

Permit Fact Sheet

General Information

Permit Number:	WI-0022861-10-0	
Permittee Name:	Oconto Utility Commission	
Address:	1210 Main Street	
City/State/Zip:	Oconto WI 54153	
Discharge Location:	North bank of the Oconto River channel approx. 10 ft. West of the Oconto Yacht Club inlet; approx. 1.3 miles West of the mouth of the Oconto River	
Receiving Water:	Oconto River (Water Body Identification Code number 440200) in the Lower Oconto River Watershed (GB03) in the Upper Green Bay Basin, in Oconto County	
Stream Flow (Q _{7,10}):	200 cfs	
Stream Classification:	Warm Water Sport Fish (WWSF) community, non-public water supply	
Discharge Type:	Existing; Continuous	
Design Flow(s)	Daily Maximum	3.483 MGD
	Monthly Maximum	1.81 MGD
	Annual Average	0.763 MGD
Significant Industrial Loading?	None	
Operator at Proper Grade?	Facility Subclasses & Classification: Basic – A1, A2, B, C, P, D, and SS OIC Subclasses & Grade: Benjamin Thorne; Basic – A1, A2, B, C, P, D, SS; OIT – N	
Approved Pretreatment Program?	N/A	

Facility Description

The Oconto Utility Commission treats wastewater generated within the City of Oconto as well as the North Shore, Pensaukee and Town of Oconto Sanitary Districts and receives sludge from the Village of Suring (WPDES Permit No. WI-0020877) wastewater treatment facility. Treatment consists of a perforated plate screen, grit removal, primary clarification, trickling filtration, aeration basins, alum addition for phosphorus removal, final clarification, chlorine gas for disinfection, and sodium bisulfate for dechlorination. The trickling filtration step is present but has not been utilized in the wastewater treatment train since 2017. In the last five years, the aeration step of the treatment process was upgraded from surface aerators to fine bubble diffusion aeration. During the proposed permit term, a new headworks will be added including new screens, grit system, influent wet well, submersible pumps, control room, and updated alum containment. Effluent is discharged on a continuous basis via Outfall 001 to the North bank of the Oconto River channel, approx. 10 ft. West of the Oconto Yacht Club inlet.

Substantial Compliance Determination

Enforcement During Last Permit: A Notice of Noncompliance (NON) was sent 5/8/19 for a Sanitary Sewer Overflow (SSO) event that occurred on 4/18/19. Another NON was sent 9/4/20 for two SSO events that occurred in May of 2020. The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on 2/11/22, by Laura Gerold, Wastewater Engineer, this facility has been found to be in substantial compliance with their current permit. Additionally, due to the length of time between the last inspection and proposed permit reissuance, an additional substantial compliance inspection is scheduled to be conducted on 5/2/24 (desktop review/virtual portion of the inspection) and 5/6/24 (site visit/on-site inspection).

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
701	0.675 (Avg. 2019-2023)	Influent samples shall be collected from the influent flow channel prior to the wet well.
001	0.799 MGD (Avg. 2019-2023); or, 0.595 MGD (Avg. July 2017-May 2023; this overall average excludes effluent flow data reported during the 2019 and 2020 calendar years due to extreme flooding events caused by high water levels in Lake Michigan. The flooding caused effluent flow to back-up starting from the chlorine contact chamber up into the sanitary sewer system)	Effluent samples shall be collected from the mixing box after the final clarifiers except that samples for pH shall be collected from the final clarifier effluent weir and samples for Total Residual Chlorine, Fecal Coliform, and Whole Effluent Toxicity shall be collected from the effluent manhole after dechlorination.
004	818 Tons generated in 2023; 192 Metric Tons land applied in 2023	Lime stabilized cake sludge samples shall be taken from the sludge storage building.
111	N/A – no flow monitoring required	Sample point for reporting the analysis of field blanks collected using standard sample handling procedures for grab samples for Total Recoverable Mercury at sample points 701 and 001.

1 Influent – Monitoring Requirements

Sample Point Number: 701- Influent

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	3/Week	24-Hr Comp	
Suspended Solids, Total		mg/L	3/Week	24-Hr Comp	
Phosphorus, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	Grab	See Section 1.2.1.1 of the permit.

Changes from Previous Permit:

Influent monitoring requirements were re-evaluated for the proposed permit term and no changes were made from the previous permit.

Explanation of Limits and Monitoring Requirements

BOD₅ and Total Suspended Solids (TSS) – Monitoring and reporting of BOD₅ and TSS is required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code.

Mercury – Mercury monitoring is included in the proposed permit pursuant to s. NR 106.145, Wis. Adm. Code. Field blanks for mercury monitoring are required per ss. NR 106.145(9) and (10), Wis. Adm. Code. The permittee shall collect a mercury field blank for each set of mercury samples (a set of samples may include a combination of influent, effluent or other samples all collected on the same day). The permittee shall report results of influent samples to the Department on Discharge Monitoring Reports.

2 In-plant - Monitoring and Limitations

Sample Point Number: 111- Field Blank

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Quarterly	Blank	See Section 2.2.1.1 of the permit.

Changes from Previous Permit:

In-plant monitoring requirements were re-evaluated for the proposed permit term and no changes were made from the previous permit.

Explanation of Limits and Monitoring Requirements

Mercury – Field blanks for mercury monitoring are required per ss. NR 106.145(9) and (10), Wis. Adm. Code. The permittee shall collect a mercury field blank for each set of mercury samples (a set of samples may include a combination of influent, effluent or other samples all collected on the same day). The permittee shall report results of influent samples to the Department on Discharge Monitoring Reports.

3 Surface Water - Monitoring and Limitations

Sample Point Number: 001- Effluent

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total	Weekly Avg	45 mg/L	3/Week	24-Hr Flow Prop Comp	See Standard Requirements permit section for Percent Removal.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
BOD5, Total	Monthly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	See Standard Requirements permit section for Percent Removal.
Suspended Solids, Total	Weekly Avg	45 mg/L	3/Week	24-Hr Flow Prop Comp	See Standard Requirements permit section for Percent Removal.
Suspended Solids, Total	Monthly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	See Standard Requirements permit section for Percent Removal.
pH Field	Daily Min	6.0 su	5/Week	Grab	See the Daily Maximum Ammonia Nitrogen (NH3-N) Limits permit section.
pH Field	Daily Max	9.0 su	5/Week	Grab	See the Daily Maximum Ammonia Nitrogen (NH3-N) Limits permit section.
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	Weekly	Grab	Interim limit effective May through September annually until the final E. coli limit goes into effect per the Effluent Limitations for E. coli Schedule.
E. coli		#/100 ml	Weekly	Grab	Monitoring only May through September annually until the final limit goes into effect per the Effluent Limitations for E. coli Schedule.
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Limit effective May through September annually per the Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit effective May through September annually per the Effluent Limitations for E. coli Schedule. See the E. coli Percent Limit permit section. Enter the result in the eDMR on the last day of the month.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Chlorine, Total Residual	Daily Max	38 ug/L	5/Week	Grab	Applies May through September annually and when chlorine is used.
Chlorine, Total Residual	Weekly Avg	38 ug/L	5/Week	Grab	Applies May through September annually and when chlorine is used.
Chlorine, Total Residual	Monthly Avg	38 ug/L	5/Week	Grab	Applies May through September annually and when chlorine is used.
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	2/Week	24-Hr Flow Prop Comp	Applies November through April annually. See the Daily Maximum Ammonia Nitrogen (NH3-N) Limits permit section.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	34 mg/L	2/Week	24-Hr Flow Prop Comp	Applies November through April annually.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	34 mg/L	2/Week	24-Hr Flow Prop Comp	Applies November through April annually.
Nitrogen, Ammonia (NH3-N) Total		mg/L	Weekly	24-Hr Flow Prop Comp	Monitoring only May through October annually.
Phosphorus, Total	Monthly Avg	1.0 mg/L	3/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	6.4 lbs/day	3/Week	Calculated	
Mercury, Total Recoverable	Daily Max	3.3 ng/L	Quarterly	Grab	Alternative Effluent Limitation. See the Mercury Monitoring permit section and the Mercury Pollutant Minimization Program Schedule.
PFOS		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need Schedule.
PFOA		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need Schedule.
Chloride		mg/L	Monthly	24-Hr Flow Prop Comp	Monitoring only January through December, 2028.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual monitoring in rotating quarters. See Nitrogen Series Monitoring permit section.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual monitoring in rotating quarters. See Nitrogen Series Monitoring permit section.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Annual monitoring in rotating quarters. See Nitrogen Series Monitoring permit section. Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Whole Effluent Toxicity (WET) Testing permit section.

Changes from Previous Permit:

- Fecal coliform monitoring and limits are being replaced with Escherichia coli (E. coli) monitoring and limits. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.
- The variable daily maximum ammonia nitrogen limit table has been expanded to include applicable limits at a lower effluent pH.
- The phosphorus monthly average mass limit has decreased from 12.2 lbs/day to 6.4 lbs/day.
- Addition of PFOS/PFOA monitoring at a frequency of every other month in accordance with s. NR 106.98(2), Wis. Adm. Code.
- Addition of chloride monitoring during the fourth year of the permit to ensure 11 sample results are available at the next permit issuance to meet the data requirements of s. NR 106.85, Wis. Adm. Code.
- Addition of annual total nitrogen monitoring (TKN, NO₂+NO₃ and Total N) in rotating quarters throughout the permit term.

Explanation of Limits and Monitoring Requirements

Monitoring Frequencies – The monitoring frequencies guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

Expression of Limits – In accordance with the federal regulation 40 CFR 122.45(d) and s. NR 205.065, Wis. Adm. Code, limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable. Minor changes have been made to residual chlorine and ammonia nitrogen.

Categorical Limits

BOD₅, Total Suspended Solids, pH, and Dissolved Oxygen – Standard municipal wastewater requirements for total suspended solids and pH are included based on ch. NR 210, Wis. Adm. Code, ‘Sewage Treatment Works’ requirements for discharges to fish and aquatic life streams. Monitoring and reporting of BOD₅ and total suspended solids is required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit. Chapter NR 102, Wis. Adm. Code, ‘Water Quality Standards for Surface Waters’ also specifies requirements for pH for fish and aquatic life streams.

Water Quality-Based Limits and Disinfection

Refer to the QBEL memo, Water Quality-Based Effluent Limitations for the Oconto Utility Commission WPDES Permit No. WI-0022861-10-0, for the detailed calculations, prepared by the Water Quality Bureau, Michael Polkinghorn, EIT, Water Resources Engineer, dated August 9, 2023, used for this reissuance.

Ammonia – Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality-based effluent limitations (QBELs) for ammonia.

Chloride – Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code. Subchapter VII of ch. NR 106 establishes the procedure for calculating QBELs for chloride. If the permittee's effluent data shows that a calculated QBEL for chloride cannot be met, then the permit will include a chloride effluent limitation.

Mercury – Requirements for mercury are included in s. NR 106.145, Wis. Adm. Code. (See <http://dnr.wi.gov/topic/Mercury/>). The Oconto Utility Commission applied for a mercury variance, under the provisions of s. NR 106.145, Wis. Adm. Code, with its application for permit reissuance. The previous permit also included a mercury variance. The Department reviewed Oconto’s application for a mercury variance. The information supplied in the application supports the request. The proposed permit requires the permittee to implement a Mercury Pollutant Minimization Program (PMP) and submit annual progress reports each year by March 31st.

The Department concludes that the Oconto Utility Commission is qualified for a variance from the water quality standard for mercury and proposes reissuance of this permit with the proposed variance.

E. Coli – Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying E. coli WPDES permit implementation procedures became effective May 1, 2020. The new rule requires that WPDES permits for facilities with required disinfection include monitoring for E. coli while facilities are disinfecting during the recreation period and establish effluent limitations for E. coli established in s. NR 210.06 (2), Wis. Adm Code. The administrative code rule changes included the following actions: revised the bacteria water quality criteria from fecal coliform to E. coli to protect recreation in ch. NR 102, Wis. Adm. Code.; removed fecal coliform criteria for certain individual waters from ch. NR 104, Wis. Adm. Code.; revised permit requirements for publicly and privately owned sewage treatment works in ch. NR 210, Wis. Adm. Code.; and, updated approved analytical methods for bacteria in ch. NR 219, Wis. Adm. Code.

E. coli monitoring is required at the permit effective date. An interim fecal coliform limit of 400 #/100 ml as a monthly geometric mean will apply from the permit effective date through the end of a compliance schedule. At the end of the compliance schedule, E. coli limits of 126 #/100 ml as a monthly geometric mean that may not be exceeded and 410 #/100 ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month will apply.

Phosphorus – Phosphorus requirements are based on the Phosphorus Rules that became effective 12/1/2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. The code categorically limits municipal dischargers of more than 150 pounds of phosphorus per month to 1.0 mg/L unless an alternative limit is

approved. NR 217 also specifies WQBELs (water quality-based effluent limits) for discharges of phosphorus to surface waters of the state from publicly and privately owned wastewater facilities. WQBELs for phosphorus are needed whenever the discharge contains phosphorus at concentrations or loadings that will cause or contribute to an exceedance of the water quality standards.

For the reasons explained in the April 30, 2012, paper entitled ‘Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin’, WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily or weekly value. The final effluent limit for phosphorus is expressed as a monthly average. This final effluent limit was derived from and complies with the applicable water quality criterion.

