercury is

by eating fish and shellfish from mercury present in the tissue of these organisms. The Michigan Department of Health & Human Services (Michigan.gov/MDHHSMercury) and the USEPA (Mercury in Your Environment: Steps You Can Take | US EPA) have information on steps you can take to minimize your exposure to mercury. EGLE does not plan to make changes to the Variance based on this comment.

Comment 3: Have you had any reductions on the amount of mercury in fish tissue for this time period? (2)

EGLE Response: Long-term trend analysis (1990-2015) for fish tissue data indicates that mercury concentrations in fish from the Great Lakes, connecting channels, and inland waters of Michigan have generally remained static over that period. A detailed discussion of the specifics of this analysis is included in Michigan's Fish Contaminant Trend Summary (Bohr, 2019). EGLE does not plan to make changes to the Variance based on this comment.

Comment 4: Our mission is to ensure that the waters of the Great Lakes basin are healthy, public, and protected for all. We are concerned that the variance will undermine these goals. (3)

EGLE Response: Variances from a WQS are allowed under state and federal regulations. Michigan Rule 323.1103, Variances, of the Part 4 Rules, allows for a variance from a Michigan WQS that is the basis for a WQBEL in an NPDES permit where various conditions prevent the attainment of a WQS. Federal requirements under 40 CFR, Section 131.14, Water Quality Standards Variances, provides states, territories, and authorized tribes a mechanism to adopt WQS variances. Michigan is part of the Great Lakes system and, therefore, is not only subject to 40 CFR, Part 131, but also 40 CFR, Part 132, Water Quality Guidance for the Great Lakes System Procedure 2, Variances from Water Quality Standards for Point Sources. EGLE does not plan to make changes to the Variance based on this comment.

Comment 5: Analysis of available technologies for mercury reduction as part of evaluating the genuine need for the proposed variance. These comments focus narrowly on human health impacts and the inadequate survey provided with the draft of the new or developing technologies that may render possible lower emission and discharge levels than those envisioned by the draft. In the treatment technology review Michigan references documents from 2007 and 1997. In the last 17 years, new and more cost-effective treatment options have likely been developed. The state would do better to continue its efforts to reduce mercury emissions through the most modern technologies, rather than allowing outdated technologies to become an insurmountable obstacle to a constitutional directive. (3)

EGLE Response: Michigan has reviewed the available information regarding end-of-pipe treatment for mercury, including the effectiveness of the treatment and associated costs. EGLE agrees these references are older and that treatment technology should be advanced for treatment of mercury. However, based on our review, wide-scale cost

effective retrofitting treatment of wastewater dischargers to meet the WQS of 1.3 ng/L without introducing additional pollutants has not been widely developed or implemented. If the commentor is aware of such technologies, EGLE would be happy to review them. Utilizing treatment technology does not guarantee the WQS will be met. Source reduction and elimination is as or potentially more effective at reducing and eliminating discharges of mercury to surface waters. EGLE does not plan to make changes to the Variance based on this comment.

Comment 6: The variance only applies to facilities that existed before March 23, 1997, it stands to reason that all facilities built after that date must be implementing new technologies and treatments to meet the WQS.

EGLE Response: EGLE agrees that new facilities must meet the WQS of 1.3 ng/L. New facilities have been designed to meet the standard and could include site specific treatment as needed to meet this standard. EGLE does not plan to make changes to the Variance based on this comment.

Comment 7: Allowing excess mercury to contaminate our waterways is antithetical to Michigan's values, laws, environmental legacy – and even the tourism catchphrase on most of our license plates, Pure Michigan. (3)

EGLE Response: See Response to Comment 4.

Comment 8: The variance may not be justified.

EGLE Response: EGLE believes it has met the requirements of state and federal statute, rules, and regulations outlined in the Response to Comment 4.

Comment 9: There is nothing that actually requires permitted facilities to reduce their levels of mercury further. This is not flexibility in the face of complexity, but abdication.

EGLE Response: EGLE agrees the requirements included in the Variance from R 323.1213 of the Part 4 Rules, allows for flexibility. Facilities are required to develop site specific pollutant minimization programs to address their sources of mercury and reduce concentrations in the final effluent with a goal of meeting the WQS of 1.3 ng/L. Pollutant Minimization Programs require increased monitoring and personnel costs to implement. EGLE does not plan to make changes to the Variance based on this comment.

Appendix A

LIST OF COMMENTERS AND AFFILIATIONS

(1) Jaclyn Hulst – Unknown

(2) Elice Doucette – State of Minnesota

(3) Carrie Le Seur - For Love of Water (FLOW)

Appendix B

COMMENT LETTERS RECEIVED ON THE DRAFT MULTIPLE DISCHARGER VARIANCE AND PERMITTING STRATEGY FOR MERCURY DURING THE PUBLIC COMMENT PERIOD FROM MAY 28, 2024 TO JULY 1, 2024

FLOW
FOR LOVE OF WATER

Ensuring the Waters of the Great Lakes Basin Are Healthy, Public, and Protected for All

July 1, 2024

Glen Schmitt
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
P.O. Box 30273, Lansing, Michigan 48909-7773
SchmittG1@Michigan.gov
517-290-6424

Re: FLOW comments on EGLE's Draft Multiple Discharger Variance and Permitting Strategy for Mercury for Fiscal Years 2025-2029

Dear Mr. Schmitt:

On behalf of For Love of Water ("FLOW"), a Great Lakes advocacy center based in Traverse City, I offer the following comments regarding EGLE's Draft Multiple Discharger Variance and Permitting Strategy for Mercury for Fiscal Years 2025-2029. Our mission is to ensure that the waters of the Great Lakes basin are healthy, public, and protected for all. We are concerned that the variance will undermine these goals.

Summary

Michigan sits at the heart of the most extraordinary and valuable fresh surface water system in the world, a magnificent natural endowment that defines and informs our state's character, values, and geography. Surveys consistently confirm the overwhelming bipartisan appreciation and concern Michigan citizens share for the protection of our waters for all purposes, but particularly full body contact recreation and drinking water.

Part 31 of NREPA mandates that the "department shall protect and conserve the water resources of the state and shall have control of the pollution of surface or underground waters of the state and the Great Lakes." MCL 324.3103. This important responsibility must be aided by the most up-to-date science and technology through the input of well-informed environmental professionals dedicated to overseeing the protection of our water resources. FLOW therefore urges closer analysis of available technologies for mercury reduction as part of evaluating the genuine need for the proposed variance.

The Water Quality Standard ("WQS") variance proposed for 2025-2029 will allow facilities to discharge mercury in excess of the existing limits, 1.3 nanograms per liter (ng/L) for the protection of wildlife and 1.8 ng/L for the protection of human health. Mercury is a neurotoxicant that, at high levels of exposure, is known to cause a variety of human health issues, especially impacting children and fetuses. Some dangers of mercury exposure include brain damage, developmental issues, lung damage, cardiovascular disease, kidney damage, and central nervous system damage. Elevated mercury levels in wildlife can lead to reproductive

failure, weight loss, progressive weakening, and death. Bioaccumulation of mercury in the environment is concerning, and all 50 states have advisories for freshwater fish consumption due to mercury contamination.

Discussion

Michigan has a great deal to protect through mindful regulation. Our Great Lakes hold 95 percent of all fresh surface waters in the United States. Our biologically abundant watersheds, coastal dunes, and distinct ecosystems are unique on the planet. Science affirms that our inland lakes, rivers, streams, and wetlands are an integrated, interconnected, mutually dependent hydrologic system providing priceless services and benefits to all citizens. Michigan's natural resources are magnificent, unparalleled, and sublime – a natural treasure demanding extraordinary legislative and regulatory safeguarding. Allowing excess mercury to contaminate our waterways is antithetical to Michigan's values, laws, environmental legacy – and even the tourism catchphrase on most of our license plates, Pure Michigan.

These comments focus narrowly on human health impacts and the inadequate survey provided with the draft of new or developing technologies that may render possible lower emission and discharge levels than those envisioned by the draft.

EGLE'S Reasons for the Proposed Variance

As FLOW understands them, EGLE's reasons for proposing the variance, together with FLOW's comments, are the following:

1. **Efforts under previous multiple discharger variances ("MDVs") have been successful in reducing mercury levels.**

The introduction of the draft MDV states, "The information included in the proposed MDV supports the findings that efforts under previous MDVs have been successful in reducing mercury to the environment[.]" The draft variance later discusses the uncertainty with both treatment and success from the Pollutant Minimization Program ("PMP").

Though there is data in this proposed variance that shows gradual reduction in mercury levels in recent decades, the draft provides no data that demonstrates causation. At most, a correlation appears to exist. Permitted facilities continue to discharge mercury in excess of existing limits. In data from 2018-2023, 42% of the facilities with mercury limits or monitoring requirements "have long-term arithmetic means above the WQS of 1.3 ng/L."

One of the more concerning items from the data on permitted facilities is the existence of a paper plant with calculated mean effluent concentrations greater than 10 ng/L. EGLE does not state what the actual effluent concentration is, but looking at the bar graph on page 14, it appears to be around 14.5 ng/L, more than an order of magnitude higher than the level considered safe for wildlife. There are also six facilities discharging mercury at long-term mean concentrations

between 5 ng/L and 10 ng/L. Under this variance, these facilities discharging mercury at extremely high levels will be allowed to continue.

2. **There is currently no cost-effective treatment for reducing mercury concentrations to meet the limit of 1.3 ng/L.**

The draft variance says, "Michigan believes end-of-pipe controls are not feasible and source reduction and elimination are the best options for reducing mercury in the effluent of Michigan NPDES facilities." However, under the section of Highest Attainable Conditions, which describes treatment options, the references are from 2007 and 1997. Specifically, EGLE said, "While these treatments may offer reductions in mercury, there is no single treatment that has been proven to reliably meet the mercury WQS without environmental cost (USEPA, 2007)."

More research is needed. In the last 17 years, new and more cost effective treatment options have likely been developed. Further, because this variance only applies to facilities that existed before March 23, 1997, it stands to reason that all facilities built after that date must be implementing new technologies and treatments to meet the WQS. Finally, the graph on page 16 breaks down the mercury levels by industry. Steel manufacturers, auto parts manufacturers, mines, and groundwater cleanups have all managed to keep their mercury discharge levels below the limit. A discussion of how they achieve this outcome would be enlightening.

3. **Human-caused mercury in the atmosphere is the major source of mercury to Michigan surface waters.**

The data EGLE provides from 2018 states that atmospheric mercury deposition in Michigan accounts for 98.6 percent of the mercury load to Michigan surface waters, while NPDES discharges account for 1.4 percent. In-state sources make up 7.8 percent of the state's atmospheric mercury load, which is 80% anthropogenic. In other words, 9.75% of Michigan's total *anthropogenic* mercury deposition comes from in-state sources. The law requires controls on atmospheric mercury deposition, which of course falls to earth, and on mercury discharges directly to state waters as well. Although EGLE asserts that surface water mercury numbers are dropping due to the success of NPDES permitting, the variance document offers no evidence that this is the case. It is possible, for example, that decreases in atmospheric deposition, not permitted NPDES discharges under a variance, are responsible for the lower surface water mercury numbers. If this is the case, the variance may not be justified.