Total Nitrogen Monitoring (TKN, NO₂+NO₃ and Total N) – The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under §§ 283.55(1)(e), Wis. Stats., which allows the Department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. More information on the justification to include total nitrogen monitoring in wastewater permits can be found in the “Guidance for Total Nitrogen Monitoring in Wastewater Permits” dated October 1, 2019. Annual tests are scheduled in the following rotating quarters: **April – June 2025; January – March 2026; July – September 2027; October – December 2028; and April – June 2029.**

PFOS/PFOA – NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the Department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites and other potential sources of PFOS or PFOA. Every other month monitoring is included in the permit in accordance with s. NR 106.98(2)(c), Wis. Adm. Code.

Whole Effluent Toxicity (WET) – WET testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09, Wis. Adm. Code, as revised August 2016. WET tests are scheduled in the following rotating quarters: **January – March 2026; and October – December 2028.**

4 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
004	Class B	Cake	Aerobic Digestion; Alkaline Stabilization	pH Adjustment; Incorporation	Land Application	818 Tons generated in 2023; 192 Metric Tons land applied in 2023
Does sludge management demonstrate compliance? Yes.						
Is additional sludge storage required? No.						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? Yes. If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in land applying sludge from this facility.						
Is a priority pollutant scan required? No.						

Sample Point Number: 004- Cake Sludge

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Radium 226 Dry Wt		pCi/g	Quarterly	Composite	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	See List 2 Analysis permit section.
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Quarterly	Composite	See List 2 Analysis permit section.
Phosphorus, Total		Percent	Quarterly	Composite	See List 2 Analysis permit section.
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	See List 2 Analysis permit section.
Potassium, Total Recoverable		Percent	Quarterly	Composite	See List 2 Analysis permit section.
Chloride		Percent	Quarterly	Composite	See List 2 Analysis permit section.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Monitoring required in 2025. See Sludge Analysis for PCBs and the Standard Requirements permit section for Monitoring and Calculating PCB Concentrations in Sludge.
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Monitoring required in 2025. See Sludge Analysis for PCBs and the Standard Requirements permit section for Monitoring and Calculating PCB Concentrations in Sludge.
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.

Changes from Previous Permit:

- The year in which PCB monitoring is required has been updated to 2025.
- Addition of chloride monitoring. The City of Oconto stores their road salt and sludge in the same building; because of this, chloride monitoring is included as a requirement before land applying.
- Addition of annual PFAS (PFOA + PFOS) monitoring pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

Requirements for land application of municipal sludge are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high quality limits for metals in sludge are specified in s. NR 204.07(5). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k). Radium requirements are addressed in s. NR 204.07(3)(n).

PFAS – The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA is currently developing a risk assessment to determine future land application rates and expects to release this risk assessment by the end of 2024. In the interim, the department has developed the “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS”.

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department’s implementation of EPA’s recommendations. To quantitate this risk, PFAS sampling has been included in the proposed WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

Water Extractable Phosphorus (WEP) – WEP is the coefficient for determining plant available phosphorus from measured total phosphorus. In Wisconsin, the Penn State Method is utilized and is expressed in percent. While a total P may be significant, the WEP may show that only a small percentage of the P is available to plants because of factors such as treatment processes and chemical addition that “tie-up” phosphorus limiting the amount of phosphorus that is plant

available. As part of the Wisconsin's nutrient management plan (NMP) requirements, the accounting of all fertilizers must be included over the NMP cycle. The fertilizer value of the waste needs to be communicated to the farmer and accounted for in the NMP.

5 Schedules

5.1 Mercury Pollutant Minimization Program

As a condition of the variance to the water quality based effluent limitation(s) for mercury granted in accordance with s. NR 106.145(6), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
<p>Annual Mercury Progress Reports: Submit an annual mercury progress report related to the pollutant minimization activities for the previous year. The annual mercury progress report shall:</p> <p>Indicate which mercury pollutant minimization activities or activities outlined in the Pollutant Minimization Program Plan have been implemented and state which, if any, activities from the Pollutant Minimization Program Plan were not pursued and why;</p> <p>Include an assessment of whether each implemented pollutant minimization activity appears to be effective or ineffective at reducing pollutant discharge concentrations and identify actions planned for the upcoming year;</p> <p>Identification of barriers that have limited program effectiveness and adjustments to the program that will be implemented during the next year to help address these barriers;</p> <p>Include an analysis of trends in total effluent mercury concentrations based on mercury sampling; and</p> <p>Include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury.</p> <p>The first annual mercury progress report is to be submitted by the Due Date.</p>	03/31/2025
<p>Annual Mercury Progress Report #2: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.</p>	03/31/2026
<p>Annual Mercury Progress Report #3: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.</p>	03/31/2027
<p>Annual Mercury Progress Report #4: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.</p>	03/31/2028
<p>Final Mercury Report: Submit a final report documenting the success in reducing mercury concentrations in the effluent, as well as the anticipated future reduction in mercury sources and mercury effluent concentrations.</p> <p>The report shall:</p> <p>Summarize mercury pollutant minimization activities that have been implemented during the current permit term and state which, if any, activities from the Pollutant Minimization Program Plan were not pursued and why;</p> <p>Include an assessment of which pollutant minimization activities appear to have been effective or ineffective. Evaluate any needed changes to the pollutant reduction strategy accordingly;</p> <p>Identification of barriers that have limited program effectiveness and adjustments to the program that</p>	03/31/2029

<p>will be implemented during the next variance term (if applicable) to help address these barriers;</p> <p>Include an analysis of trends in mercury concentrations based on sampling and data during the current permit term; and</p> <p>Include an analysis of how influent and effluent mercury varies with time and with significant loadings of mercury.</p> <p>If the permittee intends to reapply for a mercury variance per s. NR 106.145, Wis. Adm. Code, for the reissued permit, a detailed Pollutant Minimization Program Plan outlining the pollutant minimization activities proposed for the upcoming permit term shall be submitted along with the final report. An updated pollutant minimization plan shall:</p> <p>Include an explanation of why or how each pollutant minimization activity will result in reduced discharge of the target pollutant;</p> <p>Evaluate any new available information on pollutant sources, timing, and concentration to update the mass balance assumptions and expected sources of the pollutant, and</p> <p>Identify any information needs that would help to better determine pollutant sources and make plans to collect that information.</p>	
<p>Annual Mercury Reports After Permit Expiration: In the event that this permit is not reissued by the date the permit expires, the permittee shall continue to submit annual mercury reports for the previous year following the due date of Annual Mercury Progress Reports listed above. Annual Mercury Progress reports shall include the information as defined above.</p>	

5.2 Effluent Limitations for E. coli (Outfall 001)

The permittee shall comply with surface water limitations for E. coli as specified. No later than 14 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance. If a submittal is required, a timely submittal fulfills the notification.

Required Action	Due Date
<p>Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.</p>	11/21/2024
<p>Operational Evaluation Report: The permittee shall prepare and submit an Operational Evaluation Report to the Department for review and approval. The report shall include an evaluation of collected effluent data and proposed operational improvements that will optimize efficacy of disinfection at the treatment plant during the period prior to complying with final E. coli limitations and, to the extent possible, enable compliance with the final E. coli limitations. The report shall include a plan and schedule for implementation of the operational improvements. These improvements shall occur as soon as possible, but not later than 4/30/2026. The report shall state whether the operational improvements are expected to result in compliance with the final E. coli limitations.</p> <p>The permittee shall implement the operational improvements in accordance with the approved plan and schedule specified in the Operational Evaluation Report and in no case later than 4/30/2026.</p> <p>If the Operational Evaluation Report concludes that the operational improvements are expected to result in compliance with the final E. coli limitations, the permittee shall comply with the final E. coli limitations by 4/30/2026 and the permittee is not required to comply with subsequent milestones identified below in this compliance schedule ('Submit Facility Plan', 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet Limitations', 'Construction Upgrade Progress Report', 'Complete</p>	10/31/2025

Construction', 'Achieve Compliance'). FACILITY PLAN - If the Operational Evaluation Report concludes that operational improvements alone are not expected to result in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance. If the Department disagrees with the conclusion of the report and determines that the permittee can achieve final E. coli limitations using the existing treatment system with only operational improvements, the Department may reopen and modify the permit to include an implementation schedule for achieving the final E. coli limitations sooner than 4/30/2029.	
Submit Facility Plan: If the Operational Evaluation Report concluded that the permittee cannot achieve final E. coli limitations with operational improvements alone, the permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor.	04/30/2026
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to achieve compliance with final E. coli limitations and a schedule for completing construction of the upgrades by the complete construction date specified below.	03/31/2027
Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41, Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	09/30/2027
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2028
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	03/31/2029
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/30/2029

5.3 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
Report on Effluent Discharge: Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.	09/30/2025
Report on Effluent Discharge and Evaluation of Need: Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.	09/30/2026

<p>The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan.</p> <p>If the Department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for Department approval no later than 90 days after written notification was sent from the Department. The Department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued.</p> <p>If, however, the Department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.</p>	
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5.4 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
<p>Land Application Management Plan Submittal: Submit an update to the sludge management plan to optimize the land application system performance and demonstrate compliance with ch. NR 204, Wis. Adm. Code, by the Due Date. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes.</p>	12/31/2024

Explanation of Schedules

Mercury Pollutant Minimization Program – This schedule is included as a condition of the variance to the water quality-based effluent limitation(s) for mercury granted in accordance with s. NR 106.145(6), Wis. Adm. Code. The schedule requires annual reports be submitted each year by the due date.

Effluent Limitations for E. coli (Outfall 001) – A compliance schedule is included in the permit to provide time for the permittee to investigate options for meeting new effluent E. coli water quality-based effluent limits while coming into compliance with the limits as soon as reasonably possible.

PFOS/PFOA Minimization Plan Determination of Need – As stated above, NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. S. NR 106.98, Wis. Adm. Code, specifies steps to generate data in order to determine the need for reducing PFOS and PFOA in the discharge. Data generated per the effluent monitoring requirements will be used to determine the need for developing a PFOS/PFOA minimization plan. As part of the schedule, the permittee is required to submit two annual Reports on Effluent Discharge.

If the Department determines that a minimization plan is needed, the permit will be modified or revoked/reissued to include additional requirements.

Land Application Management Plan – This schedule is for the submittal of an update to the Land Application Management Plan (Sludge Management Plan) in accordance with ch. NR 204, Wis. Adm. Code.

Attachments:

WQBEL Memo: Water Quality-Based Effluent Limitations for the Oconto Utility Commission WPDES Permit No. WI-0022861-10-0, by Michael Polkinghorn, EIT, Water Resources Engineer, dated August 9, 2023

Mercury PMP (Pollutant Minimization Program) Plan, dated March 28, 2024

Mercury Variance EPA Data Sheet

Expiration Date:

September 30, 2029

Justification Of Any Waivers From Permit Application Requirements:

No waivers from permit application requirements were granted.

Prepared By: Sarah Donoughe, Wastewater Specialist-Adv

Date: May 7, 2024

Notice of reissuance is published in the Oconto County Reporter, PO Box 200, Oconto, WI 54153-0200.

CORRESPONDENCE/MEMORANDUM

DATE: August 9, 2023

TO: Sarah Adkins – NER/Oshkosh Service Center

FROM: Michael Polkinghorn – NOR/Rhineland Service Center *Michael Polkinghorn*

SUBJECT: Water Quality-Based Effluent Limitations for the Oconto Utility Commission
 WPDES Permit No. WI-0022861-10-0

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable), for the discharge from the Oconto Utility Commission in Oconto County. This municipal wastewater treatment facility (WWTF) discharges to the Oconto River, located in the Lower Oconto River Watershed in the Upper Green Bay Basin. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1
BOD ₅			45 mg/L	30 mg/L	1, 2
TSS			45 mg/L	30 mg/L	1, 2
pH	9.0 s.u.	6.0 s.u.			1, 2
Bacteria					
Interim Limit Fecal Coliform				400 #/100 mL geometric mean	3
Final Limit <i>E. coli</i>				126 #/100 mL geometric mean	
Residual Chlorine	38 µg/L		38 µg/L	38 µg/L	1, 4
Ammonia Nitrogen November – April	Variable		34 mg/L	34 mg/L	4, 5
Phosphorus				1.0 mg/L 6.4 lbs/day	6
Mercury (Total Recoverable)	3.1 ng/L				7
PFOS and PFOA					8
Chloride					9
TKN, Nitrate+Nitrite, and Total Nitrogen					10
Acute WET					11

Footnotes:

1. No changes from the current permit.
2. These limits are based on the Warm Water Sport Fish (WWSF) community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code.

3. Bacteria limits apply during the disinfection season of May through September. The fecal coliform interim limit will apply until the end of the compliance schedule when *E. coli* limits take effect. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
4. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are included in bold.
5. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit. Ammonia nitrogen monitoring is recommended during May – October of the reissued permit term to determine the need for ammonia nitrogen limits during that season.

Daily Maximum Ammonia Nitrogen Limits

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

6. The concentration limit is a technology-based effluent limit as described in s. NR 217.04(1), Wis. Adm. Code. The mass limit is required because the discharge is upstream of a lake as described in s. NR 217.14(1), Wis. Adm. Code, and was updated to reflect the annual average design flow.
7. An alternative effluent limitation of 3.1 ng/L, equal to the 1-day P₉₉ of representative data, as a daily maximum may be included in the permit in place of the WQBEL if the mercury variance application that was submitted is approved by EPA. In the absence of a mercury variance, the mercury WQBEL of 1.3 ng/L as a monthly average, mass limits, and additional concentration limits to meet the expression of limits requirements in s. NR 106.07, Wis. Adm. Code, would be required.
8. Monitoring at a frequency of every other month is required in accordance with s. NR 106.98(2), Wis. Adm. Code.
9. Chloride monitoring is recommended to ensure that 11 sample results are available at the next permit issuance to meet the data requirements of s. NR 106.85, Wis. Adm. Code.
10. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Total nitrogen is the sum of nitrate (NO₃), nitrite (NO₂), and total Kjeldahl nitrogen (TKN) (all expressed as N).
11. Two acute whole effluent toxicity (WET) tests are recommended during the reissued permit term. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge and should continue after the permit expiration date (until the permit is reissued).