FLOW's Other Concerns

While acknowledging the increasing marginal costs and necessary tradeoffs of tighter mercury standards, the variance does not drive any ultimate reduction in mercury emissions or discharges. The variance terms listed on page 11 can be summarized as follows:

- an annual review,
- semiannual monitoring of potential sources of mercury,
- quarterly monitoring,
- a commitment to use cost-effective controls when mercury is discovered, and
- an annual status report.

Though those steps might be useful, there is nothing that actually requires permitted facilities to reduce their levels of mercury further. This is not flexibility in the face of complexity, but abdication.

Pages 4 and 5 briefly discuss designated uses and how the 2024 Integrated Report identifies 16,975 miles of rivers and streams, 464,329 acres of inland lakes and reservoirs, all of the Great Lakes open water and shorelines, and all of the connecting channels in Michigan as not supporting at least one designated use due to elevated concentrations of mercury.

"Human exposure through consumption of fish is the principal health concern with mercury in the environment" (page 5), yet "EGLE does not use the MDHHS meal consumption guidelines" (page 6). Michigan has studied fish tissue data for mercury for decades, and first issued a statewide fish consumption advisory in 1988. The health department developed a range of fish consumption screening values for mercury based on meal categories. These guidelines are protective for everyone, including vulnerable adults with health conditions and unborn and young children. The screening values for the meal consumption categories range from 0.07 mg/kg to 2.2 mg/kg. In all 3,007 fish filet samples collected between 2013-2022, mercury was present. During that decade of sampling, 82 percent of the samples exceeded the health department's lowest fish consumption screening value, 0.07 mg/kg.

In sum, the variance focuses on facilities and permittees, but the variance does not in its conclusion and reasoning focus on the already impaired streams and levels for fish consumption, acknowledged as the principal health concern.

Pollution Control Under Michigan Law

EGLE has a non-discretionary duty to protect Michigan waters from pollution. Part 31, Section 3103(1) of the Natural Resources and Environmental Protection Act ("NREPA") mandates:

> The department shall protect and conserve the water resources of the state and shall have control of the pollution of surface or underground waters of the state and the Great Lakes, which are or may be affected by waste disposal of any person.[1]

Part 31 also mandates that EGLE, when considering and issuing permits, shall prevent water pollution from any substance that may affect the quality of the waters of Michigan:

[1] NREPA, Part 31, Sec. 3103(1), MCL 324.3103(1).

> The department shall issue permits that will assure compliance with state standards to regulate municipal, industrial, and commercial discharges or storage of any substance that may affect the quality of the waters of the state.
> * * *
> The department shall take all appropriate steps to prevent any pollution the department considers to be unreasonable and against public interest in view of the existing conditions in any lake, river, stream, or other waters of the state.[2]

Fish rendered inedible in a large proportion of state waters are prima facie evidence of a level of pollution that is "unreasonable and against public interest".

Michigan Administrative Code Rule 323.2137 requires:

> When applicable, a permit issued by the department shall contain terms and conditions deemed necessary by the department to ensure compliance with … effluent standards and limitations…[3]

Part 17, NREPA (the Michigan Environmental Protection Act, hereafter "MEPA") imposes a duty to prevent and minimize likely degradation of the water and natural resources or public trust in those resources, as acknowledged by the Michigan Supreme Court:

> (MEPA) marks the Legislature's response to our constitutional commitment to the 'conservation and development of the natural resources of the state . . ..' Const.1963, art. 4, s 52…. But the (MEPA) does more than give standing to the public and grant equitable powers to the Circuit Courts, it also imposes a duty on individuals and organizations both in the public and private sectors to prevent or minimize degradation of the environment which is caused or is likely to be caused by their activities. [4]

Michigan's Constitution also does not allow state legislators or regulators to neglect their environmental protection duties, pursuant to Art. 4, Sec. 52:

> The conservation and development of the natural resources of the state are hereby declared to be of paramount public concern in the interest of the health, safety and general welfare of the people. The legislature shall provide for the protection of the air, water and other natural resources of the state from pollution, impairment and destruction.

As noted in describing the duties imposed on the EGLE by the MEPA, the enactment of environmental laws, such as the MEPA and Part 31, "marks the Legislature's response to our constitutional commitment" to protect the air, water, and natural resources from pollution.[5] In 1974, the Michigan Supreme Court expressly held that Article 4, section 42 of our constitution

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[2] MCL 324.3106.
[3] Mich Admin. Code, R 323.2137.
[4] Ray v Mason County Drain Comm'r, 393 Mich 294, 304-306 (1975). Michigan Constitution art. 4 sec. 52 is addressed in the next section, immediately below.
[5] Id., at 304.

places a mandatory duty on the legislature to enact laws that fulfill this constitutional commitment.

> The threshold question before us is whether the second sentence of art. 4, s 52, prescribes a *mandatory* duty or whether it is merely *declaratory*. Utilizing the primary construction rule of 'common understanding, 'it is clear that the sentence must be read as a mandatory command to the legislature.[6] …Thus, we hold that art. 4, s 52, created a *mandatory* duty on the part of the legislature to act to provide for the protection of the air, water and other natural resources of the state from pollution, impairment and destruction.
>
> Given the mandatory legislative duty imposed by art. 4, s 52…. (l)egislation need not specifically refer to other legislation it affects to be read *in pari materia*[7] (citations omitted). The Legislature is only enjoined to enact legislation protecting natural resources from pollution, impairment and destruction. The responsive action of the Legislature can be in specific provisions, in pertinent enactments, or in the form of generally applicable legislation….[8]

Complementing this constitutional mandate is the Public Trust Doctrine, embodying a set of foundational principles, long recognized by Michigan law, that require proper stewardship of Great Lakes resources. The doctrine creates a fiduciary responsibility of stewardship on the part of government for the preservation of these resources and for the benefit of the public, creating further grounds to challenge MCL 324.3103(2).

In conclusion, Michiganders deserve to be protected by current science and technology, and they have the right to the full protection of the federal Clean Water Act. The state would do better to continue its efforts to reduce mercury emissions through the most modern control technologies, rather than allowing outdated technologies to become an insurmountable obstacle to a constitutional directive.

Recommendations

As threats to Michigan's waters and the people, animals, and biota that rely on them evolve, state agencies must be nimble to respond appropriately. To protect Michigan's precious waters from unnecessary mercury pollution, FLOW recommends a more thorough evaluation of alternatives.

Sincerely yours,

Carrie La Seur
Carrie La Seur, Ph.D., J.D.
Legal Director
For Love of Water

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[6] Petition of Highway US-24, in Bloomfield Twp., Oakland Cnty., 392 Mich. 159, 179–80 (1974), emphasis in original.
[7] Meaning on the same subject or matter or in a similar case. NOTE: It is a doctrine in statutory construction that statutes that are *in pari materia* must be construed together. Merriam Webster Legal Dictionary.
[8] Id., at 182-83.

Attachment C

DEQ	**WATER RESOURCES DIVISION POLICY AND PROCEDURE**		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: May 4, 2011 Revised Date: Reformatted Date: November 19, 2013	Subject: Part 31 - Calculation of Level Currently Achievable for Mercury in Proposed National Pollutant Discharge Elimination System Permits		Category: X Internal/Administrative ☐ External/Non-Interpretive ☐ External/Interpretive
	Program: Surface Water Quality Program		
	Number: WRD-004	Page: 1 of 4	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

Note: This policy and procedure was previously numbered as WB-016.

ISSUE:

This policy establishes the process that the Water Resources Division (WRD) will use to develop discharge-specific levels currently achievable (LCA) for mercury to be included in National Pollutant Discharge Elimination System (NPDES) permits when a variance will be authorized through issuance of the permit.

AUTHORITY:

Rule 1103, Variances, of the Part 4 Rules, Water Quality Standards, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

DEFINITIONS:

"Level Currently Achievable (LCA)" – the effluent limitation (for mercury) that a permittee is able to meet at the time the variance is granted.

POLICY:

<u>Discharge-Specific LCA Calculation Approach</u>

1. Calculate the average projected effluent quality (PEQ) as follows:

a. Ten or more representative data points: Use the method described in R 323.1211(3)(a). The value of n as defined in R 323.1211(3)(a) is determined by the mercury monitoring frequency and is not limited to 1 or 30. Permittees are most often required to monitor for mercury quarterly (4 samples per year) or monthly (12 samples per year). These samples are used to calculate a 12-month rolling average (TMRAV) for computing an LCA. To calculate the 95th percentile of a distribution of averages of 4 mercury concentrations in the TMRAV, use n = 4. For a distribution of averages of 12 mercury concentrations, use n = 12.

b. Fewer than 10 representative data: Use the method described in R 323.1211(3)(b).

In both cases, round the PEQ up to the next whole number. If the average PEQ is 10 nanograms per liter (ng/l) or less, then the PEQ is the LCA. If the average PEQ is greater than 10 ng/l, then proceed to Step 2.

Based on experience to date, available data indicates that the vast majority of mercury discharges will fall into this category for LCA calculation.

2. If the PEQ value calculated in Step 1 is greater than 10 ng/l, then review the number of data points available for the facility.

a. If data representative of a 12-month period are available to calculate at least 1 TMRAV, compute the LCA using the following approach:

i. If there are 10 or more TMRAVs, then calculate the PEQ using the TMRAV data points following the reasonable potential approach described in R 323.1211(3)(a). Compare the maximum PEQ to the highest TMRAV. (The maximum PEQ is used because the calculation process uses averages; e.g., TMRAVs.) This approach may result in a PEQ lower than the highest TMRAV; therefore, the LCA is the higher of the 2 values. Round the LCA up to the next whole number.

ii. If there are less than 10 TMRAVs, then calculate the LCA using the individual data points following the reasonable potential calculation process described in R 323.1211(3)(b). Compare the average PEQ to each TMRAV. (The average PEQ is used because the calculation process uses individual, rather than TMRAV, data points.) The LCA is the higher of the PEQ or highest TMRAV, rounded up to the next whole number.

b. If data representative of a 12-month period is not available to calculate at least 1 TMRAV, then compute the LCA using the following approach:

i. If each value is less than 10 ng/l, then set the LCA at 10 ng/l. This value will function as a “cap” because the vast majority of facilities in Michigan are able to meet this level. The 10 ng/l cap will prevent unnecessarily high LCAs that may result from the R 323.1211(3)(b) reasonable potential approach for data sets with less than 10 individual data points.

ii. If any value is equal to or greater than 10 ng/l, then the DEQ and/or the permittee will develop the LCA using site-specific considerations, including evaluation of the raw data, facility treatment type, any mercury issues in the receiving water (e.g., fish consumption advisory), and facility and receiving water flows. Available information and experience to date indicate that this situation will be very rare. The LCA developed under this step will need to be submitted to the United States Environmental Protection Agency (USEPA) for approval prior to NPDES permit issuance.