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Michael Polkinghorn at (715) 360-3379 or Michael.Polkinghorn@wisconsin.gov and Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (3) – Narrative, discharge area map, & calculated weekly/monthly average ammonia nitrogen limits.

PREPARED BY: Michael A. Polkinghorn, E.I.T. – Water Resources Engineer

E-cc: Laura Gerold, P.E., Wastewater Engineer – NER/Green Bay Service Center
Heidi Schmitt-Marquez, Regional Wastewater Supervisor – NER/Green Bay Service Center
Diane Figiel, P.E., Water Resources Engineer – WY/3
Nate Willis, P.E., Wastewater Engineer – WY/3

**Water Quality-Based Effluent Limitations for
Oconto Utility Commission**

WPDES Permit No. WI-0022861-10-0

Prepared by: Michael A. Polkinghorn, E.I.T.

PART 1 – BACKGROUND INFORMATION

Facility Description

The Oconto Utility Commission (Oconto UC) treats wastewater generated within the City of Oconto as well as the North Shore, Pensaukee and Town of Oconto Sanitary Districts and receives sludge from the City of Oconto Falls (WPDES Permit No. WI-0022870) and Village of Suring (WPDES Permit No. WI-0020877) wastewater treatment facilities. Treatment consists of a mechanical bar screen, grit removal, primary clarification, trickling filtration, aeration basins, alum addition for phosphorus removal, final clarification, chlorine gas for disinfection and sodium bisulfate for dechlorination. The trickling filtration step is present but has not been utilized in the wastewater treatment train since 2017. Effluent is discharged on a continuous basis via Outfall 001 to the north bank of the Oconto River, approx. 10 ft west of the Oconto yacht club inlet.

During the current permit term the aeration step was upgraded from surface aerators to fine bubble diffusion aeration. During the reissued permit term a new headworks will be added including new screens, grit system, influent wet well, submersible pumps, control room, alum addition relocation, and reclamation water system relocation.

Attachment #2 is a discharge area map of Outfall 001.

Existing Permit Limitations

The current permit, expired on 09/30/2022, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
BOD ₅			45 mg/L	30 mg/L		1, 2
TSS			45 mg/L	30 mg/L		1, 2
pH	9.0 s.u.	6.0 s.u.				1, 2
Fecal Coliform May – September			656#/100 mL geometric mean	400#/100 mL geometric mean		3
Residual Chlorine	38 µg/L		38 µg/L	38 µg/L		3
Ammonia Nitrogen November – April	Variable		34 mg/L	34 mg/L		3, 4
Phosphorus				1.0 mg/L 12.2 lbs/day		5

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Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Mercury (Total Recoverable)	9.1 ng/L					6
Acute WET						7

Footnotes:

1. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
2. These limits are based on the Warm Water Sport Fish (WWSF) community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code.
3. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are included in bold.
4. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit.

Daily Maximum Ammonia Nitrogen Limits

Effluent pH - s.u.	NH ₃ -N Limit – mg/L	Effluent pH - s.u.	NH ₃ -N Limit – mg/L
pH ≤ 7.5	> 34	8.2 < pH ≤ 8.3	9.4
7.5 < pH ≤ 7.6	34	8.3 < pH ≤ 8.4	7.8
7.6 < pH ≤ 7.7	29	8.4 < pH ≤ 8.5	6.4
7.7 < pH ≤ 7.8	24	8.5 < pH ≤ 8.6	5.3
7.8 < pH ≤ 7.9	20	8.6 < pH ≤ 8.7	4.4
7.9 < pH ≤ 8.0	17	8.7 < pH ≤ 8.8	3.7
8.0 < pH ≤ 8.1	14	8.8 < pH ≤ 8.9	3.1
8.1 < pH ≤ 8.2	11	8.9 < pH ≤ 9.0	2.6
		9.0 < pH	2.6

5. The concentration limit is a technology-based effluent limit as described in s. NR 217.04(1), Wis. Adm. Code. The mass limit is required because the discharge is upstream of a lake as described in s. NR 217.14(1), Wis. Adm. Code.
6. The interim limit is an alternative mercury effluent limit based on the variance granted by EPA as described in s. NR 106.145(4), Wis. Adm. Code, for the current permit term. This limit is based on the 1-day P₉₉ of effluent data and includes implementation of a pollutant minimization plan.
7. Two acute whole effluent toxicity (WET) tests were required during Q2 2019 and Q3 2021 respectively.

Receiving Water Information

- Name: Oconto River
- Waterbody Identification Code (WBIC): 440200.
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply. CW and Public Water Supply criteria are used for bioaccumulating compounds of concern, because the discharge is within the Great Lakes basin.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q₁₀ and

Attachment #1

7-Q₂ values are from USGS at Oconto WI, where Outfall 001 is located.

7-Q₁₀ = 200 cubic feet per second (cfs)

7-Q₂ = 265 cfs

90-Q₁₀ = 223 cfs

Harmonic Mean Flow = 435 cfs

- Hardness = 150 mg/L as CaCO₃. This value represents the geometric mean of data (n = 93) from sampling done in the Oconto River (January 1988 – June 2015), from the mouth upstream to Gillett, WI.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%.
- Source of background concentration data: Background data for substances came from multiple sources listed below:
 - Chloride: Oconto River at the Iron Bridge in Stiles (Surface Water Information Monitoring System (SWIMS) ID: 104430.
 - Mercury: ST Paper LLC Sample Point 703 Intake Water Mercury Testing (July 2017 – May 2023).
 - Remaining substances: Wolf River at New London WI.
 - All numerical values are shown in the tables in Part 2 below in the columns titled “Mean Background”. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen and phosphorus are described later.
- Multiple dischargers: There are several other dischargers to the Oconto River however they are not in the immediate vicinity and the mixing zones do not overlap. Therefore, the other dischargers do not impact this evaluation.
- Impaired water status: The Oconto River (stream miles 0 – 9.94) is on the Clean Water Act (CWA) Section 303(d) list for mercury contaminated fish tissue. Approx. 1.4 mi downstream, Green Bay/Lake Michigan is on the CWA Section 303(d) list for polychlorinated biphenyls contaminated fish tissue. These impairments do not impact this evaluation due to them being subject to the fish tissue only.

Effluent Information

- Design flow rate(s):
 - Annual average = 0.763 million gallons per day (MGD)
 - For reference, the actual average flow from July 2017 – May 2023 was 0.595 MGD. This overall average excludes effluent flow data reported during the 2019 and 2020 calendar years due to extreme flooding events caused by high water levels in Lake Michigan. The flooding would cause effluent flow to back up starting from the chlorine contact chamber up into the sanitary sewer system. Therefore, effluent flow data, and other effluent data determined on a case-by-case basis, will not be utilized in recommendations in this evaluation.
- Hardness = 292 mg/L as CaCO₃. This value represents the geometric mean of data (n = 4, February 2022) from the permit application.
- Acute dilution factor used in accordance with s. NR 106.06(3)(c), Wis. Adm. Code: Not applicable – this facility does not have an approved zone of initial dilution (ZID).
- Water source: Domestic wastewater with no industrial contributors. Water supply from both municipal and private wells.
- Additives: Chlorine, sodium bisulfite, and alum.
- Effluent characterization: This facility is categorized as a minor municipality, so the permit

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application required effluent sample analyses for a limited number of common pollutants, as specified in s. NR 200.065, Table 1, Wis. Adm. Code, primarily metal substances plus chloride and hardness.

- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2 below, in the columns titled “MEAN EFFL. CONC.”. Otherwise, substances with multiple effluent data are shown in the tables below or in their respective parts in this evaluation.
- Mercury field blanks indicated contamination was present from either sample transportation or environmental sources via 5 detects on the 08/26/2020, 02/24/2022, 06/15/2022, 09/28/2022, and 12/14/2022 samples respectively. Specifically the 02/24/2022, 06/15/2022, and 12/14/2022 samples had detectable values of 0.00001 ng/L, which is an insignificant amount of contamination and is questionable if the analytical method used can accurately measure such a low concentration considering the limits of detection (LOD) for the field blanks are 0.0001 – 0.20 ng/L. The nondetectable 06/10/2021 and 12/03/2021 samples at an LOD of 0.0001 ng/L also share this concern. Therefore, only the 08/26/2020 and 09/28/2022 effluent mercury samples associated with those blanks are not used in this evaluation.
- An effluent chlorine sample of 536 µg/L (09/17/2020) is observed to be significantly higher than the remainder of the effluent chlorine dataset and occurred during the extreme flooding events. Oconto UC was also having problems with their sodium bisulfite pump used for dechlorination. Therefore, this effluent sample is not considered representative of the discharge and is not utilized in this evaluation.

Chlorine Effluent Data

Statistics	Conc. (µg/L)
1-day P ₉₉	23
4-day P ₉₉	12
30-day P ₉₉	5.0
Mean	1.7
Std	8.5
Sample size	627
Data Range	<0.005 - 36
Date Range	July 2017 – May 2023

Copper & Chloride Effluent Data

Sample Date	Copper (µg/L)	Chloride (mg/L)
02/14/2022	7	217
02/17/2022	5.6	203
02/21/2022	6.2	221
02/24/2022	7.2	355
02/28/2022	6.5	
03/03/2022	5.9	
03/07/2022	5.2	
03/10/2022	6.4	
03/14/2022	5.6	
03/17/2022	7.8	
03/21/2022	5.9	
Mean		249

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Sample Date	Copper (µg/L)	Chloride (mg/L)
1-day P ₉₉	8.3	
4-day P ₉₉	7.3	

Mercury Effluent Data

Sample Date	Conc. (ng/L)	Sample Date	Conc. (ng/L)	Sample Date	Conc. (ng/L)
08/09/2017	2.20	07/10/2019	1.70	12/03/2021	1.60
12/07/2017	1.60	11/05/2019	1.40	02/24/2022	1.50
03/05/2018	0.75	02/27/2020	0.75	06/15/2022	2.50
05/02/2018	1.60	04/20/2020	1.10	12/14/2022	1.90
09/11/2018	2.40	11/11/2020	2.10	02/09/2023	1.70
01/21/2019	1.30	02/24/2021	0.90	04/04/2023	1.50
03/12/2019	1.30	06/10/2021	0.56		
05/29/2019	1.70	08/25/2021	1.00		
1-day P ₉₉ = 3.13 ng/L					
4-day P ₉₉ = 2.22 ng/L					
30-day P ₉₉ = 1.74 ng/L					

The following table presents the average concentrations and loadings at Outfall 001 from July 2017 – May 2023 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameter Averages with Limits

Parameter	Average Measurement*	Average Mass Discharged
BOD ₅	16 mg/L	
TSS	9.1 mg/L	
pH field	6.95 s.u.	
Fecal Coliform	98 #/100 mL	
Chlorine	1.7 µg/L	
Ammonia Nitrogen	4.5 mg/L	
Phosphorus	0.42 mg/L	2.76 lbs/day
Mercury	1.50 ng/L	

*Any parameter results below the level of detection (LOD) were included as zeroes in calculation of average.

PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99th percentile (or P₉₉) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)

- If fewer than 11 detected results are available, the mean effluent concentration exceeds 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

Acute Limits based on 1-Q₁₀

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q₁₀ receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(\text{WQC}) (Q_s + (1-f) Q_e) - (Q_s - f Q_e) (C_s)}{Q_e}$$

Where:

WQC = ATC or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Q_s = average minimum 1-day flow which occurs once in 10 years (1-day Q₁₀)

if the 1-day Q₁₀ flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q₁₀).

Q_e = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

C_s = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q₁₀ method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is not the case for Oconto UC and the limits are set based on two times the ATC.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling. All concentrations are expressed in terms of micrograms per liter (µg/L), except for hardness and chloride (mg/L) and mercury (ng/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 160 cfs, (1-Q₁₀ (estimated as 80% of 7-Q₁₀)), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD.* mg/L	ATC	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P ₉₉	1-day MAX. CONC.
Chlorine		19.0	38.1		1.7		36
Arsenic		340	680	136	<2.8		<2.8
Cadmium	292	35.2	70.4	14.1	<0.6		<0.6
Chromium	292	4,333	8,665	1,733	4		4
Copper	292	42.6	85.2			8.3	7.8
Lead	292	301	602	120	<7		<7
Mercury (ng/L)		830	1,660			3.13	2.5
Nickel	268	1,080	2,162	432	6		6

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SUBSTANCE	REF. HARD.* mg/L	ATC	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P ₉₉	1-day MAX. CONC.
Zinc	292	307	614	123	25		25
Chloride (mg/L)		757	1,514	303	249		355

* The indicated hardness may differ from the effluent hardness because the effluent hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the acute criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.

** The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q₁₀ flow rates per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 50 cfs (¼ of the 7-Q₁₀), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD. mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P ₉₉
Chlorine		7.28		316		1.7	12
Arsenic		152		6,598	1,320	<2.8	
Cadmium	150	3.38	0.133	141	28.2	<0.6	
Chromium	150	184	0.704	7,953	1,591	4	
Copper	150	14.6	1.06	590			7.3
Lead	150	41.4	0.247	1,786	357	<7	
Mercury (ng/L)		440	1.30	440			2.22
Nickel	150	73.6		3,189	638	6	
Zinc	150	172	1.8	7,363	1,473	25	
Chloride (mg/L)		395	10.9	16,663	3,333	249	

Monthly Average Limits based on Wildlife Criteria (WC)

RECEIVING WATER FLOW = 56 cfs (¼ of the 90-Q₁₀), as specified in s. NR 106.06(4), Wis. Adm. Code

SUBSTANCE	WC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	30-day P ₉₉
Mercury (ng/L)	1.3	1.30	1.3	1.50

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 109 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P ₉₉
Cadmium	370	0.133	34,441	6,888	<0.6	
Chromium	3,818,000	0.704	355,519,911	71,103,982	4	
Lead	140	0.247	13,014	2,603	<7	
Mercury (ng/L)	1.5	1.30	1.5			1.50
Nickel	43,000		4,004,023	800,805	6	

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 109 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3		1,239	248	<2.8

In addition to evaluating the need for limits for each individual substance for which HCC exist, s. NR 106.06(8), Wis. Adm. Code, requires the evaluation of the cumulative cancer risk. Because no effluent limits are needed based on HCC, determination of the cumulative cancer risk is not needed per s. NR 106.06(8), Wis. Adm. Code.

Conclusions and Recommendations

Based on a comparison of the effluent data and calculated effluent limitations, effluent limitations are required for mercury and chlorine. Limits and monitoring recommendations are made in the paragraphs below:

Total Residual Chlorine – Because chlorine is added as a disinfectant, effluent limitations are recommended to assure proper operation of the de-chlorination system. Section NR 210.06(2)(b), Wis. Adm. Code, states, “When chlorine is used for disinfection, the daily maximum total residual chlorine concentration of the discharge may not exceed 0.10 mg/L.” Because the WQBELs are more restrictive, they are recommended instead. **Specifically, a daily maximum limit of 38 µg/L is required.** Due to revisions to s. NR 106.07(2), Wis. Adm. Code, mass limitations are no longer required. The current permit has weekly and monthly average chlorine limits of 38 µg/L due to the expression of limits requirements as described in s. NR 106.07, Wis. Adm Code. **These limits are required to be retained during the reissued permit term.**

Chloride – Considering available effluent data from the current permit term (February 2022), the mean effluent concentration is 249 mg/L. This effluent concentration is below the calculated WQBELs for chloride; **therefore no effluent limits are recommended.** Because the mean effluent concentration is close to exceeding 1/5 of the calculated daily maximum limit, **chloride monitoring is recommended to ensure that 11 sample results are available at the next permit issuance to meet the data requirements of s. NR 106.85, Wis. Adm. Code.**

Mercury – A review of effluent data indicates the 30-day P₉₉ is 1.50 ng/L, which is above the wildlife criterion of 1.3 ng/L. **Therefore, the monthly average limit of 1.3 ng/L is recommended during the reissued permit term.**

Section NR 106.145(4), Wis. Adm. Code, allows for eligibility for an alternative mercury effluent limitation if the permittee applies for an alternative mercury limit, which includes the submittal of a pollutant minimization plan. Oconto UC has submitted this application. Section NR 106.145(5), Wis. Adm. Code, specifies that an alternative limitation shall equal the 1-day P₉₉ of the effluent data and shall be expressed as a daily maximum concentration. Therefore, if a variance is granted and approved by US Environmental Protection Agency, then **an alternative mercury limitation of 3.1 ng/L as a daily maximum is required for Oconto UC.** The previous permit included an alternative effluent limit, (or “variance”), from the calculated WQBEL for Mercury, of 9.1 ng/L as a daily maximum.

In the absence of a mercury variance, mass limits and additional concentration limits to meet the expression of limits requirements in s. NR 106.07, Wis. Adm. Code, would be required.

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Based on the type of discharge, the effluent flow rate, lack of indirect dischargers contributing to the collection system, and presence of a PFOS fish consumption advisory in this section of the Oconto River; **PFOS and PFOA monitoring is recommended at a frequency of every other month during the reissued permit term.**

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. The current permit has daily maximum, weekly average and monthly average limits during November – April. These limits are re-evaluated at this time due to the following changes:

- Subchapter IV of ch. NR 106, Wis. Adm. Code allows limits based on available dilution instead of limits set to twice the acute criteria.
- The maximum expected effluent pH has changed.
- Evaluate the need of ammonia nitrogen limits during May – October.

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

Daily maximum limitations are based on ATC in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The ATC for ammonia is calculated using the following equation:

$$\text{ATC in mg/L} = [A \div (1 + 10^{(7.204 - \text{pH})})] + [B \div (1 + 10^{(\text{pH} - 7.204)})]$$

Where:

A = 0.411 and B = 58.4 for a WWSF community, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data from the current permit term excluding the 2019 and 2020 calendar year was examined as part of this evaluation and a total of 1,002 sample results are available. The maximum reported value was 7.81 s.u. (Standard pH Units). The effluent pH was 7.60 s.u. or less 99% of the time. The 1-day P₉₉, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 7.56 s.u. The mean plus the standard deviation multiplied by a factor of 2.33, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 7.54 s.u. Therefore, a value of 7.56 s.u. is believed to represent the maximum reasonably expected pH, and therefore most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 7.56 s.u. into the equation above yields an ATC = 18.2 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method

In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations will be based on the 1-Q₁₀ low flow method if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

Attachment #1

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q₁₀ (estimated as 80 % of 7-Q₁₀) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

Method	Ammonia Nitrogen Limit (mg/L)
2×ATC	36
1-Q ₁₀	2,500

The 2×ATC method yields the most stringent limits for Oconto UC.

The current permit has variable daily maximum effluent limits based on effluent pH during November - April. Presented below is a table of daily maximum limitations corresponding to various effluent pH values.

Daily Maximum Ammonia Nitrogen Limits – WWSF Community

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

Section NR 106.33(2), Wis. Adm. Code, was updated effective September 1, 2016. As a result, seasonal 20 and 40 mg/L thresholds for including ammonia limits in municipal discharge permits are no longer applicable under current rules. As such, the table has been expanded from the table in the current permit to include ammonia nitrogen limits throughout the pH range.

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)

The weekly and monthly average ammonia nitrogen limits calculation from the previous limit evaluation (May 2007) do not change because there have been no changes in the effluent and receiving water flow rates. The calculations from the previous limit evaluation are included as attachment #3.

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from July 2017 – May 2023, with those results being compared to the calculated limits to determine the need to include ammonia limits in the Oconto UC permit for the respective month ranges. That need is determined by calculating 99th upper percentile (or P₉₉) values for ammonia during each of the month ranges and comparing the daily maximum values to the daily maximum limit.

Attachment #1

Ammonia Nitrogen Effluent Data

Statistics (mg/L)	May – October	November – April
1-day P ₉₉	18	29
4-day P ₉₉	10	16
30-day P ₉₉	4.5	8.7
Mean*	2.1	5.6
Std	4.3	6.1
Sample size	189	309
Range	<0.1 - 24	<0.1 - 40

*Values lower than the level of detection were substituted with a zero

Based on this comparison, daily maximum limits are required during November – April. The permit currently has daily maximum, weekly average, and monthly average during November – April. **Where there are existing ammonia nitrogen limits in the permit, the limits must be retained regardless of reasonable potential, consistent with s. NR 106.33(1)(b), Wis. Adm. Code:**

(b) If a permittee is subject to an ammonia limitation in an existing permit, the limitation shall be included in any reissued permit. Ammonia limitations shall be included in the permit if the permitted facility will be providing treatment for ammonia discharges.

Ammonia nitrogen monitoring is recommended during May – October of the reissued permit term to determine the need for ammonia nitrogen limits during that season.

Antidegradation

The weekly and monthly average ammonia nitrogen limits equal to 34 mg/L in the current permit would increase to 108 mg/L as a result of expanding the pH range of the variable daily maximum ammonia nitrogen limits table based on effluent pH to equal the pH range of the pH limits in the current permit. Those weekly and monthly average ammonia nitrogen limits are also required by the expression of limits requirements and are based on the highest daily maximum ammonia nitrogen limit in the table.

Because an effective limit(s) in the permit are proposed to be made less stringent, Oconto UC would be considered an increased discharge as described in s. NR 207.02(6)(a), Wis. Adm. Code. Therefore, the applicable antibacksliding and antidegradation requirements in ch. NR 207, Wis. Adm. Code, must be met before the limits can be increased. An initial review of effluent ammonia nitrogen data from Outfall 001 shows Oconto UC can currently meet the current weekly and monthly average ammonia nitrogen limits. **Therefore, the weekly and monthly average ammonia nitrogen limits in the current permit cannot be increased and are recommended to continue during the reissued permit term.**

Conclusions and Recommendations

In summary, after rounding to two significant figures, the following ammonia nitrogen limitations are recommended. No mass limitations are recommended in accordance with s. NR 106.32(5), Wis. Adm Code. Limits required to meet the expression of limits requirements are included in bold.

Final Ammonia Nitrogen Limits

	Daily Maximum mg/L	Weekly Average mg/L	Monthly Average mg/L
November – April	Variable	34	34

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

On May 1, 2020, revisions to chs. NR 102 and NR 210, Wis. Adm. Codes, became effective which replace fecal coliform limits with new *Escherichia coli* (*E. coli*) limits for protection of recreational uses. Section NR 210.06(2)(a)1, Wis. Adm. Code, includes two limits which must be included in permits for facilities which are required to disinfect:

1. The geometric mean of *E. coli* bacteria in effluent samples collected in any calendar month may not exceed 126 counts/100 mL.
2. No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 counts/100 mL.

E. coli monitoring is recommended at the same frequency that fecal coliform monitoring is required in the current permit. Because Oconto UC's permit requires weekly monitoring, the 410 counts/100 mL limit will effectively function as a daily maximum limit unless the facility performs additional monitoring. Any additional monitoring beyond what is required by the permit must also be reported on the DMR as required in the standard requirements section of the permit.

These limits are required during May through September. No changes are recommended to the current recreational period and the required disinfection season.

Effluent Data

Oconto UC has monitored effluent *E. coli* from May 2021 – September 2021 and a total of 31 results are available. A geometric mean of 126 counts/100 mL was never exceeded with a maximum monthly geometric mean of 91 counts/100 mL. Effluent data has exceeded 410 counts/100 mL 2 times (which is 6% of the total sample results). The maximum reported value was 650 counts/100 mL (07/28/2021) followed by 449 counts/100 mL (08/04/2021). Based on this effluent data it appears that the facility cannot meet new *E. coli* limits and a compliance schedule is needed in the reissued permit.

Interim Limit

During the compliance schedule, an interim limit applies to prevent back-sliding from the current level of disinfection during the compliance schedule period. **Therefore, the current fecal coliform limit shall be included in the reissued permit as an interim limit of 400 counts/100 mL as a monthly geometric mean. Any weekly geometric mean limit which was included in the current permit for expression of limits purposes does not need to be included in the permit as an interim limit.**

PART 5 – PHOSPHORUS

Technology-Based Effluent Limit

Subchapter II of Chapter NR 217, Wis. Adm. Code, requires municipal wastewater treatment facilities that discharge greater than 150 pounds of total phosphorus per month to comply with a monthly average limit of 1.0 mg/L, or an approved alternative concentration limit. **Because Oconto UC currently has a limit of 1.0 mg/L, this limit should be included in the reissued permit.** This limit remains applicable unless a more stringent WQBEL is given. In addition, the need for a WQBEL for phosphorus must be considered.

Water Quality-Based Effluent Limits (WQBEL)

Revisions to administrative rules regulating phosphorus took effect on December 1, 2010. These rule revisions include additions to s. NR 102.06, Wis. Adm. Code, which establish phosphorus standards for surface waters. Subchapter III of NR 217, Wis. Adm. Code, establishes procedures for determining WQBELs for phosphorus, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.100 mg/L applies for Oconto River as described in s. NR 102.06(3)(a)29, Wis. Adm. Code.

The conservation of mass equation is described in s. NR 217.13(2)(a), Wis. Adm. Code, for phosphorus WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream phosphorus concentrations (Cs) provided below.

$$\text{Limitation} = [(WQC)(Qs+(1-f) Qe) - (Qs-f Qe) (Cs)]/Qe$$

Where:

WQC = 0.100 mg/L for Oconto River.

Qs = 100% of the 7-Q₂ of 265 cfs.

Cs = background concentration of phosphorus in the receiving water pursuant to s. NR 217.13(2)(d), Wis. Adm. Code

Qe = effluent flow rate = 0.763 MGD = 1.18 cfs.

f = the fraction of effluent withdrawn from the receiving water = 0.

Section NR 217.13(2)(d), Wis. Adm. Code, specifies that the background phosphorus concentration used in the limit calculation formula shall be calculated as a median using the procedures specified in s. NR 102.07(1)(b) to (c), Wis. Code. All representative data from the most recent 5 years shall be used, but data from the most recent 10 years may be used if representative of current conditions.

A previous limit evaluation (April 2012) resulted in a WQBEL of 13 mg/L using a background concentration of 0.040 mg/L. Section NR 217.13(2)(d), Wis. Adm. Code, states that the determination of upstream concentrations shall be evaluated at each permit reissuance. Additional data were considered in estimating the background phosphorus concentration.

A review of all available in stream total phosphorus data (n = 12, August 2018 – July 2022) stored in the Surface Water Integrated Monitoring System database indicates the median background total phosphorus concentration in Oconto River at Oconto WI Highway 41 Bridge (SWIMS station ID: 433002) is 0.033 mg/L, approx. 1.75 mi upstream of Outfall 001.