Other Considerations

The DEQ and NPDES permittees are not bound by this procedure, as there may be situations where other LCAs are appropriate. However, it is the DEQ's intent to follow this procedure in most instances. LCAs derived according to Steps 1., 2.a., and 2.b.i. have the approval of the USEPA without submitting each LCA for approval.

Specific situations may arise (for example, upon request by the permittee) when the DEQ would include an LCA in a permit that is lower than what would result from this process. In addition, permittees may develop and propose an LCA that is different from what would result from this process, which the DEQ would evaluate on a case-by-case basis. If the DEQ determines the LCA to be appropriate, we would submit the proposed LCA to the USEPA for approval on a case-by-case basis.

Each LCA included in a permit will be subject to notice and comment during the public comment period on that permit.

PROCEDURES:

Step	Who	Does What
1.	Permits Section Staff	Calculate discharge-specific LCA as outlined under "Policy," Steps 1., 2.a., and 2.b.i., and in consideration of applicable provisions of Rule 1103, submit proposed LCA to the permit writer.
2.	Permit Writer	Follow standard process for NPDES permit issuance/denial/amendment.

OR

Step	Who	Does What
1.	Permittee or WRD staff	Propose alternative method for calculating discharge-specific LCA as outlined under "Policy," Step 2.b.ii., or Other Considerations.

Step	Who	Does What
2.	Permits Section Staff	Select alternative method and calculate discharge-specific LCA according to alternative method and in consideration of applicable provisions of Rule 1103; draft memo to the permit writer including the proposed LCA and an explanation of and justification for the alternative calculation method.
3.	Permit Writer	Submit proposed LCA and an explanation of and justification for the alternative calculation method to the WRD treatment technology expert(s) for consideration.
4.	WRD Treatment Technology Expert(s)	Provides feedback to the permit writer on treatment issues related to the proposed LCA.
5.	Permits Section Staff	Revise proposed LCA as appropriate; submit proposed LCA and an explanation of and justification for the alternative calculation method, including any treatment technology issues to the permit writer.
6.	Permits Section Chief	When agrees with LCA, seeks USEPA review and approval of LCA.
7.	Permit Writer	Follows standard process for NPDES permit issuance/denial/amendment; permit issuance signifies approval of LCA.

DIVISION CHIEF APPROVAL:

William Creal, Chief
Water Resources Division

Attachment D

WATER BUREAU
POLICY AND PROCEDURES

NUMBER:	**WB-011**		
SUBJECT:	**PROCEDURE FOR REVIEW OF POLLUTANT MINIMIZATION PROGRAMS AND ANNUAL REPORTS**		
EFFECTIVE DATE:	**OCTOBER 15, 2007**	**PAGE:**	**1 OF 10**
REVISION DATE:	**(5-YEAR REVIEW FREQUENCY)**		

ISSUE:
Pollutant Minimization Programs (PMP) as described herein are designed to identify and remove or reduce sources of toxic substances in order to meet a water quality-based effluent limit (WQBEL). Multiple sections may be involved in the review of PMPs and annual reports required by the PMP. This procedure describes the review process, the responsibilities of each organizational unit involved in the review, and the decision-making process.

AUTHORITY:

Part 31 of 451, specifically 324.3112
Part 21 Rules
Part 8 Rules, Rule 1213
Part 4 Rules, Rule 1103

DEFINITIONS:
"**Action Level**" means a specific level in a progressive range of values that, when reached, initiates a specific action or actions.

"**Bioaccumulative Chemical of Concern**" (BCC) means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1,000 derived after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation.

"**Quantification Level**" (QL) means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant (R 323.1205 Definitions; M to Z). (NOTE: The term "Level of Quantification" does not have a specific definition and should not be used at any point during a National Pollutant Discharge Elimination System (NPDES) process/procedure to describe a minimum concentration that can be quantified or detected.)

"**Variance**" is defined as described in Part 4, Water Quality Standards Rule 323.1103. The specific reference in R 1103 that pertains to PMPs is listed in R 1103(6)(b) and states: "That

reasonable progress be made in effluent quality toward attaining the water quality standards. If the variance is approved for any BCC, a pollutant minimization program shall be conducted consistent with the provisions in paragraphs (i) through (iv) of R 323.1213(d). The department shall consider cost-effectiveness during the development and implementation of the pollutant minimization program."

"**Water Quality-Based Effluent Limit**" (WQBEL) means an effluent limit developed for an NPDES permit that will ensure that the level of water quality to be achieved by the point source complies with all applicable water quality standards.

POLICY:

Introduction

PMPs, as described herein, are designed to identify and remove or reduce sources of toxic substances in order to meet a WQBEL. Described in the Part 8 Rules, Rule 1213(1)(d), these special conditions are part of specific NPDES permits or an equivalent document and require the permittee to "…develop and conduct a PMP for each toxic substance with a WQBEL below the quantification limit…" Part (d) goes on to say that "The goal of the PMP shall be to maintain the effluent concentration of the toxic substance at or below the WQBEL." A PMP is also required as a permit condition when the Water Bureau (WB) authorizes a variance from a water quality standard for a BCC that is the basis for a WQBEL in accordance with Rule 1103 of the Part 4 Rules.

According to Rule 1213, the permittee is charged with developing the PMP which, according to Part (1)(d), "… describes the control strategy *designed to proceed toward achievement of the goal*…" (emphasis added). Once this plan is approved by the WB district supervisor (either the district supervisor or the assistant district supervisor), the permittee is required to implement the PMP and provide annual updates that document progress toward achieving the goal as described in Part (1)(d).

Because each permitted facility and discharge is unique, the specifics of individual PMPs may vary greatly, containing site-specific strategies necessary to reach the intended goal. Rule 1213 requires that all PMPs be composed of the same fundamental components:

- An annual review and semiannual monitoring of potential sources of the toxic substance.
- Quarterly monitoring for the toxic substance in the influent to the wastewater treatment system.
- A commitment by the permittee that reasonable cost-effective control measures will be implemented when sources of the toxic substance are discovered.
- An annual status report.

The annual status report is sent to the appropriate district supervisor and includes:

- All minimization program monitoring results for the previous year.
- A list of potential sources of the toxic substance.
- A summary of all *actions taken* (emphasis added) to reduce or eliminate the identified sources of the toxic substances.

Rule 1213 allows the department to modify the requirements listed above for the PMP and annual status report on a case-by-case basis. If this is done, the department's decision will be captured in the issued permit.

The permit may also contain requirements for fish tissue monitoring or other biouptake sampling, or both, or facility sludge monitoring to assess the progress of the PMP.

As stated above, PMPs are included in NPDES permits when the WQBEL for a toxic substance is below the QL, or when a variance has been granted for a BCC. An example of each of these situations is given below:

- Polychlorinated biphenyls (PCBs) are a class of pollutants that have a QL well above the WQBEL. A PMP will be required in accordance with Rule 1213 when a facility has been identified as potentially discharging PCBs above the WQBEL.
- Mercury (a BCC) has a QL that is below the WQBEL. When a variance has been authorized through issuance of a permit, then a PMP will be required in the permit in accordance with Rule 1103.

When a PMP is included in the issued NPDES permit, a date (or deadline) may also be included by which time the permittee must submit a PMP to the appropriate district supervisor, if the PMP has not already been approved. Upon receipt of the draft PMP, the district compliance staff will distribute the proposed document for review in accordance with the PMP Review and Approval Process section below. Each entity will then have an opportunity to provide comments related to the expertise of that organizational unit. These comments are then communicated back to the district compliance person for review and ultimately to the district supervisor who has the final approval authority.

PMP – Review Criteria for Approval

As outlined in Rule 1213, the goal of any PMP is to maintain the effluent concentration of a specific toxic substance at or below the WQBEL. Examples of two generic PMPs that contain the specific elements described in Rule 1213 are given in Appendix A. These elements include:

- **An annual review and semiannual monitoring of potential sources of the toxic substance**. PMPs for Publicly Owned Treatment Works (POTW) may include a list of commonly known potential sources (such as hospitals and dentist offices), as well as a specific business and industry, while PMPs involving industrial dischargers should include review of the potential sources from internal plant processes or other areas that may contribute contaminated water to the treatment system. The initial PMP may not identify sources but instead may only indicate that sources will be identified. The annual update will then include what sources they have identified.

Monitoring of potential sources does not mean all potential sources have to be monitored semiannually. In determining which sources to sample, consideration should be given to the

number of sources, magnitude of pollutant load of each source, resources of the regulated entity, etc. Main trunk lines of the POTW collection system may be sampled and used to determine where to focus efforts. Decisions and the reasoning to support decisions not to sample all potential sources should be documented in the annual report.

In some cases, it may be necessary in a PMP to aggregate potential sources of a pollutant and subsample within the aggregation. An exception to this would be those facilities determined to have the potential to discharge the pollutant that are considered Significant Industrial Users (SIU) under an industrial pretreatment program (IPP). Semiannual self-monitoring and annual POTW monitoring is required for all SIUs.

Avenues other than direct sampling of each potential source may be more productive toward eliminating wide-spread sources, such as information and education campaigns or developing a local ordinance that requires specific action (such as controlling wastes from dentist offices).

- **Quarterly monitoring for the toxic substances in the influent to wastewater treatment systems (for systems with wastewater treatment systems).**

- **A commitment by the permittee that reasonable cost-effective control measures will be implemented when sources of the toxic substances are discovered**. Factors to be considered shall include all of the following:

1. Significance of sources.
2. Economic considerations.
3. Technical and treatability considerations.

The PMP should specify approved analytical methods with an appropriate QL. PMPs for mercury will generally specify United States Environmental Protection Agency Method 1631 for final effluent and influent testing. Other approved methods for mercury may be appropriate for up-the-pipe sampling as the permittee screens for sources of mercury to their system. If analytical methods with higher QLs do not result in progress, then methods with lower QLs should be used.

The permit requires the permittee to submit a PMP that is designed to reduce effluent concentrations of the pollutant toward the goal of achieving the WQBEL. The permit also requires the permittee to implement reasonable cost-effective measures and to report on all actions taken to reduce or eliminate identified sources. Although not specifically required by the permit, the use of pollutant-specific action levels is one tool that can be used to accomplish this. The permittee may propose other methods that meet these permit requirements.

A pollutant-specific action level invokes a specific response and is clearly identified in the PMP in conjunction with other monitoring activity by the permittee. This specific response should move the permittee towards the identification and reduction or elimination of the source of the toxic pollutant. Action levels may need to be initially adjusted upward or downward based on actual sampling results. It is expected that as the PMP progresses, action levels would drop.

Reporting data without committing to use the data to help identify and reduce or eliminate a pollutant source may not necessarily move the permittee towards the PMP goal. Therefore, it is important that the reviewer continually question how individual PMP activities or monitoring data are used to identify and reduce or eliminate a pollutant source.

Once the review process is complete, comments and recommendations are submitted to the appropriate district supervisor. It is the responsibility of the district to review the comments, require changes or the correction of deficiencies where appropriate, and eventually approve each PMP. Once approved, the permittee is required to implement the PMP as part of their NPDES permit. Significant changes to the original program must be submitted by the permittee to the appropriate district supervisor for approval.

When reviewing new PMPs, if the minimum requirements specified by Rule 1213 for a PMP are met, the PMP should be approved to minimize delays in requiring the permittee to implement the PMP. Approval can be unconditional or it can be approved with comments. If approved with comments because of minor deficiencies, inform the permittee of these deficiencies and indicate that they should be addressed. If the permittee fails to address these issues and fails to demonstrate adequate progress over the course of the permit, other avenues are available to force the permittee to address these deficiencies, such as adding specific language in the permit to address the deficiencies or taking enforcement action for failure of the permittee to move toward the goal of achieving the WQBEL.

Revisions to the PMP may be required as a facility makes progress in identifying and removing/minimizing sources of the pollutant. Approval by the district supervisor is required prior to implementation of **significant** PMP revisions. Review of proposed revisions may include input from Surface Water Assessment Section (SWAS) and IPP staff as appropriate.

PMP - Annual Report Review

Annual PMP reports are submitted to the appropriate district supervisor within one year after the PMP is approved (by the date specified in the permit). The annual report is intended to describe the status (progress that may include successes or failures) of the PMP. The district compliance person will obtain input from others as needed in accordance with the PMP Review and Approval Process section. All annual reports must contain the following, pursuant to Rule 1213:

A. **All PMP monitoring Results for the previous year..** All data that were collected during the past year (influent, effluent, and data collected from potential sources) should be included with the annual report. Sampling dates, method of analysis, QL used, proper units, and the laboratory name should all be clearly identified for review purposes. A map of the collection system may be used to show sampling locations and aid in the explanation of actions taken by the permittee.

B. **A list of potential sources of the toxic substance**. This list may include the potential sources that were identified by the program, as well as a list of new potential

sources that have been identified as a result of monitoring data. Decisions and the reasoning to support decisions not to sample all potential sources should be documented in the annual report.

C. **A summary of <u>all</u> actions taken to reduce or eliminate the identified sources of toxic substances (emphasis added).** This may include the actions that are in response to monitoring results as described above and/or additional actions that do not include monitoring that have occurred and are designed to move toward the goal. In other words, the report should identify what they found and what they are now doing because of what they found. The statement, "…will continue to monitor…," with no other action indicated is not acceptable. The permittee should propose some action that moves the permittee toward the PMP goal, whether it be sampling at other locations or times, a change to the analytical methods to one with a lower QL, etc.

In some cases, the PMP annual report requirement may be largely fulfilled by the permittee using a format that is similar to the example provided in Appendix B. Additional information can be provided. While it may be possible for some permittees to use this report format verbatim, district compliance staff are encouraged to use this report example as a guide to help each permittee meet the requirements of the PMP annual report.

It is important to note that as a facility progresses toward locating and removing/minimizing sources of contamination, deviations from the original program will occur. This is to be expected as monitoring data may lead to the need for additional sampling or remedial activities that were not anticipated in the original program. Proposed changes to the PMP may be included in a summary section of the annual report or as a timely communication from the permittee to the district supervisor, separate from the annual PMP report. Significant changes require approval of the district supervisor prior to implementation.

As stated above, it is the responsibility of the district compliance person to conduct the review of the PMP annual report. Review of the annual report may include input from SWAS and IPP staff as appropriate. Checklists have been developed to standardize the review process and clearly identify roles and responsibilities in the review process. The SWAS review checklists are provided in Appendix C. District review checklists are provided in Appendix D.

<u>REFERENCE TO BUREAU PROGRAMS:</u>

Each policy shall indicate a reference to the programs impacted by the policy. The programs selected shall be from the list below.

Bureau programs:

NPDES (non-storm water) Program	Storm Water Program (NPDES)

<u>METHOD OF DISTRIBUTION:</u>

Intranet, Procedure Manuals

PROCEDURE: **PMP Review and Approval Process**

The PMP review and approval process below starts after issuance of the NPDES permit:

Responsibility	**Action**
Permittee	1. The permittee drafts (or potentially modifies) and submits a PMP to the Water Bureau (WB) district supervisor within the time frame specified in their NPDES permit.
District compliance staff	2. District staff determine the level of review and whether input from other organizational units is necessary. In addition to a review by the district compliance staff, all new PMPs should be reviewed by the SWAS, and by the district IPP staff if the permittee is a POTW. Revisions to Mercury PMPs should be reviewed in accordance with Table 1 below. Revisions to other types of PMPs (those with WQBELs below the QL) should be reviewed in accordance with the following: o **When effluent concentration is reported above quantification**: The permittee is out of compliance with the permit. PMP revisions require full review by the district and SWAS (and Permits Section [PS] if it involves treatment technology issues or limits). o **When effluent concentration is reported below quantification:** The permittee is in compliance with the permit if they are also implementing their approved PMP. PMP revisions require limited review by district staff to make sure it appears appropriate and the permittee is not backing off the minimization program.
District compliance staff (and if appropriate	3. If appropriate, district compliance staff distributes the PMP for comment. Consider distributing the PMP submittal to other divisions or agencies when remediation or other issues may

SWAS staff, IPP staff, etc.)		be relevant to the PMP. Each participating entity has 45 days to submit their respective PMP review comments back to the district compliance person.
District compliance staff	4.	The district compliance staff completes their review on the facility's PMP and the comments provided by others, and provides recommendations to the district supervisor.
District supervisor or assistant district supervisor	5.	Within 60 days of receipt of the PMP, the district supervisor determines whether the PMP is approvable or inadequate. a. If the district supervisor determines that the PMP is inadequate because it does not meet minimum requirements, a letter is sent informing the permittee of the program's inadequacies. The permittee must then resubmit an approvable PMP, generally no more than 60 days from the date of the letter. District staff should use an enforcement response for grossly deficient PMPs or when permittees refuse to correct the PMP to meet minimum requirements. District staff again coordinate WB review of resubmitted PMPs as necessary. **ALL REASONABLE ATTEMPTS SHOULD BE MADE TO APPROVE A PMP IN A TIMELY MANNER SO THAT THE PERMITTEE IS REQUIRED TO IMPLEMENT THE PMP. THIS MAY RESULT IN PMPS BEING APPROVED THAT ARE LESS THAN OPTIMAL BUT THAT MEET THE MINIMUM REQUIREMENTS.** b. If the PMP is determined to be acceptable, the district supervisor sends the permittee a PMP approval letter.
Permittee	6.	Once a PMP is approved, the permittee implements the PMP. The permittee submits an annual PMP report to the District Supervisor.
District compliance staff (and if appropriate SWAS staff, IPP staff, etc.)	7.	District staff determines the level of review and whether input from other organizational units is necessary. Annual reports for mercury PMPs should be reviewed in accordance with Table 1 below. Annual reports for other types of PMPs (those with WQBELs below the QL) should be reviewed in accordance with the following: • **When effluent concentration is reported above quantification**: The permittee is out of compliance with the permit. A detailed review of the PMP annual report is required by district staff.

The SWAS and/or the PS should be consulted on issues where their expertise is required.

- **When effluent concentration is reported below quantification:** The permittee is in compliance with the permit if they are also implementing their approved PMP. A moderate level review by district staff is required to ensure that permittee continues to implement actions toward meeting the WQS.

If appropriate, district compliance staff distributes the annual report for comment. Consideration should be given to distribute the annual report to other divisions or agencies when remediation or other issues may be relevant to the annual report. Each participating entity has 45 days to submit their respective annual report review comments back to the district compliance person.

District compliance staff

8. The district compliance staff completes their review on the permittee's annual report and the comments provided by others and provides recommendations to the district supervisor. Comments should be summarized as a response from the WB (comments from other reviewers should not be forwarded directly to the permittee).

District supervisor

9. A summary of department comments should be communicated to the permittee within 60 days of the annual PMP report submittal (with blind copy to all those that provided comments in the review process).

Table 1

Table 1		
Mercury Levels	**Review and approval process for revisions to PMPs that were previously approved**	**Annual Report Review**
Effluent concentration <5 ng/l and in compliance with the level currently achievable (LCA)	Limited cursory review by district staff to make sure it appears appropriate (permittee is not backing off program). No involvement by SWAS. Approve if adequate.	Cursory review (including the summary of results and actions) by district staff only, then file (rules require submittal of annual report, it doesn't require our review)

Mercury Levels	Review and approval process for revisions to PMPs that were previously approved	Annual Report Review
Effluent concentration =>5 ng/l and <10 ng/l and in compliance with the LCA	District determines effluent concentration trend over the last couple of years. • If trend is decreasing, then handle as above (<5 ng/l). • If trend is flat or increasing, then as below (=>10 ng/l). Approve if adequate.	District determines effluent concentration trend over the last couple of years. • If trend is decreasing, then cursory review (including the summary of results and actions) • If trend is flat or increasing, then detailed district review. No SWAS involvement in review unless expertise is needed on a specific issue.
Effluent concentration =>10 ng/l or in noncompliance with the LCA	Full review by district and SWAS (and PS if it involves treatment technology issues or limits). Approve if adequate.	Detailed district review. No SWAS involvement in review unless expertise is needed on a specific issue.
New PMP requirements imposed in permit	Full review by district and SWAS (and PS if it involves treatment technology issues or limits). Approve if adequate.	Review annual reports as described above based on available data.

APPROVED: _____ DATE: _____
Richard A. Powers, Chief
Water Bureau

LAST REVIEWED BY: _____ DATE: _____
Name
Title

APPENDIX A

Pollution Minimization Program (PMP)
(Public Owned Treatment Works)
(City / Village / Township), Michigan

Submitted on (date)

The following is an example for Water Bureau staff of a basic PMP for Public Owned Treatment Works (POTWs). This example should not be interpreted as a form or template to be used for all POTWs requiring a PMP but rather as a demonstration of the basic components that should be included in any proposed PMP.

The following is a detailed explanation of a PMP for (facility) and is intended to meet the requirements set forth in R 323.1213(d). This plan consists of five sections:

1. An annual review of potential sources of the toxic substance(s) in question. These sources will include, but are not limited to, businesses/industry where (pollutant) is or has been historically used or geographic areas where this material may have been previously deposited.