Substituting a median value of 0.033 mg/L into the limit calculation equation above, the calculated limit is 15 mg/L. Oconto UC has a technology-based effluent limit of 1.0 mg/L effective in the current permit and is more stringent than the applicable phosphorus WQBEL. **Therefore, a phosphorus WQBEL is not recommended during the reissued permit term.**

Mass Limits

A mass limit is also required, pursuant to s. NR 217.14(1)(b), Wis. Adm. Code, because Lake Michigan is a lake approx. 1.4 mi downstream of Outfall 001. The monthly average mass limit in the current permit of 12.2 lbs/day was calculated using the monthly average technology-based effluent limit of 1.0 mg/L and a peak monthly design flow of 1.467 MGD. According to s. NR 217.14(3), Wis. Adm. Code, any mass limits shall be calculated using the same effluent flow used to calculate the phosphorus WQBEL, which is the annual average design flow of 0.763 MGD. **This final mass limit shall be 1.0 mg/L × 8.34 × 0.763 MGD = 6.4 lbs/day expressed as a monthly average.**

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from July 2017 – May 2023 for informational purposes.

Total Phosphorus Effluent Data

Statistics	Conc. (mg/L)	Mass (lbs/day)
1-day P ₉₉	1.664	15
4-day P ₉₉	0.949	8.0
30-day P ₉₉	0.584	4.3
Mean	0.425	2.8
Std	0.331	3.0
Sample size	924	881
Range	0.023 - 3.892	0.0497 - 39.842

PART 6 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

Due to the amount of upstream flow available for dilution in the limit calculation (Qs:Qe >20:1), the lowest calculated limitation is 120° F as a daily maximum as described in s. NR 106.55(6)(a), Wis. Adm. Code. At temperatures above approximately 103° F, conventional biological treatment systems do not function properly and experience upsets. There is no indication that this has ever occurred in this treatment system so there is no reasonable potential for the discharge to exceed this limit. **Therefore, temperature limits or monitoring are not recommended during the reissued permit term.**

PART 7 – WHOLE EFFLUENT TOXICITY (WET)

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency

Attachment #1

and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the *Whole Effluent Toxicity (WET) Program Guidance Document (2022)*.

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC₅₀ (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.
- Chronic testing is usually not recommended where the ratio of the 7-Q₁₀ to the effluent flow exceeds 100:1. For the Oconto UC, that ratio is approximately 169:1. With this amount of dilution, there is believed to be little potential for chronic toxicity effects in the Oconto River associated with the discharge from the Oconto UC. **Therefore, the need for chronic WET testing will not be considered further.**
- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.
- Shown below is a tabulation of all available WET data for Outfall 001. Efforts are made to ensure that decisions about WET monitoring and limits are made based on representative data, as specified in s. NR 106.08(3), Wis. Adm Code. Data which is not believed to be representative of the discharge was not included in reasonable potential calculations. The table below differentiates between tests used and not used when making WET determinations. Significant changes were made to WET test methods in 2004 and these changes were assumed to be fully implemented by certified labs by no later than June 2005. Therefore, only WET tests performed from June 2005 to present are shown in the table below:

WET Data History

Date Test Initiated	Acute Results LC ₅₀ %				Chronic Results IC ₂₅ %				Footnotes or Comments
	<i>C. dubia</i>	Fathead minnow	Pass or Fail?	Used in RP?	<i>C. dubia</i>	Fathead Minnow	Pass or Fail?	Use in RP?	
08/09/2005	>100	>100	Pass	Yes	>100	>100	Pass	No	
10/12/2006	>100	>100	Pass	Yes	>100	>100	Pass	No	
03/01/2007	>100	>100	Pass	Yes	>100	79.97	Pass	No	
09/26/2008	>100	>100	Pass	No	>100	>100	Pass	No	1
11/10/2009	>100	>100	Pass	No	>100	>100	Pass	No	1
08/17/2010	>100	>100	Pass	No	NA	NA	NA	No	1
10/11/2011					NA	>100	NA	No	2
02/07/2012	>100	>100	Pass	Yes	>100	>100	Pass	No	
04/10/2012	>100	>100	Pass	Yes	>100	>100	Pass	No	
07/11/2012	>100	>100	Pass	Yes					
10/16/2012	>100	>100	Pass	Yes	>100	>100	Pass	No	
04/26/2017	>100	>100	Pass	Yes					
09/11/2019	>100	>100	Pass	Yes					
07/06/2021	>100	>100	Pass	Yes					

Footnotes:

1. *Tests done by S-F Analytical, July 2008 – March 2011.* The DNR has reason to believe that WET tests completed by SF Analytical Labs from July 2008 through March 31, 2011 were not performed using proper test methods. Therefore, WET data from this lab during this period has been disqualified and was not included in the analysis.
 2. *Qualified or Inconclusive Data.* Test is not appropriate for use in reasonable potential analysis because it did not include acceptable results for both species.
- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.

$$\text{Acute Reasonable Potential} = [(TU_{\text{a effluent}}) (B)(AMZ)]$$

According to s. NR 106.08(6)(d), Wis. Adm. Code, TU_{a} and TU_{c} effluent values are equal to zero whenever toxicity is not detected (i.e. when the LC_{50} , IC_{25} or $IC_{50} \geq 100\%$).

Acute Reasonable Potential = $0 < 1.0$, **reasonable potential is not shown, and a limit is not required.**

Chronic reasonable potential is not being evaluated because there is little risk of chronic toxicity effects in the Oconto River due to a significant amount of dilution in the receiving water.

The WET checklist was developed to help DNR staff make recommendations regarding WET limits, monitoring, and other related permit conditions. The checklist indicates whether acute and chronic WET limits are needed, based on requirements specified in s. NR 106.08, Wis. Adm. Code. The checklist steps the user through a series of questions, assesses points based on the potential for effluent toxicity, and suggests monitoring frequencies based on points accumulated during the checklist analysis. As toxicity potential increases, more points accumulate, and more monitoring is recommended to ensure that toxicity is not occurring. A summary of the WET checklist analysis completed for this permittee is shown in the table below. Staff recommendations based on best professional judgment are provided below the summary table. For guidance related to reasonable potential and the WET checklist, see Chapter 1.3 of the WET Guidance Document: <https://dnr.wisconsin.gov/topic/Wastewater/WET.html>.

WET Checklist Summary

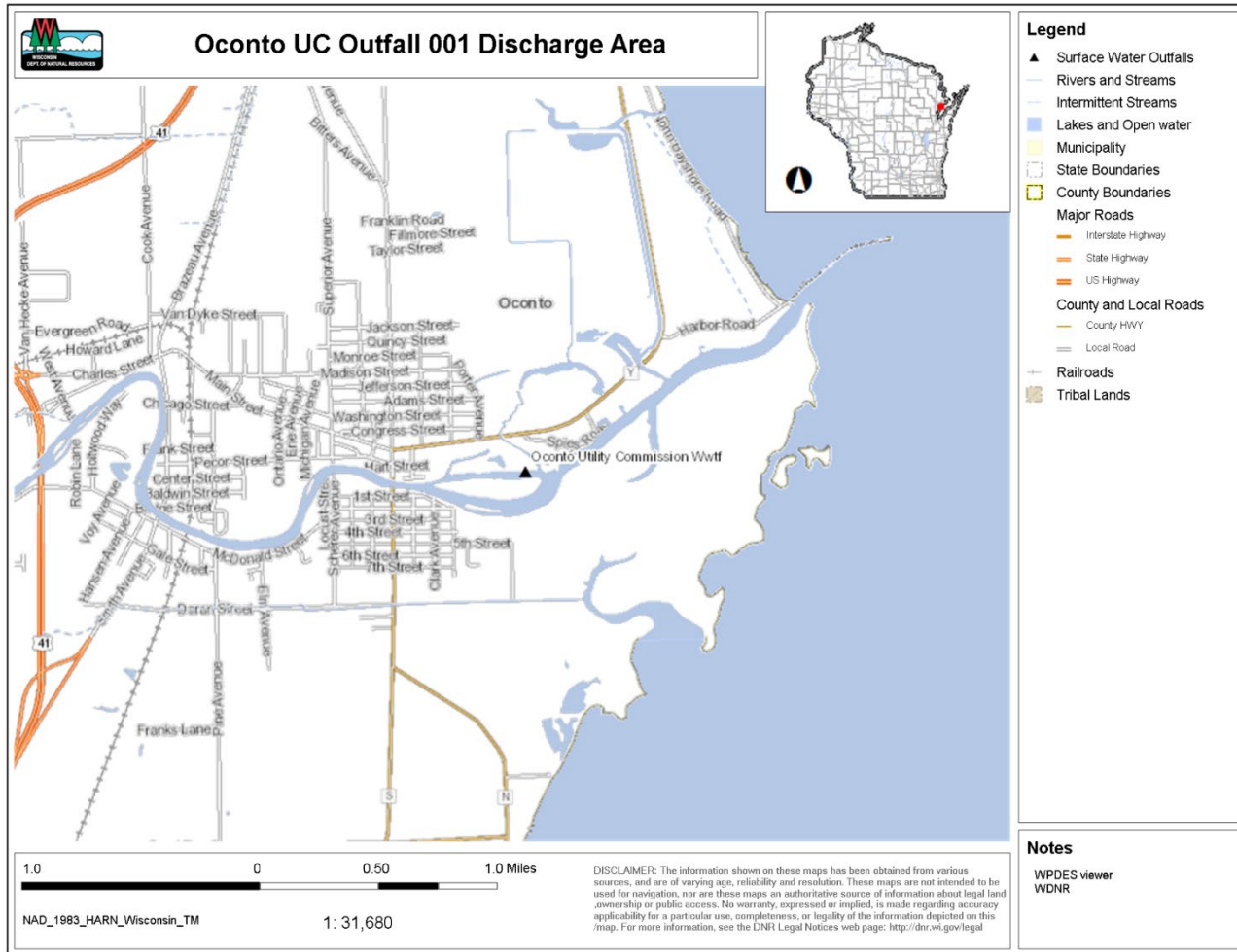
	Acute
AMZ/IWC	Not applicable. 0 Points
Historical Data	Ten tests used to calculate RP. No tests failed. 0 Points
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. 0 Points

Attachment #1

	Acute
Receiving Water Classification	WWSF community. 5 Points
Chemical-Specific Data	Reasonable potential for limits for ammonia nitrogen based on ATC; multiple substances detected. No additional compounds of concern. 8 Points
Additives	One biocide and two water quality conditioners added. Permittee has proper P chemical SOPs in place: Yes. 5 Points
Discharge Category	No industrial contributors. 0 Points
Wastewater Treatment	Secondary or better. 0 Points
Downstream Impacts	No impacts known. 0 Points
Total Checklist Points:	18 Points
Recommended Monitoring Frequency (from Checklist):	Two tests during permit term.
Limit Required?	No.
TRE Recommended? (from Checklist)	No.

- After consideration of the guidance provided in the Department's WET Program Guidance Document (2022) and other information described above, **2 acute WET tests are recommended in the reissued permit**. Tests should be done in rotating quarters to collect seasonal information about this discharge. WET testing should continue after the permit expiration date (until the permit is reissued).

Attachment #2



Calculated Weekly & Monthly Average Ammonia Nitrogen WQBELs (May 2007)

		Summer	Winter	Winter	Spring
		June – Sept.	Oct. – Dec.	Jan. – Mar.	April & May
Background Information:	7-Q ₁₀ (cfs)	200	200	200	200
	7-Q ₂ (cfs)	265	265	265	265
	Ammonia (mg/L)	0.031	0.019	0.071	0.075
	Temperature (°C)	25	7	7	10
	pH (s.u.)	7.62	7.48	7.45	7.47
	% of Flow used	100	25	25	25
	Reference Weekly Flow (cfs)	200	50	50	50
	Reference Monthly Flow (cfs)	225.25	56.3125	56.3125	56.3125
Criteria mg/L:	4-Day Chronic				
	Early Life Stages Present	4.96	11.10	11.38	11.19
	Early Life Stages Absent	4.96	18.02	18.48	14.98
	30-Day Chronic				
	Early Life Stages Present	1.98	4.44	4.55	4.48
	Early Life Stages Absent	1.98	7.21	7.39	5.99
Effluent Limitations mg/L:	Weekly Average				
	Early Life Stages Present	356.68		213.27	209.68
	Early Life Stages Absent		339.44		
	Monthly Average				
	Early Life Stages Present	158.94		94.64	92.99
Early Life Stages Absent		151.78			

Facility Specific Mercury Variance Data Sheet

Directions: Please complete this form electronically. Record information in the space provided. Select checkboxes by double clicking on them. Do not delete or alter any fields. For citations, include page number and section if applicable. Please ensure that all data requested are included and as complete as possible. Attach additional sheets if needed.

Section I: General Information

A. Name of Permittee: City of Oconto Utility Commission

B. Facility Name: Oconto Wastewater Treatment Facility

C. Submitted by: Wisconsin Department of Natural Resources

D. State: Wisconsin **Substance:** Mercury **Date completed:** February 14, 2024

E. Permit #: WI-0022861-10-0 **WQSTS #:** (EPA USE ONLY)

F. Duration of Variance **Start Date:** October 1, 2024 **End Date:** September 30, 2029

G. Date of Variance Application: February 16, 2024

H. Is this permit a: First time submittal for variance
 Renewal of a previous submittal for variance (*Complete Section X*)

I. Description of proposed variance:

The Oconto Wastewater Treatment Facility (WWTF) discharges to the Oconto River approximately 1½ miles upstream of Green Bay, an arm of Lake Michigan. The City of Oconto Utility Commission seeks a variance to the water quality standards for mercury for its WWTF.