2. Semiannual monitoring of potential sources of the toxic substance(s) in question. Points along the collection system where storm water runoff, groundwater, etc., may be entering the collection system may also be included where applicable.

Existing potential sources will be sampled to determine the presence or absence of (pollutant). Sources, when identified, will be managed alone or in combination with other waste streams so as to move toward the PMP goal of meeting the water quality-based effluent limit (WQBEL) at the point of compliance.

A summary of all review activities and sampling results will be included in the PMP Annual Report.

3. Quarterly monitoring for the toxic substance in the influent to the wastewater treatment system will be performed and reported in the PMP Annual Reports. Influent samples will consist of a (grab/composite) that will be analyzed at an appropriate QL using an approved U.S. Environmental Protection Agency (USEPA) method, approved alternative test method, or permit specified method.

When (pollutant) is found (include an action level here) at monitoring point (station or monitoring point), staff will immediately:

- (description of action(s) such as immediately resample, notification to nondomestic dischargers, etc.)

(Optional- part or all) [Sludge, filter residuals, fish tissue monitoring and/or biouptake] data will also be submitted along with influent and effluent data (as with influent data, action levels for this alternative sampling data may be inserted here).

To aid in the review of this program, a sufficiently detailed diagram of the complete collection system, including (potential) sampling locations and the treatment plant outfall location, has been provided (Figure 1).

4. Reasonable, cost-effective control measures will be implemented when sources of the toxic substance are discovered under part 1 or 2 listed above. The following factors will be considered when a pollutant source is discovered:

A. Source significance. An effort to quantify the load potential to the collection system from each identified source will be made. This quantification will assist in prioritizing sources for future reduction/elimination efforts.

B. Economic considerations will be given regarding the reduction and/or elimination of an identified source.

C. Where appropriate, technical and treatability considerations may apply to specific sources. A complete description of any such consideration will be detailed on a case-by-case basis in each annual report.

If/When the targeted pollutant of concern is found above action levels (list QL if less than the WQBEL or action level here), the following actions will be initiated:

Provide a list of activities that describe the response when the pollutant is quantified in influent/effluent samples. Activities are intended to describe a logical progression of effort aimed at pinpointing the location of the source. At a minimum, a facility should attempt to quantify the amount (load) of the targeted pollutant and its source. The statement, "…will continue to monitor…," when used as the only action following the exceedance of an action level, should be accepted as a last resort, as this action, by itself, does not necessarily move the permittee toward the PMP goal.

5. In addition to the above-mentioned portion of this plan, PMP Annual Reports will also include a summary progress section that will specifically list points of progress towards attaining the goal of the PMP detailed above. This report should be broken down into logical sections that describe the activities and actions taken to reduce or eliminate sources of the

targeted pollutant. As an example, the summary document may include sections that describe:

- Information and Training. This section will describe information outreach activities to individual dischargers within the collection system that may be potential sources of (pollutant), as well as specific training to affected employees, and other efforts to reduce (pollutant) loads through elevated awareness.

- Identification of (pollutant) sources and action(s) taken toward reduction or elimination of source(s).

- Changes in sampling strategy in response to (pollutant) detection.

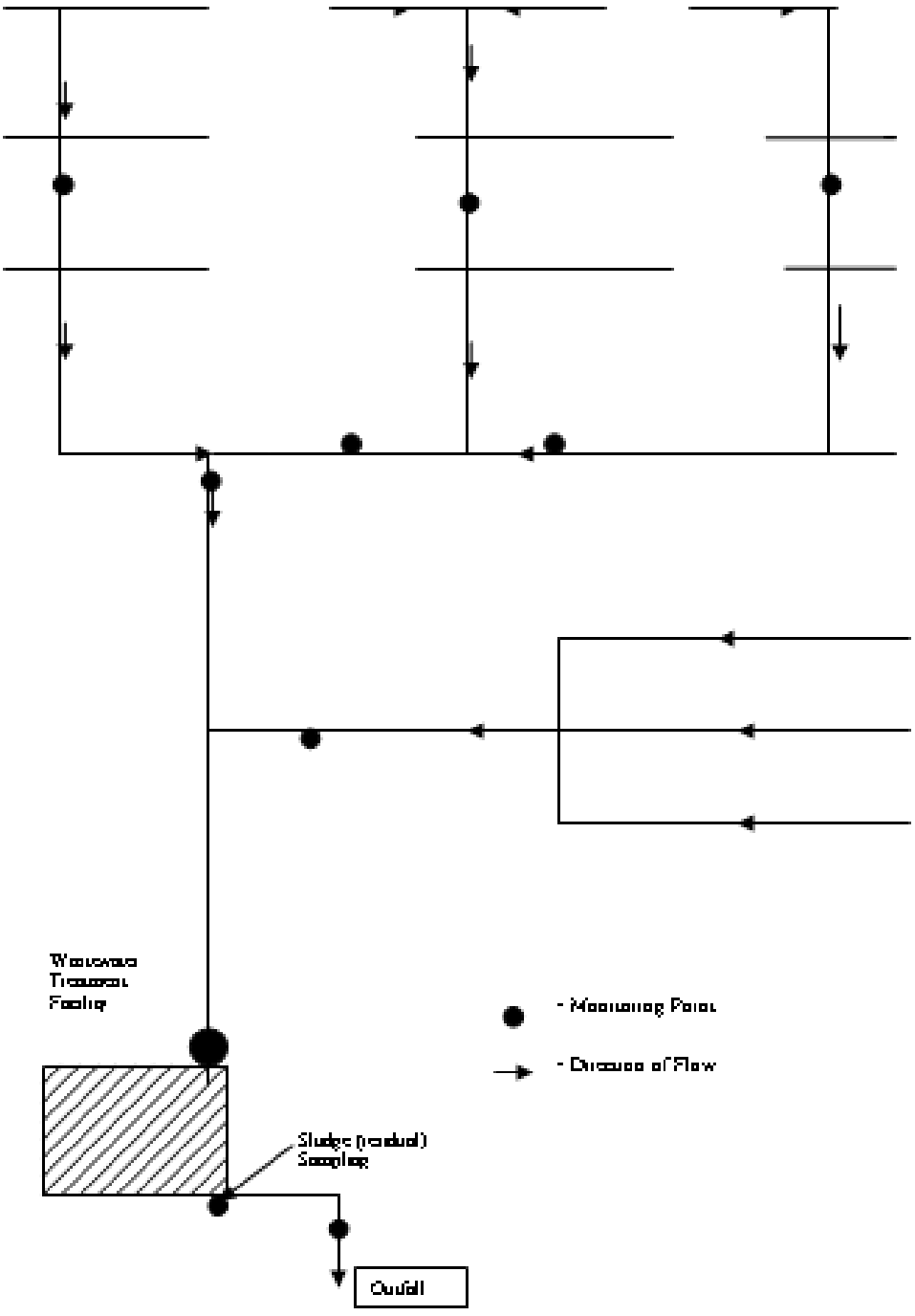

Figure 1. (Name of Community POTW) wastewater collection system indicating direction of influent flow and potential sampling locations.

Pollution Minimization Program (PMP)

(Industrial Discharge)
XYZ Manufacturing
(City / Village / Township), Michigan

Submitted on (date)

The following is an example for Water Bureau staff of a basic PMP for an industrial discharger. This example should not be interpreted as a form or template to be used for all industrial dischargers requiring a PMP but rather as a demonstration of the basic components that should be included in any proposed PMP.

The following is a detailed explanation of a PMP for (Permittee name and National Pollutant Discharge Elimination System Number) and is intended to meet the requirements set forth in R 323.1213(d). This program consists of five sections:

1. An annual review of potential sources of the toxic substance(s) in question. These sources will include, but are not limited to, individual plant processes where (pollutant) is or has been historically used, service water supply lines, or geographic areas where this material may have been previously deposited.

2. Semiannual monitoring of potential sources of the toxic substance(s) in question. Points along the collection system where storm water runoff, groundwater, etc., may be entering the collection system may also be included where applicable.

Existing potential sources will be sampled to determine the presence or absence of (pollutant). Sources, when identified, will be managed alone or in combination with other waste streams so as to move toward the PMP goal of meeting the water quality-based effluent limit (WQBEL) at the point of compliance.

A summary of all review activities and sampling results will be included in the PMP Annual Report

3. Quarterly monitoring for the toxic substance in the influent to the wastewater treatment system will be performed and reported in the PMP Annual Reports. Influent samples will consist of a (grab/composite) that will be analyzed at an appropriate QL using an approved USEPA method, approved alternative test method, or permit specified method.

(Optional – part or all of the following may be required) Sludge, filter residuals, fish tissue monitoring, and/or biouptake data will also be submitted along with influent and effluent data (the permittee may also include an appropriate action level here for these specific types of monitoring).

To aid in the review of this program, a sufficiently detailed diagram of the complete facility collection system, including (potential) sampling locations and the treatment plant outfall

location, has been provided (similar to Figure 1 only specific to the manufacturing processes, including wastewater treatment system).

4. Reasonable, cost-effective control measures will be implemented when sources of the toxic substance are discovered under part 1 or 2 listed above. The following factors will be considered when a (pollutant) source is discovered:

   A. Source significance. An effort to quantify the load potential to the collection system from each identified source will be made. This quantification will assist in prioritizing sources for future reduction/elimination efforts.

   B. Economic considerations will be given regarding the containment and/or elimination of an identified source.

   C. Where appropriate, technical and treatability considerations may apply to specific sources. A complete description of any such consideration will be detailed on a case-by-case basis in each annual report.

If/When the targeted pollutant of concern is detected above action or trigger levels (list QL if less than the WQBEL; or an action level here), the following actions will be initiated:

Provide a list of activities in response to pollutant quantified in influent/effluent samples. Activities are intended to describe a logical progression of effort aimed at pinpointing the location of the source. At a minimum, a facility should attempt to quantify the amount (load) of the targeted pollutant and its source. The statement, "…will continue to monitor…," when used as the only action following the exceedance of a action level, should be accepted as a last resort, as this action, by itself, does not necessarily move the permittee toward the PMP goal.

5. In addition to the above-mentioned portion of this plan, PMP Annual Reports will also include a Summary Progress section that will specifically list points of progress toward attaining the goal of the PMP detailed above. This report should be broken down into logical sections that describe the activities and actions taken to reduce or eliminate sources of the targeted pollutant. As an example, the summary document may include sections that describe:

   - Information and Training. This section will describe training activities to individuals that have influence over various plant processes that discharge to the collection system.

   - Identification of (pollutant) sources within plant process areas and action(s) taken toward removal of source(s).

   - Changes in sampling strategy in response to (pollutant) detection.

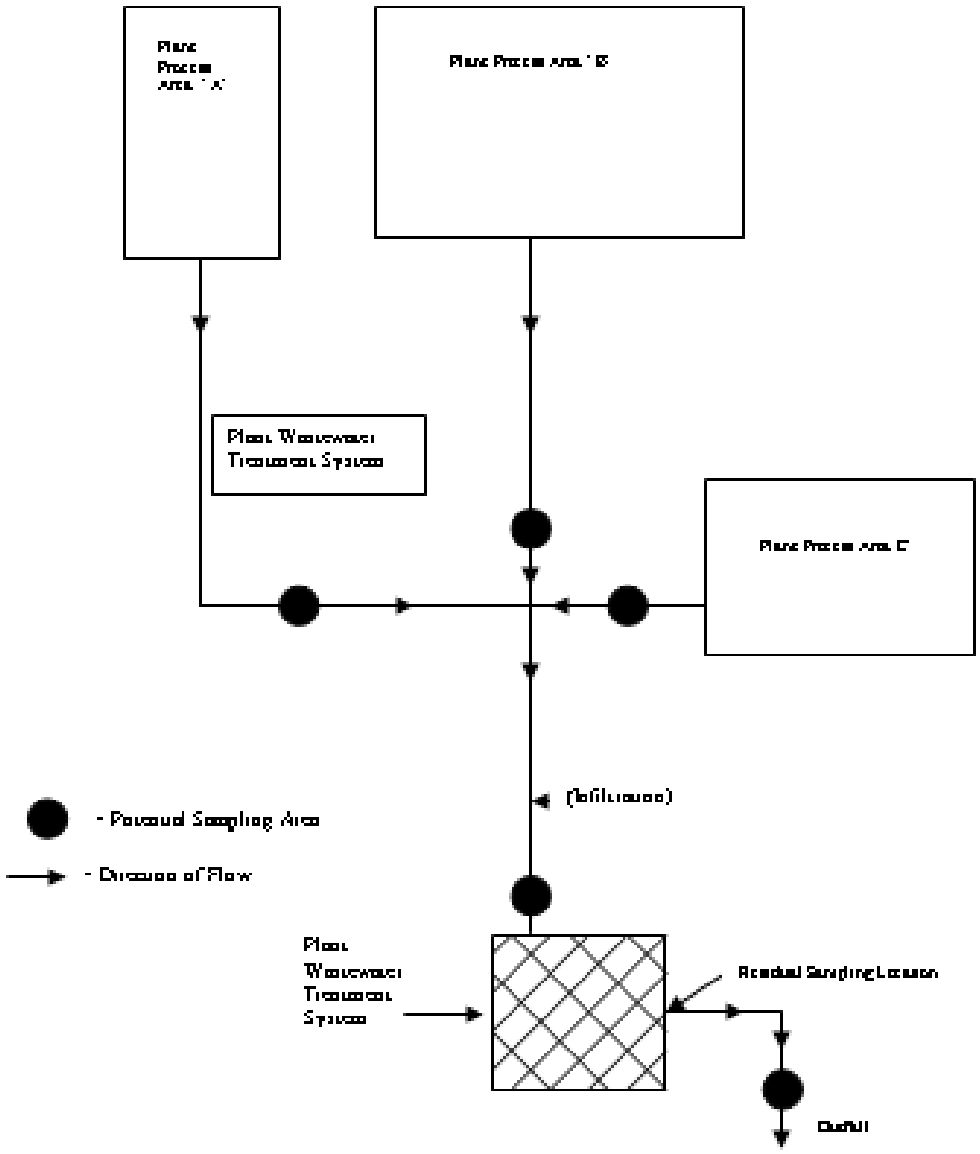

Figure 1. (Name of facility) wastewater collection system indicating direction of influent flow and potential sampling locations.

APPENDIX B

Pollution Minimization Program (PMP)
(Suggested) Annual Report Format

Submitted on (date)

The following is an example for Water Bureau staff of the basic format for a PMP Annual Report. This general format can be modified as needed for specific needs from a Publicly Owned Treatment Works facility or an industrial discharger. This example should not be interpreted as a form or template to be used for all National Pollutant Discharge Elimination System dischargers requiring a PMP but rather as a demonstration of the basic components that should be included in any PMP Annual Report that has been submitted to the WB for approval.

PMP Annual Report

1. **Was the approved PMP followed completely during the past year**?

   YES or NO (circle one)

   If no, please attach a statement that clearly describes any and all deviations from the approved program. Include a list of actions or conditions that lead to the program deviation, as well as any interaction with the Department of Environmental Quality, Water Bureau, related to the deviation.

2. **Known sources of contaminant and loading to the wastewater treatment plant (WWTP)**. List any confirmed sources of the toxic substance and an annual loading to the WWTP. Sources may include process and activity waste streams; storm water, sanitary, and groundwater collection and transport systems; remediation and disposal waste streams, and historical contamination waste streams.

Source	concentration / flow / loading to WWTP (use appropriate units)
Suggested Format for Reporting Known	

Attach analytical sample results from all monitoring performed at known sources of contamination. Include detection limit and quantification limit information. If all known sources were not monitored, explain why.

3. **Potential sources of contamination**. List any suspected sources of the toxic substance and, if known, provide an estimate of annual loading to the WWTP.

Potential Source	Concentration / flow / loading estimate (use appropriate units)

Suggested Format for Reporting Suspected

Attach analytical sample results (if available). Include detection level and QL information. If all potential sources were not monitored, explain why.

4. **List actions taken to reduce or eliminate the identified sources of the toxic substance**. Actions may include treatment, remediation, investigation, operation, and/or management activities. If no action(s) were taken to reduce or eliminate the identified source, please explain why. Were the actions consistent with the approved PMP? If pollutant-specific action levels are part of the approved PMP, were these sufficient to drive the continuing reduction of the pollutant?

5. **Actions planned to further reduce or eliminate sources of the toxic substance**. (If necessary, attach plans as a separate document.)

Action	Known or estimated reduction	Time frame

Suggested Format for Actions Planned

6. Provide additional comments or information on the facility's progress using its PMP control strategy designed to proceed toward achievement of the goal to maintain the effluent concentration of the toxic substance at or below the water quality-based effluent limit (WQBEL). Include prioritization and performance standard reviews.

7. Attach the analytical results from all minimization program monitoring. Include the results from WWTP influent, effluent, collection system monitoring (i.e., trunk line monitoring), source monitoring, solids, fish tissue, and biouptake monitoring.

APPENDIX C

Surface Water Assessment Section

Initial Pollutant Minimization Program Review for:

(name of industrial discharger or Publicly Owned Treatment Works)
Date ___ / ___ / ____

The sampling locations are clearly identified. YES or NO (circle one)

PMP contained a description of the analytical method(s) and appropriate quantification limit used to determine the presence of the targeted pollutant (this method(s) must be consistent with the method requirements as stated in the National Pollutant Discharge Elimination System permit). YES or NO

PMP contained a sampling plan(s) for a Biouptake Study (if required). YES or NO or N/A

PMP contained appropriate actions levels (concentrations) for the targeted pollutant.
(YES or NO or N/A) *"Appropriate" is going to be facility-specific depending on local limits, removal efficiency of the treatment system, etc.*

Additional Comments: (Attach as an additional sheet if necessary)

PMP Annual Report - Initial Review Checklist

PMP Annual Report contained a description of the analytical method(s) and appropriate QL(s) used to determine the presence of the targeted pollutant (verify with the NPDES permit that the correct method was used. YES or NO

PMP Annual Report contained appropriate action levels (concentrations) for the targeted pollutant. YES or NO or NA

Sampling results indicated the presence of (pollutant) at or above the "action" level.
YES or NO or NA If YES, describe the facility's response.

Sampling results indicated the presence of (pollutant) at or above the QL. YES or NO
If YES, describe the facility's response.

PMP Annual Report contained the sampling results for Sludge (if required). If sludge data is present, do the results indicate a need for any additional sampling or a change to the PMP?
YES or NO or N/A Explain.

PMP Annual Report contained the sampling results from a Biouptake Study (if required). If biouptake data is present, do the results indicate a need for any additional sampling or a change to the PMP? YES or NO or N/A Explain.

Additional Comments: (Attach as an additional sheet if necessary)

APPENDIX D

District Checklist

Pollution Minimization Program Review

(name of industrial discharger or Public Owned treatment Works)
Date ___ / ___ / ____

New Pollutant Minimization Program (PMP) (circle the correct response)

Required Elements (review the permit for specific requirements):

- **An annual review and semiannual monitoring of potential sources of the toxic substance.**
- **Quarterly monitoring for the toxic substance in the influent to the wastewater treatment system.**
- **A commitment by the permittee that reasonable cost-effective control measures will be implemented when sources of the toxic substance are discovered.**
- **An annual status report.**

PMP contains a description of the analytical method(s) used to determine the presence of the targeted pollutant, including the QL. YES or NO

PMP contains an annual review of potential sources. YES or NO

PMP contains semi-annual monitoring of potential sources. YES or NO

PMP contains quarterly sampling of the influent if there is a wastewater treatment system. YES or NO or NA

PMP contains a sampling schedule for sludge if required by the permit. YES or NO or N/A

PMP contains a sampling plan for a Biouptake Study. YES or NO or NA

PMP contains a commitment that reasonable cost-effective control measures will be implemented when sources of the targeted pollutant are discovered. YES or NO

PMP contains an annual status report. YES or NO

The goal of the Pollutant Minimization Program is to maintain the effluent concentration at or below the WQBEL. The permittee's PMP as a whole is designed to proceed toward the goal. YES or NO

Other non-required PMP elements (these elements are not required, but including them may provide a better understanding of how the permittee is complying with the PMP requirements):

PMP contains a description of the facility's internal processes and collection system so that any discussion of sampling locations can be understood by the reviewer. YES or NO

PMP contains an appropriate Action Level (concentration) that initiates a specific response. YES or NO or NA

PMP contains a response if the pollutant of concern is found at a concentration that equals or exceeds the Action Level. YES or NO or NA

Response to pollutant monitoring in collection system is to move the permittee toward identification of sources. YES or NO

Response to pollutant detection is to contact businesses and industries that are known or suspected of discharging the targeted pollutant. YES or NO

PMP contains a list of potential targeted pollutant sources. YES or NO

PMP contains a list of known targeted pollutant sources. YES or NO

PMP Annual Report(s) (circle the correct response)

In accordance with this policy, the review of the annual report may be more cursory in nature if certain requirements are met. In this case, the reviewer should be aware of the elements detailed below when reviewing the annual report, but it is not required to document each item using this checklist.

If a detailed review is appropriate in accordance with this policy, then compare the PMP Annual Report with the approved PMP to verify that all proposed activities have been enacted. If the PMP Annual Report covers the second year or more of PMP activities, compare the activities of the current annual report with the previous year. Please note that it is critical that all activities of the PMP are contained in the first annual report to be sure that subsequent annual reports continue to be as complete as possible.