The Department concludes that the City of Oconto Utility Commission has met the requirements of s. NR 106.145, Wisconsin Administrative Code, and s. 283.15, Wisconsin Statutes. The Department further concludes that requiring the City of Oconto Utility Commission to meet the water quality standard for mercury would result in substantial and widespread adverse social and economic impacts in its service area. Furthermore, the Department concludes that there is no feasible pollutant control technology that can be applied to achieve compliance with the mercury effluent limits that are equal to the mercury criteria. The Department therefore proposes that this permit include a discharger-specific variance to the mercury water quality standards for wildlife and human health.

The proposed variance for mercury, from the chronic water quality-based effluent limit of 1.3 ng/L, to an alternative mercury effluent limit (AMEL) of 3.3 ng/L, is expressed as a daily maximum limit. The Department concludes that the AMEL reflects the greatest pollutant reduction achievable by the permittee with the pollutant control technologies currently applied in the permittee’s WWTF. The permit requires the permittee to implement its Mercury Pollutant Minimization Program (PMP). The Department considers the highest attainable condition (HAC) of the receiving water to be the AMEL – applied as an interim effluent limit for the term of the variance – combined with the permittee’s implementation of its Mercury PMP. The term of the proposed variance is five years, concurrent with the term of the proposed WPDES permit. The underlying designated uses and criteria of Wisconsin’s mercury water quality standards (WQS) will be retained, and all other applicable WQS will remain in effect with adoption of the proposed variance.

Citation: An alternative mercury effluent limitation under s. NR 106.145, Wis. Adm. Code represents a variance to water quality standards authorized by s. 283.15, Wis. Stats.

J. List of all who assisted in the compilation of data for this form

Name	Email	Phone	Contribution
Sarah Donoughe	Sarah.Donoughe@Wisconsin.gov	(920) 366-6076	Permit Drafter
Laura Gerold	Laura.Gerold@Wisconsin.gov	(920) 366-6728	Compliance Engineer
Michael Polkinghorn	Michael.Polkinghorn@Wisconsin.gov	(715) 360-3379	Parts II D-M

Section II: Criteria and Variance Information

A. Water Quality Standard from which variance is sought: 1.3 ng/L Wildlife Criterion

B. List other criteria likely to be affected by variance: 1.5 ng/L Human Threshold Criterion

The variance limit = 1 Day P99. The limit is established in accordance with s. NR 106.145(5), Wis. Adm. Code.

O. Select all factors applicable as the basis for the variance provided under 40 CFR 131.10(g). Summarize justification below: 1 2 3 4 5 6

Section NR 106.145(1), Wis. Adm. Code, outlines several findings that justify variances for mercury. The Department intended that this provision be generally applicable to all dischargers of mercury, which produce large volumes of effluent with already extremely low mercury concentrations. The Department considers treating to produce effluent at concentrations to meet the limit to be technically and economically infeasible.

Citation: Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy, April 24, 1997, Ohio Environmental Protection Agency, Division of Surface Water and Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of Amended and New Rules in OAC Chapters 3745-1, -2, and -33.

Section III: Location Information

A. Counties in which water quality is potentially impacted: The Oconto WWTF discharges to the Oconto River in Oconto County, approximately 1½ miles from its mouth. The Oconto River flows into Green Bay, an arm of Lake Michigan. Green Bay is bordered by five Wisconsin counties: Brown, Kewaunee, Door, Oconto and Marinette; and two Michigan counties: Menominee and Delta.

B. Receiving waterbody at discharge point: Oconto River

C. Flows into which stream/river? Green Bay **How many miles downstream?** 1 ½

D. Coordinates of discharge point (UTM or Lat/Long): 44° 53' 07" N Latitude, 87° 51' 11" W Longitude

E. What are the designated uses associated with this waterbody?
The Oconto River is designated for fish and aquatic life (warm water sport fish community) and recreational uses. Green Bay is designated for fish and aquatic life (cold water community), public water supply and recreational uses.

F. What is the distance from the point of discharge to the point downstream where the concentration of the substance falls to less than or equal to the chronic criterion of the substance for aquatic life protection?
Ambient mercury concentrations in surface water resulting from the variance will be substantially less than levels that result in direct toxicity to aquatic organisms. EPA's current chronic aquatic life criterion for mercury is 0.9081 µg/L, which is approximately three orders of magnitude greater than the wildlife criteria (0.0013 µg/L). Wisconsin's criteria are 0.44 µg/L and 0.83 µg/L for chronic and acute toxicity, respectively. Therefore, instream concentrations are assumed to be well below the chronic criterion immediately at the point of effluent discharge.

G. Provide the equation used to calculate that distance See above.

H. Identify all other variance permittees for the same substance which discharge to the same stream, river, or waterbody in a location where the effects of the combined variances would have an additive effect on the waterbody: There are no other permittees that discharge to the Oconto River that have a mercury variance (see attached map, Current Outfall Variances February 2024)

Please attach a map, photographs, or a simple schematic showing the location of the discharge point as well as all variances for the substance currently draining to this waterbody on a separate sheet (see attached map, Current Outfall Variances February 2024)

I. Is the receiving waterbody on the CWA 303(d) list? If yes, please list the impairments below. Yes No Unknown

River Mile	Pollutant	Impairment
0.00 – 14.63	Mercury	Contaminated fish tissue
Machickanee Flowage (mile 14.63)	Mercury	Contaminated fish tissue

Section IV: Pretreatment (complete this section only for POTWs with DNR-Approved Pretreatment Programs. See w:\Variances\Templates and Guidance\Pretreatment Programs.docx)	
A. Are there any industrial users contributing mercury to the POTW? If so, please list.	The Oconto Utility Commission WWTF is too small to have local pretreatment authority (Design flow < 5 MGD). All users in the City of Oconto are billed as residential. There are no significant commercial, institutional, or industrial sources. All influent waste is domestic strength.
B. Are all industrial users in compliance with local pretreatment limits for mercury? If not, please include a list of industrial users that are not complying with local limits and include any relevant correspondence between the POTW and the industry (NOVs, industrial SRM updates and timeframe, etc)	N/A
C. When were local pretreatment limits for mercury last calculated?	N/A
D. Please provide information on specific SRM activities that will be implemented during the permit term to reduce the industry's discharge of the variance pollutant to the POTW	N/A
Section V: Public Notice	
A. Has a public notice been given for this proposed variance?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. If yes, was a public hearing held as well?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
C. What type of notice was given?	<input checked="" type="checkbox"/> Notice of variance included in notice for permit <input type="checkbox"/> Separate notice of variance
D. Date of public notice: <u>TBD (approx. May 2024)</u> Date of hearing: <u>July 9, 2024</u>	
E. Were comments received from the public in regards to this notice or hearing? (If yes, please attach on a separate sheet)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Section VI: Human Health	
A. Is the receiving water designated as a Public Water Supply?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The Oconto River is not designated as a public water supply; but Green Bay is so designated.
B. Applicable criteria affected by variance:	1.5 ng/L Human Threshold Criterion
C. Identify any expected impacts that the variance may have upon human health, and include any citations:	<ul style="list-style-type: none"> The proposed variance will not adversely affect human health directly through the drinking water. Wisconsin's fish consumption advisory program is designed to mitigate the effect of any ambient mercury concentration above the 1.5 ng/L water quality criterion for the protection of the fish-consuming human population by providing advice to the public to guide them on the amount of fish that may be consumed safely. Given the lack of wastewater treatment technologies capable of reducing mercury concentrations to achieve a 1.3 ng/L effluent limit, granting a variance in this situation is consistent with protecting the public health, safety and welfare because of the substantial public health and safety benefits of providing wastewater treatment, the continued commitment towards further mercury pollutant minimization, the Wisconsin fish advisory program, and the limited impact of the elevated effluent concentrations given the background mercury concentrations. DNR's findings suggest that Hg in walleye from Wisconsin lakes changed in the range of 0.5 to 0.8% per year depending on geographical position in the state during the period of 1982–2005. These trends may reflect geographically differing temporal trends in the amount of Hg deposited to Wisconsin lakes. However, long-term changes in other factors, such as water chemistry, fish growth rates, and lake levels, known to impact Hg bioavailability and accumulation may also be important. (Temporal trends of mercury concentrations in Wisconsin walleye (Sander vitreus), 1982–2005, Paul W. Rasmussen, Candy S. Schrank, Patrick A. Campfield. Ecotoxicology (2007) 16:541–550)
Section VII: Aquatic Life and Environmental Impact	

A. Aquatic life use designation of receiving water: Fish and aquatic life (warm water sport fish community)

B. Applicable criteria affected by variance: 1.3 ng/L Wildlife Criterion

C. Identify any environmental impacts to aquatic life expected to occur with this variance, and include any citations:

Not Likely to Adversely Affect

- Ambient mercury concentrations resulting from the variance will be substantially less than levels that result in direct toxicity to aquatic organisms. EPA's current chronic aquatic life criterion for mercury is 0.9081 µg/L, which is approximately three orders of magnitude greater than the wildlife criteria (0.0013 µg/L). Wisconsin's criteria are 0.44 µg/L and 0.83 µg/L for chronic and acute toxicity, respectively.
 - Hine's emerald dragonfly (*Somatochlora hineana*, endangered)
 - Higgins' Eye mussel (*Lampsilis higginsii*, endangered)
 - Winged Mapleleaf mussel (*Quadrula fragosa*, endangered)
 - Spectaclecase (*Cumberlandia monodonta*, candidate)
 - Sheepnose (*Plethobasus cyphus*, candidate)

- Low trophic level prey where mercury in prey is unlikely to accumulate to toxic levels in the organism.
 - Piping plover (*Charadrius melodus*, endangered)
 - Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*, candidate)

May Affect, Not Likely to Adversely Affect

- Bald eagle (*Haliaeetus leucocephalus*, Delisted due to Recovery)

Bald eagles consume fish and waterfowl from surface waters, which puts them at risk of exposure to toxic levels of mercury due to bioaccumulation of mercury in their prey organisms. However, despite the potential for exposure, ambient surface water data show that in recent decades, mercury levels have not increased and bald eagle populations have continued to grow. This indicates that current ambient concentrations of mercury and mercury concentrations in prey organisms do not appear to be limiting recovery of bald eagle populations in Wisconsin. Although this variance will allow permitted dischargers additional time to identify and control sources of mercury in their discharges, the pollutant minimization component of the variances should result in a net reduction in the amount of mercury discharged to Wisconsin surface waters from permitted point sources, further reducing any risk to bald eagles. In addition, the pollutant minimization programs encourage other pollution prevention efforts, which has a beneficial indirect effect of reducing the use and production of products and processes that use or contribute mercury to the environment. These efforts will also benefit bald eagles.

D. List any Endangered or Threatened species known or likely to occur within the affected area, and include any citations:

Because mercury is pervasive, persistent and bio accumulating in the environment we considered all species listed for the entire state of Wisconsin. The following is Federally Endangered, Threatened, Proposed, and Candidate Species in Wisconsin From U.S. Fish and Wildlife Service, Region 3, April 2015

MAMMALS

Canada lynx (T)
Gray wolf (E)
Northern long-eared bat (T)

BIRDS

Kirtland's warbler (E)
Piping plover (E and CH)
Red Knot (T)
Whooping crane - (NEP)

REPTILE

Eastern massasauga rattlesnake (C)

INSECTS

Hine's emerald dragonfly (E)
Karner blue butterfly (E)
Poweshiek skipperling (E and PCH)

CLAMS (Freshwater mussels, Unionids)

Higgins' eye pearl mussel (E)

Sheepnose mussel (E)
Snuffbox (E)
Spectaclecase mussel (E)
Winged mapleleaf mussel (E)

Citation: U.S. Fish & Wildlife Service – Environmental Conservation Online System (<http://www.fws.gov/endangered/>) and National Heritage Index (<http://dnr.wi.gov/topic/nhi/>)

Section VIII: Economic Impact and Feasibility

A. Describe the permittee’s current pollutant control technologies in the treatment process:
Treatment consists of a perforated plate screen (side channel has a bar screen), grit removal, primary clarification, trickling filtration, aeration basins, alum addition for phosphorus removal, final clarification, chlorine gas addition for seasonal disinfection and Bisulfate addition for dechlorination. Solids treatment consists of thickening, lime stabilization, a sludge belt press, and a covered storage structure.

B. What modifications would be necessary to comply with the current limits? Include any citations.
The Department did not evaluate what actions or modifications or other changes would be needed to meet limits based on the water quality standard. As discussed below, the Department considers treating to produce effluent at concentrations to meet the limit to be technically and economically infeasible.
Citation: Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy, April 24, 1997, Ohio Environmental Protection Agency, Division of Surface Water and Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of Amended and New Rules in OAC Chapters 3745-1, -2, and -33.

C. Identify any expected environmental impacts that would result from further treatment, and include any citations:
See above.

D. Is it technically and economically feasible for this permittee to modify the treatment process to reduce the level of the substance in the discharge? Yes No Unknown
The Department considers treating to produce effluent at concentrations to meet the limit to be technically and economically infeasible.
Citation: Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy, April 24, 1997, Ohio Environmental Protection Agency, Division of Surface Water and Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of Amended and New Rules in OAC Chapters 3745-1, -2, and -33.