Required Elements (review permit for specific requirements which may be different):

- **All minimization program monitoring results for the previous year.**
- **A list of potential sources of the toxic substance.**
- **A summary of all *actions taken* (emphasis added) to reduce or eliminate the identified sources of the toxic substances.**

Sampling was performed as scheduled for influent, effluent, and sludge monitoring as applicable.
YES or NO

Monitoring results from all scheduled samplings are included and contain the QL for each analytical result reported. YES or NO

The facility used the approved analytical method(s) with proper QL to determine the presence of the targeted pollutant. YES or NO

Report contained results from a biouptake study or an update on progress toward performance of a scheduled biouptake study. YES or NO or NA

Report contained a list of potential targeted pollutant dischargers. YES or NO

Report contained a list of known targeted pollutant dischargers. YES or NO

Report contains a summary of all *actions taken* to reduce or eliminate the identified sources of the toxic substances. These actions moved permittee toward the goal of the PMP.
YES or NO

Other Annual Report Elements (these elements are not required, but including them may provide a better understanding of how the permittee is complying with the PMP requirements).

Report contained a description of the facility's internal processes so that any discussion of sampling locations can be understood by the reviewer. YES or NO

Report contained actions taken in response to the presence of the pollutant of concern found at or above action level. YES or NO or NA

Facility performed collection system monitoring to better identify collection system segments with pollutant present. YES or NO

For POTWs, facility initiated control programs at known or suspected nondomestic users with the potential to discharge the targeted pollutant. YES or NO or NA

Report contained a summary of the effectiveness of pollutant reduction activities including an estimate of the mass of pollutant eliminated. YES or NO

Report contained a summary of proposed actions to be performed in the next year. YES or NO

Industrial Pretreatment Program (IPP) Section of the District Checklist

For POTWs only - contact/consult the appropriate IPP District Specialist.

Is the POTW required to have an Industrial Pretreatment Program? YES or NO (circle one)

If yes, is the pollutant of concern properly regulated by local limits and/or a reduction plan? YES or NO

Are nondomestic users suspected of discharging this pollutant monitored for it? YES or NO

If no IPP is required, complete the following:

Does the program describe the legal authority that the POTW intends to use to require nondomestic users to control the pollutant in question? YES or NO

If more than one jurisdiction is served, does the legal authority provide for the control of nondomestic users in the entire service area? YES or NO
[Note: This is usually included in a Sewer Use Ordinance.]

Attachment E

Michigan NPDES Noncompliance Notification Permit Language

Compliance with all applicable requirements set forth in the Clean Water Act, Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

a. 24-Hour Reporting

Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC). A written submission shall also be provided within five (5) days.

b. Other Reporting

The permittee shall report, in writing via all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

Attachment F

Michigan NPDES Mercury Permit Language

FOR FACILITIES WITH MONITORING ONLY, AND OR FOR FACILITIES WITH A RECOMMENDATION FOR AN LCA LIMIT

This condition is required, upon written notification by the Department or if the permittee notifies the Department that the final effluent concentration of total mercury has exceeded 5 ng/L. The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/L.

FOR FACILITIES THAT HAVE NEVER HAD A MERCURY PMP

Within 90 days of written notification by the Department or after the permittee notifies the Department that the final effluent concentration of total mercury has exceeded 5 ng/l, the permittee shall submit to the Department an approvable Pollutant Minimization Program for mercury designed to proceed toward the goal.

FOR FACILITIES THAT PREVIOUSLY HAD A MERCURY PMP

Upon written notification by the Department or after the permittee notifies the Department that the final effluent concentration of total mercury has exceeded 5 ng/L, the permittee shall resume implementation of the Pollutant Minimization Program approved on INSERT DATE, and modifications thereto, to proceed toward the goal.

FOR ALL FACILITIES WITH A RECOMMENDATION FOR AN LCA LIMIT

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/L. The permittee shall resume implementation of the Pollutant Minimization Program approved on INSERT DATE, and modifications thereto, to proceed toward the goal. The permittee shall develop and implement a Pollutant Minimization Program in accordance with the following schedule.

On or before INSERT DATE, the permittee shall submit to the Department an approvable Pollutant Minimization Program for mercury designed to proceed toward the goal.

The Pollutant Minimization Program shall be implemented upon approval by the Department.

The Pollutant Minimization Program shall include the following:

a. an annual review and semi-annual monitoring of potential sources of mercury entering the wastewater collection system;

b. a program for quarterly monitoring of influent and if applicable, periodic monitoring of sludge for mercury; and

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

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

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

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items a. and b. above.

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

FOR FACILITIES WITH AN EXISTING LCA LIMIT AND MERCURY PMP

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/L. The permittee shall continue to implement the Pollutant Minimization Program approved on (Insert Date), and modifications thereto, to proceed toward the goal. The Pollutant Minimization Program includes the following or the permittee shall modify the Pollutant Minimization Program approved on (Insert Date), and modifications thereto, to proceed toward the goal.

The permittee shall submit the modified Pollutant Minimization Program to the Department for approval on or before (Insert Date 60 days from permit effective date) to include the following minimum requirements or the permittee shall modify the Pollutant Minimization Program approved on (Insert Date), and modifications thereto, to proceed toward the goal.

The permittee shall submit the modified Pollutant Minimization Program to the Department for approval on or before (Insert Date 60 days from the permit effective date). In addition to the following minimum requirements applicable to all discharges of total mercury from the facility, the modified Pollutant Minimization Program shall

specifically evaluate and describe plans for reducing concentrations of total mercury in the discharge through Outfall (Insert Outfall Name):

a. an annual review and semi-annual monitoring of potential sources of mercury entering the wastewater collection system;

b. a program for quarterly monitoring of influent and periodic monitoring of sludge for mercury; and

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

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

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

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items a. and b. above.

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

Attachment G

MERCURY SAMPLING AND REPORTING GUIDANCE For National Pollutant Discharge Elimination System (NPDES) Permit Compliance

I. EXECUTIVE SUMMARY

The Water Resources Division (WRD) has determined that some contract labs were reporting analytical results to their clients (permitted facilities) that did not meet the quality control (QC) acceptance criteria for EPA Method 1631 Revision E (1631E) and EPA Method 1669. In order to ensure and verify that the reported mercury monitoring data is valid and acceptable, permittees with mercury monitoring in their NPDES permit will be required to provide the mercury QC data when they report their effluent data to us (on the daily sheets, also known as the Daily Discharge Monitoring Report [DMR]).

II. BACKGROUND

The WRD has identified a number of problems with how permittees and their contract labs collect, use, and report field duplicate, field blank, and trip blank data; much of which is inconsistent with the QC requirements of EPA Method 1631E and EPA Method 1669 as described in Title 40, Code of Federal Regulations, Part 136.

III. WHAT YOU NEED TO KNOW

1. EPA Method 1631E and EPA Method 1669 require that at least one field blank and at least one field duplicate be collected for each ten samples per sampling event at a given site.

a) A permittee collecting their **own** sample(s) needs to collect 1 field blank and 1 field duplicate (assuming they collect ten or less samples) **each date/time they collect a sample** regardless of the number of outfalls being collected at their facility/site.
b) A contract lab collecting mercury samples for multiple facilities/sites needs to collect one field blank and one field duplicate **at each facility/site** (assuming they collect ten or less samples at a single facility/site location).

2. A field duplicate is a second sample collected at the same time and place as the sample for QC purposes. The results of the field duplicate should be reported separately on the daily sheets and **NOT** averaged with the sample result for reporting purposes.

3. A field blank is reagent water that has been transported to the field and **treated as a sample in all respects**, including contact with the sampling devices and exposure to sampling site conditions, filtration, storage, preservation, and analytical procedures. The

field blank is used to demonstrate that samples have not been contaminated by the sample collection and transport activities.
4. The Method 1631E acceptance criteria for field blanks is <0.5 ng/L or no greater than one-fifth (1/5) of the Mercury (Hg) in the associated sample(s), whichever is greater. If the field blank results exceed these criteria, the sample results cannot be reported for NPDES permit compliance purposes. We recommend that permittees take their mercury samples early in the month (or quarter if the permit only requires quarterly sampling) so they will have time to resample if the field blanks do not meet the Method 1631E acceptance criteria.

A method blank is reagent water that is placed in a sample bottle in the lab and analyzed using reagents and procedures that are identical to those used to prepare and analyze the corresponding sample. The method blank is used to demonstrate that the analytical system is free of contamination.

The Method 1631E acceptance criteria for method blanks is <0.5 ng/L. If the result for the method blank exceeds the acceptance criteria, the analytical system is out of control and the associated sample results cannot be reported. The laboratory must eliminate the contamination in the analytical system and reanalyze the samples. If the laboratory cannot reduce the contamination in the analytical system to acceptable levels before the DMR data must be submitted, the permittee should enter the code for analytical error on the DMR and contact their DEQ district office.

5. The results of the field blank, the field duplicate and method blank should be reported in the columns provided on the daily sheets (these columns will be available for the month of June 2014 forward).

6. A trip blank is reagent water with preservative that is placed in a bottle in the lab with a custody seal over the cap. The trip blank is transported to and from the sampling site with the sample and field blank bottles but is never opened or removed from its double zipper bags.

7. There is nothing in Method 1631E or Method 1669 that prohibits the use of trip blanks or any other type of blanks as additional QC measures, but they are **NOT** acceptable substitutes for field blanks and cannot be used for blank correction of sample results.

8. **Only** field blanks or method blanks may be used to report something lower than the actual sample analytical results (a blank correction). **Only one blank** (field or method) can be used for blank correction of a given sample result (not both), and only if they meet the acceptance criteria (see *Quality Control Guidance Information for the sampling and analysis of Low Level Mercury in Water following EPA Method 1631 Revision E August 2002*).

IV. BLANK CORRECTION EXAMPLES

1. A permittee obtained the following analytical results: 12 ng/L in the sample and 10 ng/L in the corresponding field blank.
As stated above, acceptance criteria for field blanks is <0.5 ng/L or no greater than one-fifth (1/5) of the Hg in the associated sample(s), whichever is greater. In this example 1/5 of the sample value 1/5 X 12 ng/L is 2.4 ng/L. Since 2.4 ng/L (1/5 of the sample value) is greater than 0.5 ng/L, the acceptance criteria for this sample is 1/5 of the sample value (2.4 ng/L). Because the field blank (10 ng/L) is greater than 1/5 of the Hg in the associated sample, the sample is invalid and may not be reported or otherwise used for regulatory compliance purposes. The permittee should resample to comply with NPDES permit monitoring requirements. The field blank result should be reported on the daily sheets, even though the sample result was invalid.

The permittee and/or lab should find the source of the field blank contamination and reduce it to acceptable levels before the next sampling event. The Method 1669 and Method 1631E guidance documents provide suggestions for reducing blank contamination. If the contamination cannot be reduced to this level, the permittee should retain a sampling team and/or lab capable of meeting acceptable QC requirements.

2. A permittee obtained the following analytical results: 5.6 ng/L in the sample, and 0.7 ng/L in the field blank.

Applying the same approach as above, first determine 1/5 of the Hg in the sample. 1/5 X 5.6 ng/L = 1.12 ng/L which is greater than 0.5 ng/L. Since the blank is ≤ 1/5 of the sample result, the sample result may be blank corrected and the result reported as 4.9 ng/L. The sample and field blank results should be reported on the daily sheets. Only the corrected sample result is reported on the DMR.

3. A permittee obtained the following analytical results: 1.5 ng/L in the sample and 0.4 ng/L in the field blank.

First determine 1/5 of the Hg in the sample. 1/5 X 1.5 ng/L = 0.3 ng/L. This is less than 0.5 ng/L. Since the blank is less than 0.5 ng/L the sample results may be blank corrected and reported as 1.1 ng/L. The sample and field blank results should be reported on the daily sheet. The corrected sample result is reported on the DMR.

4. A permittee got the following analytical results: 1.5 ng/L in the sample, 0.2 ng/L in the field blank and 0.4 ng/L in the method blank.

First determine 1/5 of the Hg in the sample. 1/5 X 1.5 ng/L = 0.3 ng/L. This is less than 0.5 ng/L. Since the blanks are less than 0.5 ng/L the sample results may be blank corrected using either the field blank result **or** the method blank result. It is expected that most people would choose the larger correction and report the result as 1.1 ng/L. Both the sample and method blank results should be reported on the daily sheet. The corrected sample result is reported on the DMR.

Enclosure 2

ATTORNEY GENERAL CERTIFICATION

Certification Statement for the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Water Resource Division's Establishment of a Multiple Discharger Variance (MDV) for Mercury

EGLE is submitting an MDV for mercury to the United States Environmental Protection Agency (USEPA) for review and approval. Upon approval by the USEPA, EGLE will apply the MDV in National Pollutant Discharge Elimination System permits issued in Fiscal Years 2025 through 2029 for existing discharges of mercury.

EGLE has the lawful authority to establish the MDV for mercury in accordance with Rule 103 of the Part 4 administrative rules, Mich. Admin. Code, R 323,1103, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, M.C.L. §§ 324.3101 et seq. Having demonstrated that attaining the Water Quality Standard for mercury is still not feasible and the basis for the MDV having otherwise been established under Michigan law, I hereby certify that the MDV was duly adopted by the EGLE.

If you have any questions regarding the variance approval, please contact Gary Kohlhepp, Section Manager, Great Lakes Watershed Assessment, Restoration, and Management Section, Water Resources Division, at 517-230-7548 or KohlheppG@Michigan.gov.

/s/ *Margaret A. Bettenhausen*
Margaret A. Bettenhausen
Assistant Attorney General
Michigan Department of Attorney General
Environment, Natural Resources, and
Agriculture Division
P.O. Box 30755
Lansing, Michigan 48909
Telephone: 517-335-7664

Date: July 23, 2024

Enclosure 3

EGLE PUBLIC NOTICE, INFORMATIONAL MEETING, AND PUBLIC HEARING FOR THE MULTIPLE DISCHARGER VARIANCE AND PERMITTING STRATEGY FOR MERCURY

A Water Quality Standards variance requires a 45-day public notice of a public hearing and documents available to the public 30-days prior to the public hearing. The draft Multiple Discharger Variance (MDV) public notice and information meeting and hearing were announced in EGLE's online Environmental Calendar beginning May 10, 2024. Notice of the public hearing and that the MDV would be available for comment was emailed to all National Pollutant Discharge Elimination System (NPDES) permittees with mercury limits and/or monitoring requirements, stakeholder groups, federally recognized Tribes, and the other Great Lakes states' environmental agencies on May 10, 2024. The draft MDV public notice period began on May 28, 2024, and ended July 1, 2024. An information meeting and public hearing was held on June 27, 2024.

Attachment A

Calendar notices for the public comment period and public hearing

Michigan Department of Environment, Great Lakes, and Energy (EGLE)

Beginning of public comment period for the Draft Water Quality Standard Variance for Mercury TUESDAY, MAY 28, 2024

The Water Resource Division is announcing the availability of the draft Multiple Discharger Variance for Mercury (Variance) public comment period. Previous versions of the Variance were developed by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), in 2000 with updates in 2004, 2009, 2015, and 2019.

These documents established a multiple discharger variance for mercury and outlined an approach for implementing United States Environmental Protection Agency (USEPA) analytical Method 1631 in existing National Pollutant Discharge Elimination System (NPDES) permits without causing widespread noncompliance with permit limits. EGLE is seeking approval from the USEPA for a multiple discharger variance for mercury for Fiscal Years 2025-2029.

Comments on the draft Variance may be submitted at Public Notice - Details - MiEnviro Portal (Michigan.gov). Comments may also be submitted at the virtual information session and hearing on June 27, 2024 starting at 6:00 P.M. by registering online.
If you do not have internet access and would like to join by PHONE ONLY please use the following phone number: 636-651-3142, and use conference code 374288. Pre-registration is not required to attend. Individuals interested in participating can click the link above at the start of the event (6:00 p.m.).

Comments can also be submitted to Glen Schmitt, EGLE, WRD, P.O. Box 30273, Lansing, Michigan 48909-7773, by July 1, 2024.

Copies of the draft Variance are available at Public Notice - Details - MiEnviro Portal (Michigan.gov) or from Joshua Allison at AllisonJ6@Michigan.gov or 517-243-7260. Variance information contact: Glen Schmitt, WRD, SchmittG1@Michigan.gov or 517-290-6424.

Individuals needing language assistance or accommodations for effective participation at the meeting should contact Ryan Blazic, BlazicR@Michigan.gov or 517-732-1178

by June 13, 2024, to request language, mobility, visual, hearing, translation, and/or other assistance.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

Location	N/A
Event Type	Announcements, Public Comment Periods
Public comment begins	5/28/24
Public comment ends	7/1/24
Counties	State-wide
Divisions	Water Resources Division
Information contact	Glen Schmitt
Information contact email	SchmittG1@Michigan.gov
Information contact phone	517-290-6424
Information contact mailing address	P.O. Box 30273, Lansing, Michigan 48909-7773
Link	https://MiEnviro.Michigan.gov/ncore/External/PublicNotice/Info/1092984048478391309/Details

Michigan Department of Environment, Great Lakes, and Energy (EGLE)

Public Hearing for the Draft Water Quality Standard Variance for Mercury
THURSDAY, JUNE 27, 2024, 6 – 8:30PM

The Water Resource Division is announcing the availability of the draft Multiple Discharger Variance for Mercury (Variance) public meeting and hearing.

Previous versions of the Variance were developed by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), in 2000 with updates in 2004, 2009, 2015, and 2019. These documents established a multiple discharger variance for mercury and outlined an approach for implementing United States Environmental Protection Agency (USEPA) analytical Method 1631 in existing National Pollutant Discharge Elimination System (NPDES) permits without causing widespread noncompliance with permit limits. EGLE is seeking approval from the USEPA for a multiple discharger variance for mercury for the fiscal years 2025-2029.

An information session and hearing will be held June 27, 2024, at 6:00 P.M. to provide an opportunity to ask questions and submit formal public comments.

Register to attend the online information session and hearing.

If you do not have internet access and would like to join by PHONE ONLY, please use the following phone number: 636-651-3142, and use conference code 374288. Pre-registration is not required to attend. Individuals interested in participating can click the link above at the start of the event (6:00 p.m.).

- Comments on the draft Variance may be submitted at Public Notice - Details - MiEnviro Portal (Michigan.gov)
- Comments on the draft Variance may also be submitted to Glen Schmitt, EGLE, WRD, P.O. Box 30273, Lansing, Michigan 48909-7773, by July 1, 2024.
- Copies of the draft Variance will be available on or before May 27, 2024 at Public Notice - Details - MiEnviro Portal (Michigan.gov) or from Joshua Allison at AllisonJ6@Michigan.gov or 517-243-7260.
- For Variance information contact: Glen Schmitt, WRD, SchmittG1@Michigan.gov or 517-290-6424.

Individuals needing language assistance or accommodations for effective participation at the meeting should contact Ryan Blazic, BlazicR@Michigan.gov or 517-732-1178 by June 13, 2024, to request language, mobility, visual, hearing, translation, and/or other assistance.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

Location	Virtual
Event Type	Public Hearings and Meetings
Counties	State-wide
Divisions	Water Resources Division
Link	https://MiEnviro.Michigan.gov/ncore/External/PublicNotice/Info/109298404 8478391309/Details

Attachment B

Example letter sent to all NPDES permittees with mercury limits and/or monitoring requirements, stakeholder groups, federally recognized Tribes, and the other Great Lakes states' environmental agencies.

To Whom It May Concern:

SUBJECT: Public comment period and public hearing for the Draft Multiple Discharger Variance for Mercury

The Department of Environment, Great Lakes, and Energy (EGLE) is seeking public input and comment for a Multiple Discharger Variance for Mercury (MDV) for Fiscal Years 2025-2029 prior to submittal to the United States Environmental Protection Agency (USEPA). Consistent with Section 303(c) of the Clean Water Act and federal regulations at 40 CFR 131 (Water Quality Standards) and 40 CFR 132 (Water Quality Guidance for the Great Lakes System), a variance is a water quality standard and is submitted to the USEPA for review and approval. An MDV for Michigan was first approved by the USEPA in 2000 with approved by USEPA in 2004, 2009, 2015, and 2019.

A virtual public informational session and hearing will be held June 27, 2024, at 6:00 p.m. to provide an opportunity to ask questions and supply formal public comment. To attend the virtual informational session and hearing register at https://bit.ly/4bmHVVz.

Copies of the draft Variance will be available on or before May 27, 2024 at Public Notice - Details - MiEnviro Portal (Michigan.gov) or from Joshua Allison at AllisonJ6@Michigan.gov or 517-243-7260. The public comment period for the draft MDV will begin on May 28, 2024, and close July 1, 2024. Comments on the draft MDV may be submitted to Public Notice - Details - MiEnviro Portal (Michigan.gov). Comments can also be submitted to Glen Schmitt, EGLE, Water Resources Division, P.O. Box 30273, Lansing, Michigan 48909-7773, by July 1, 2024. Copies of the MDV will also be available by contacting Mr. Joshua Allison by email at AllisonJ6@Michigan.gov or 517-243-7260.

For variance information please contact Mr. Glen Schmitt, Water Resource Division, SchmittG1@Michigan.gov or 517-290-6424.

Sincerely,

Original signed by Amanda Bosak
Unit Supervisor
Water Quality and Aquatic Nuisance Control Permits Unit Permits Section
Water Resource Division