E. If treatment is possible, is it possible to comply with the limits on the substance? Yes No Unknown
The Department considers treating large volumes of wastewater to produce effluent able to achieve compliance with mercury WQBELs equal to the mercury water quality criteria to be technically infeasible – not considering the economic infeasibility of such practice.
Citation: Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy, April 24, 1997, Ohio Environmental Protection Agency, Division of Surface Water and Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of Amended and New Rules in OAC Chapters 3745-1, -2, and -33.

F. If yes, what prevents this from being done? Include any citations.
See above.

G. List any alternatives to current practices that have been considered, and why they have been rejected as a course of action, including any citations:
The Department did not evaluate alternative treatment processes to comply with the mercury WQBELs, since the Department considers wastewater treatment to produce effluent at concentrations equal to the mercury criteria to be technically and economically infeasible. The Department considers mercury pollutant minimization to be a viable alternative to wastewater treatment for purposes of reducing the discharge of mercury from WWTFs. Successful implementation of Mercury PMPs has been demonstrated to result in reductions in the amount of mercury discharged to WWTFs (in the influent), leading to reductions in the amount of mercury discharged by WWTFs (in the effluent). Implementation of Mercury PMPs has been shown

to be a cost-effective means for permittees to reduce the discharge of mercury from their WWTFs. In this case, the Department considers implementation of a Mercury PMP to be the best alternative for the permittee to reduce its discharge of mercury. Thus, the permit requires the permittee to implement its Mercury PMP and submit annual reports to the Department documenting activities conducted each year and progress made toward achieving compliance with the mercury WQBELs. It is noted that the HAC is partially fulfilled through the permittee's implementation of its Mercury PMP.

Section IX: Compliance with Water Quality Standards

A. Describe all activities that have been, and are being, conducted to reduce the discharge of the substance into the receiving stream. This may include existing treatments and controls, consumer education, promising centralized or remote treatment technologies, planned research, etc. Include any citations.

The only existing treatment to remove mercury would be through typical solids separation resulting in mercury accumulating in the biosolids. As part of the previous Mercury variance, the City of Oconto focused on removing the easy to mitigate mercury that was being discharged into the collection system. The program has included outreach to the public to educate them on BMPS for proper mercury disposal. In 2017, the City also started accepting fluorescent bulbs, mercury thermostats, and other mercury containing products at the City of Oconto Recycling Center. This has resulted in the collection of 300-500 fluorescent bulbs annually and countless thermostats. Since 2013, the City focused on promoting the use of mercury BMPs to the four main waste discharging sectors, Medical, Dental, Industrial, and Educational, by talking to the proper individuals at each facility. This effort was very successful with 100% BMP implementation rate since 2014 in these sectors. The City staff members personally contact the facility manager for each waste discharger annually to ask if the mercury BMPs have been followed and for any paperwork related to these actions for future site inspections. The City also promotes the City of Oconto Clean Sweep Program. In 2020, a major source of I&I that was carrying surface water into the system that was a potential source of atmospheric mercury was eliminated. As part of the current permit application the City has prepared an updated Mercury Pollutant Minimization Program Plan that has been approved by the Department.

Citations: City of Oconto Wastewater Department Mercury Source Identification and Pollutant Minimization Control Plan (PMP) March 29, 2023.

B. Describe all actions that the permit requires the permittee to complete during the variance period to ensure reasonable progress towards attainment of the water quality standard. Include any citations.

The reissued permit will require documentation of implementation of the Mercury Pollutant Minimization Program. Annual reports will be required to document steps taken to reduce the amount of mercury discharged to the Oconto WWTF. Specific actions planned to be conducted through the PMP include: continue to update the list of facility inventories to keep the records current, identify new facilities that may need to be added to current site inventory, perform annual industrial inspections for facilities covered under the City's Pretreatment Program, maintain the ability to randomly inspect and sample facilities, perform inspections at facilities when cause identified (i.e. sampling results), perform follow-up actions in response to deficiencies identified during inspections (both pretreatment facilities and others identified), contact each facility listed in the most up to date inventory to ensure that they are following the mercury BMPs as directed, update educational materials and provide to the public regarding mercury and proper disposal, promote local clean sweep program, continue to implement O&M actions identified in the City's CMOM to reduce the amount of clear water (atmospheric mercury source) entering the system, establish a new mercury limit of 1.3 ng/L for the sewer use ordinance, spot check industrial dischargers throughout the year, perform random sampling of hauled wastes throughout the year, and develop and implement a sampling plan for evaluating legacy mercury within the collection system.

Citations: City of Oconto Wastewater Department Mercury Source Identification and Pollutant Minimization Control Plan (PMP) March 28, 2024.

Section X: Compliance with Previous Permit (Variance Reissuances Only)

A. Date of previous submittal:	<u>6/9/2017</u>	Date of EPA Approval:	<u>8/9/17</u>
B. Previous Permit #:	<u>WI-0022861-09-0</u>	Previous WQSTS #:	<u> </u> (EPA USE ONLY)
C. Effluent substance concentration:	<u>30-day P99 is 1.50</u> <u>ng/L</u>	Variance Limit:	<u>9.1 ng/L</u>
D. Target Value(s):	<u>N/A</u>	Achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partial

E. For renewals, list previous steps that were to be completed. Show whether these steps have been completed in compliance with the terms of the previous variance permit. Attach additional sheets if necessary.	
Condition of Previous Variance	Compliance
Mercury Pollutant Minimization Program -Implement PMP Submit Annual Status Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Outreach to the public to educate them on BMPS for proper mercury disposal.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
In 2017, the City started accepting fluorescent bulbs, mercury thermostats, and other mercury containing products at the City of Oconto Recycling Center. This has resulted in the collection of 300-500 of fluorescent bulbs annually and countless thermostats.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Visited with each industrial source and worked with them on their BMP for their implementation of their Chemical Management Plans. Obtained their list of chemicals and their SDS sheets to see if these are possible mercury sources.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Annually, for the four main waste discharging sectors, City staff members personally contacted the facility manager for each waste discharger to ask if the mercury BMPs have been followed and for any paperwork related to these actions for future site inspections.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Inspected facilities in the four main waste discharging sectors annually.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Promoted the City of Oconto Clean Sweep Program.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

City of Oconto Wastewater Department - Permit Number: WI0022861-09-0

Mercury Source Identification and Pollutant Minimization Control Plan (PMP)

March 28th, 2024

Section 1: Background

The Oconto Utility Commission (Sewer/Wastewater) has been monitoring mercury discharged to the Oconto River from the Oconto WWTF since 2007. In the first 5 years of monitoring, test results showed a relatively low average of 1.94 ng/L effluent mercury. In 2013 a mercury variance was granted of 9.1 ng/L along with the implementation of a PMP. The initial effort of the PMP was focused on removing the easy to mitigate mercury that was being discharged into the collection system. This program has included outreach to the public such as educational information being sent to all of the utility's customers in the newspaper, fliers distributed with recycling information, and the promotion of best management practices (BMPs) for proper mercury disposal. Since 1994, Oconto residents have been able to dispose of mercury and products containing mercury at the Oconto County Recycling Center. In 2013, the City of Oconto started a Clean Sweep program that included mercury thermometer exchange and mercury thermostat collection. Residents were encouraged to drop these items off at Oconto City Hall where then taken to a proper disposal facility. In 2017 the City of Oconto started accepting fluorescent bulbs, mercury thermostats and other mercury containing products at the City of Oconto Recycling Center in an effort to increase resident participation and make the program more user friendly. Since 2017, residents have had the ability to dispose of mercury products at our recycling center every Wednesday (8:00-3:00) and Saturday (8:00-12:00). This program has resulted in the collection of 300-500lbs of fluorescent bulbs annually and countless thermostats.

Since 2013, the Utility has focused its efforts on promoting the use of mercury BMPs to four main waste discharging sectors. These sectors are Medical, Dental, Industrial, and Educational. During this time the Utility has made it a priority to ensure that the proper individuals at each facility were made aware of the dangers associated with uncontained mercury and the proper way to handle and dispose of mercury that they may encounter at their facility. This effort was very successful with a 100% BMP implementation rate since 2014 in these sectors. The results of these efforts have been realized as the Utility has been able to reduce the amount of mercury coming through the collection system as their wastewater influent as shown in the historical sampling records (see table 1).

Section 2: Current Efforts

The Utility's current efforts are focused on the four main waste discharging sectors. Utility staff members personally contact the facility manager for each waste discharger in these sectors on an annual basis. During these conversations the facility managers are asked if the mercury BMPs have been followed and they are informed to keep any paperwork related to these actions for any possible future site inspections. (see table 2, 3, 4, & 5 for current site inventory). The Utility also promotes the City of Oconto Clean Sweep Program when asked how to dispose of hazardous household items from their customers. In 2022 there was a lapse in outreach efforts during a period of personnel change but inventories and contacts are now updated annually.

In 2020 a major influx of inflow and infiltration was found at the sight of an abandoned combination sewer pump station. At that time the high-water levels of the Oconto River were back flowing through the abandoned discharge pipe and into the collection system. After discovery, that discharge pipe was blocked off, greatly reducing our I&I. A stretch of clay tile pipe near the river that was also a source of I&I was repaired in 2020 using cure in place pipe. These leaks were a potential source of atmospheric mercury that has since been eliminated.

Section 3: Future Efforts

The mercury levels in the Utility's wastewater influent have been greatly reduced since the start of the program but are still quite variable. The implementation of BMPs by our users has decreased mercury inputs but we would like to see test results continue to decrease and become more consistent. Research and follow up discussions with past operators and independent consultants have given us some leads in finding potential legacy sources of mercury that may be persisting in our collection system. There a few areas of the collection system that still use clay tile piping, some of which received industrial inputs dating back many decades. Atmospheric mercury in the form of inflow and infiltration could also be an issue for these same areas. Investigation, diagnosis and performing of necessary repairs

may eliminate these potential legacy sources of mercury.

Another potential source of mercury is hauled waste. In the past 3 years the Utility has increased its acceptance of hauled waste in the form of leachate, lagoon water, septic and holding tank waste. We plan to increase sampling and monitoring of these hauled wastes to ensure they are safe for discharge into the collection system.

Over the next permit term, the Utility plans to update its current outreach and increase influent and collection system monitoring with the goal of pinpointing any potential sources of mercury. When a source is identified, the Utility will take the necessary steps to add this to the Mercury PMP plan and address the issue utilizing the most current mercury BMPs. (See table 6 for outreach schedules)

Section 4: Conclusion

The Oconto Utility Commission wastewater department has a small staff of two employees, that are responsible for the operation and maintenance of 38 miles of collection system, 13 lift stations and the WWTF. This staffing level makes it very difficult to commit many hours to this project. The efforts outlined above are believed to be the best use of these limited resources to have the greatest impact on the mercury levels entering the treatment facility. The Utility’s staff prides themselves on being stewards of the environment and ensuring that the waters of the Oconto River continue to be fishable and swimmable. This dedication to the overall health of the environment ensures that the staff will do everything they can to make this mercury PMP as successful as possible. The Utility has requested to maintain its current variance of 9.1 ng/L to give the staff time to collect more data and make educated decisions on the proper way to minimize as much mercury discharge as possible.

Table #1 – Historical Data (yearly average mercury results)

<u>Total Recoverable Mercury Annual Averages</u>			
Year	Inf conc ng/L	Eff Conc ng/L	Biosolids Conc mg/kg
2007	240.00	0.63	-
2008	30.00	3.18	-
2009	193.50	3.28	-
2010	22.25	1.46	-
2011	30.50	1.18	-
2012	56.50	13.42	0.13
2013	19.90	1.23	0.27
2014	13.23	2.17	0.17
2015	52.00	1.38	0.20
2016	10.25	2.91	0.10
2017	8.88	2.05	0.13
2018	11.63	1.51	0.00
2019	10.58	1.53	0.11
2020	15.63	1.29	0.20
2021	23.75	1.02	0.00
2022	17.75	1.88	0.00
2023	8.68	1.95	0.18
16 yr avg	45.00	2.47	0.12

Chart 1

Yearly Average Influent Mercury

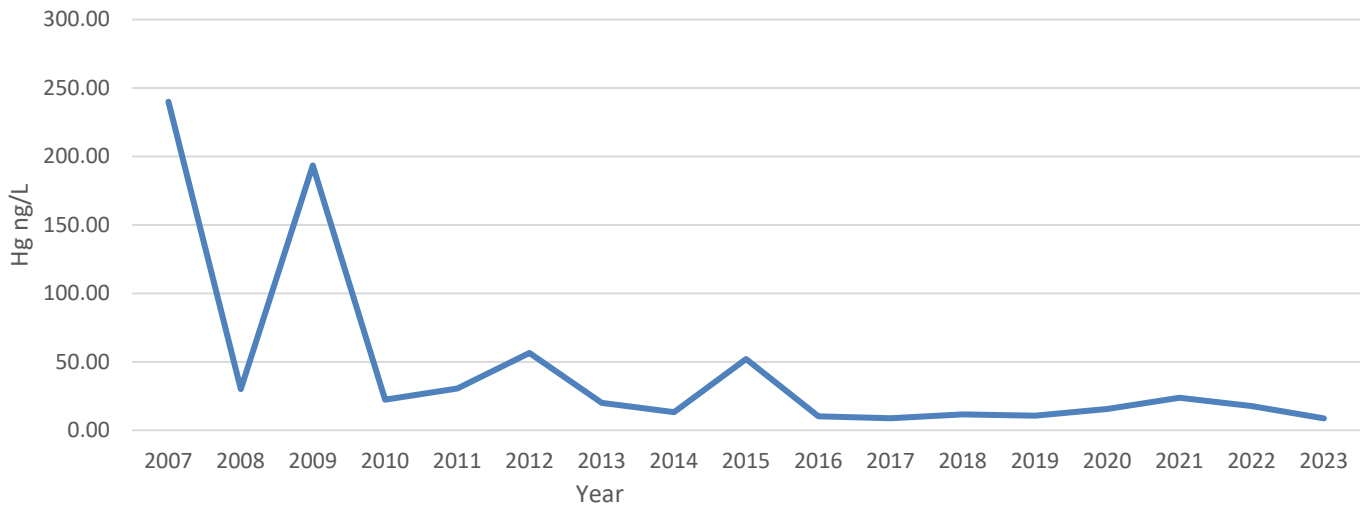


Chart 2

Yearly Average Effluent Mercury

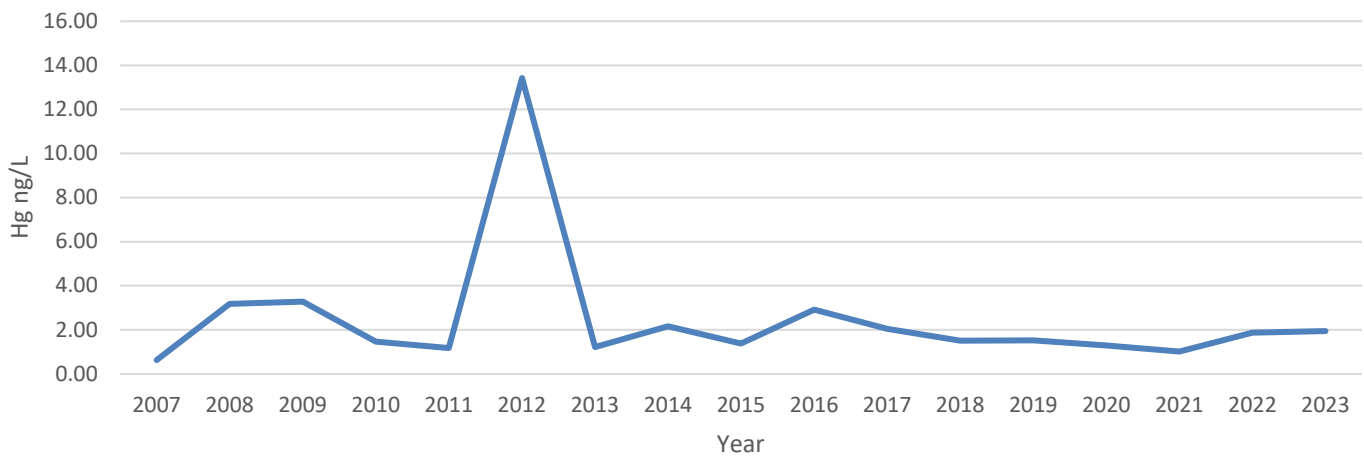
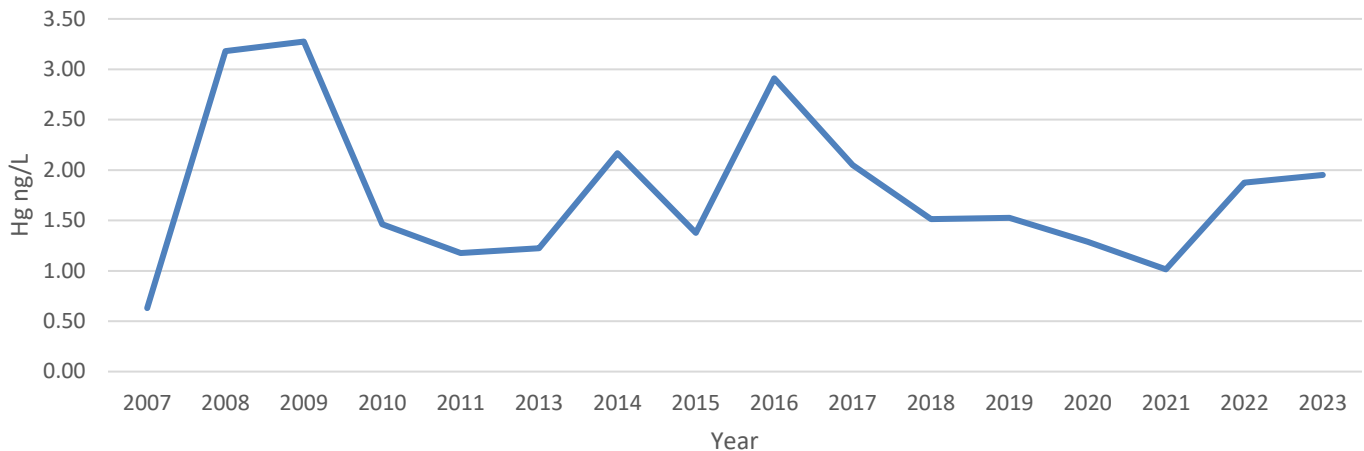


Chart 3

Yearly Average Effluent Mercury (2012 excluded)



This chart omits the 2012 outlier sample so a smaller scale can be used to better visualize the variation in typical effluent mercury samples.

Table #2 - Industrial Facility Inventory

Name	Address	City, State, Zip Code	Type of Facility	Contact	Phone
Hoffmaster Printing	139 Evergreen Rd	Oconto, WI, 54153	Commercial Printing	Edward Gumbert	800-421-0039
KCS International	804 Pecor St	Oconto, WI, 54153	Boat Manufacturing	Kevin Strom	920-834-2211
LeTourneau Plastics	160 Charles St	Oconto, WI, 54153	Plastic Molding	Joe Last	920-834-2777
Neroco Manufacturing	1023 Superior Ave	Oconto, WI, 54153	Conveyer Manufacturing	Ronald Clark	844-293-2814
Oconto County Courthouse/Jail	301 Washington St	Oconto, WI, 54153	Government	Scott Krueger	920-834-6896
Oconto County Hwy Department	202 Van Dyke St	Oconto, WI, 54153	Government	Brandon Hytinen	920-834-6809
Oconto County MRF	153 Evergreen Rd	Oconto, WI, 54153	Recycling Center	Pat Virtues	920-834-6827
Oconto Metal Finishing	617 Farnsworth Ave	Oconto, WI, 54153	Metal Polishing	Rebecca Wiegman	920-834-4922
Oconto WWTP	1620 Main St	Oconto, WI, 54153	WasteWater	Ben Thome	920-373-4757
Unlimited Services	170 Evergreen Rd	Oconto, WI, 54153	Wire Harnesses	Brad Gromoski	920-516-7254
Yak Fab	190 N. Katch Dr	Oconto, WI, 54153	Metal Fab/Welding	James Viestenz	920-834-2422

Table #3 - Medical Facility Inventory

Name	Address	City, State, Zip Code	Type of Facility	Contact	Phone
Bellin Hospital	820 Arbutus Ave	Oconto, WI, 54153	Hospital	Michael Dobson	715-938-7084
Prevea Clinic	620 Smith Ave	Oconto, WI, 54153	Clinic	Jay Kotecki	920-660-7844
Oconto Vet Service	6220 VanHecke Ave	Oconto, WI, 54153	Veterinary	Chris Holder	920-834-5858
Bright Life Senior Care	229 Van Dyke	Oconto, WI, 54153	Assisted Living	Shannon Schilawski	920-834-4122
Bright Life Senior Care	425 Pecor St.	Oconto, WI, 54153	Assisted Living	Shannon Schilawski	920-834-4122
The Bay at Oconto	101 First St.	Oconto, WI, 54153	Nursing Home	Evan Kinney	920-834-4575
Care Partners Assisted Living	301 Pine Ave	Oconto, WI, 54153	Assisted Living	Kim Boyce	920-516-7433
BayCare Clinic	530 Smith Ave	Oconto, WI, 54153	Clinic	Brian Carlson	715-732-8000

Table #4 - School and Educational Facility Inventory

Name	Address	City, State, Zip Code	Contact	Phone
Oconto Unified School District	810 Scherer Ave	Oconto, WI, 54153	Elementary School	Brian Potter
Oconto Unified School District	400 Michigan Ave	Oconto, WI, 54153	Middle School	Brian Potter
Oconto Unified School District	1717 Superior Ave	Oconto, WI, 54153	High School	Brian Potter

Table #5 - Dental Facility Inventory (all have amalgam separators installed)

Name	Address	City, State, Zip Code	Type of Facility	Contact	Phone
Karban Family Dentistry	500 Superior Ave	Oconto, WI, 54153	Dental Office	Dr. Matthew Karban	920-834-5652
Oconto Dental	1210 Pecor St	Oconto, WI, 54153	Dental Office	Dr. Joshua Weenig	920-434-5737

Table #6 – (future program & continued ongoing plan activities)

MPMP Continued & Ongoing Activities	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
1. Sector Inventories					
a. Continue to update the list of facility inventories in Tables 2-5 to keep the records current.	X	X	X	X	X
b. Identify new facilities that may need to be added to current site inventory. Eliminate facilities that do not meet sector requirements.	X	X	X	X	X
2. Site Inspections					
a. Perform annual industrial inspections for facilities covered under the City's Pretreatment Program.	X	X	X	X	X
b. Maintain the ability to randomly inspect and sample facilities.	X	X	X	X	X
c. Perform inspections at facilities when cause is identified (ie. sampling results).	X	X	X	X	X
d. Perform follow-up actions in response to deficiencies identified during inspections (both with pretreatment facilities and others identified).	X	X	X	X	X
3. Facility Annual Contacts					
a. Contact each facility listed in the most up to date inventory to ensure that they are following the mercury BMPs as directed.	X	X	X	X	X
4. Education and Outreach					
a. Update educational materials and provide to the public regarding mercury and proper disposal.	X	X	X	X	X
b. Promote local Clean Sweep Program.	X	X	X	X	X
5. Capacity, Management, Maintenance & Operation (CMOM)					
a. Continue to implement O&M actions identified in the City's CMOM to reduce the amount of clear water (atmospheric mercury source) entering the system.	X	X	X	X	X

MPMP New Activities	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
1. Sewer Use Ordinance					
a. Establish a new mercury limit of 1.3 ng/L for the sewer use ordinance. Sec. 9-2-11 (c) (8) Oconto, Wisconsin Code of Ordinances	X				
MPMP New Sampling Activities					
2. Industrial Sampling					
a. *Spot check industrial dischargers by performing <i>spot checks</i> throughout the year.	X	X	X	X	X
b. If necessary, perform follow-up inspections and/or issue a notification as part of the City's Pretreatment Program.	X	X	X	X	X
c. Perform *random sampling of hauled wastes throughout the year.	X	X	X	X	X
3. Collection System Sampling					
a. Develop a sampling plan for evaluating legacy mercury within the collection system. This plan should identify older parts of town, areas of heavy I/I, and potential key locations as the focus for monitoring.	X	X			
b. Implement the sampling plan to identify locations throughout the system with higher levels of mercury. Based on other collected industrial data and general information, areas of legacy mercury should be identified by the end of the sampling.			X	X	X

Sampling Activities

Industrial Sampling

*Spot check is defined as a grab sample taken from a specific location for the purpose of determining mercury discharges at that location. In the case of industrial users, this grab sample will be taken at a designated sampling point in the facility, at the sanitary lateral or at the first available manhole downstream from the facility. This sample should be representative of discharges from the industrial facility.

One industrial facility is to be *spot checked each quarter. These samples will coincide with quarterly mercury samples at the wastewater treatment facility for logistical purposes. Quarterly samples may be taken anytime within the quarter. On this schedule, 4 industrial facilities will be *spot checked each year and all industrial facilities will have been *spot checked over a 4 year period.

*Random sampling of hauled wastes is defined as grab samples taken of hauled wastes as they are discharged to the Oconto Wastewater Treatment Facility at a time of the wastewater operator's choosing, unannounced to the hauler of said waste. The timing and frequency of said sampling is left to the discretion of the wastewater operator so that sampling can be best tailored to catch any suspicious activity noticed by the operator. The purpose of this sampling is to confirm that haulers are dumping authorized wastes and not wastes unsafe for the Oconto Wastewater Treatment Facility.

Hauled wastes are received at the Oconto Wastewater Treatment Facility dump station 6:30am-5:00pm Monday-Friday all year round. These wastes are primarily holding tank and septic tank wastes from rural residents outside of our collection system and hauled by licensed septic pumpers. These wastes are residential in nature. We communicate with the haulers frequently and if they have waste that is something other than holding or septic, we take samples before accepting it. If samples are deemed unsafe for the Oconto Wastewater Treatment Facility, they are not accepted. We cannot sample when we expect mercury to be present because we do not accept wastes if we expect mercury to be present. Random samples of hauled wastes are a means to confirm that haulers are dumping residential or approved wastes and not something harmful to the treatment facility. Conducting these samples in a non-random manner would not be an effective means of keeping haulers accountable. If a hauler is suspected of dumping wastes unsafe for the treatment facility without proper notification (and sampling if deemed necessary), that hauler will be targeted for random sampling. If a hauler is found to be dumping a waste in violation of their contract, they can be banned from dumping at the Oconto Wastewater Treatment Facility.

Collection System Sampling

Grab samples will be taken in locations representative of suspected areas within the collection system where mercury may be present. Examples of these areas are, the Oconto fish cleaning station, the oldest manholes that also receive high amounts of I/I and in or immediately downstream of remaining clay tile sewers. These samples will be taken at the same time as quarterly mercury samples at the Oconto Wastewater Treatment Facility for logistical reasons.