Permit Fact Sheet

General Information

Permit Number	WI-0021865-11-0
Permittee Name and Address	City of Rice Lake - Utilities 1112 S. Wisconsin Avenue, Rice Lake, WI 54868
Permitted Facility Name and Address	City of Rice Lake Utilities 1112 S. Wisconsin Avenue, Rice Lake, Wisconsin
Permit Term	July 01, 2026 to June 30, 2031
Discharge Location	1112 S. Wisconsin Avenue, Rice Lake WI SE ¼ NE ¼ Sec 29; T356N-R11W West bank of Red Cedar River, one quarter of a mile down from Allen Street Bridge. GPS coordinates -91.747 deg. W. 45.488 deg. N.
Receiving Water	The Red Cedar River within the Brill and Red Cedar Rivers watershed in the Lower Chippewa River Basin in Barron County
Stream Flow ($Q_{7,10}$)	84 cfs
Stream Classification	Warm Water Sport Fish (WWSF) community, non-public water supply, recreational use and within the ceded territory
Wild Rice Impacts *(no specific wild rice standards exist at this time)*	No impacts identified at this location. Wild rice habitat may be found upstream near the mouth of Rice Lake. (Evaluation completed March 2017)
Discharge Type	Existing continuous discharger
Annual Average Design Flow (MGD)	2.2 MGD
Industrial or Commercial Contributors	Yes, the facility accepts leachate from 4 landfills (Timberline Trail Recycling & Deposal Facility, Northwoods Sanitary Landfill, St. Croix River Valley Landfill and Lake Area Landfill), 2 pretreatment metal finishers (Henry Arms Wisconsin and Rice Lake Weighing Systems), and 3 Industrial Users (McCains Foods, Viresco Turtle Lake and Foremost Farms)
Plant Classification	A1 - Suspended Growth Processes; B - Solids Separation; C - Biological Solids/Sludges; P - Total Phosphorus; D - Disinfection; L - Laboratory; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The City of Rice Lake owns and operates a domestic wastewater treatment system. The activated sludge plant is designed to treat 2,200,000 gallons per day currently treats an average of 1,430,000 gallons per day (2021-2025 data). The activated sludge process uses settled solids containing naturally occurring microorganisms recycled from the treatment system. The plant consists of preliminary treatment with fine screens and grit separators, primary treatment with two primary clarifiers, secondary treatment with a series of basins operating in a plug flow formation, two clarifiers and seasonal (May through September) chlorination disinfection before discharge to the Red Cedar River.

Settled solids that is not used as activated sludge is treated through anaerobic digestion prior to land application. Storage is available during periods land application is not possible. All sludge is land application on Department approved agricultural sites following permit conditions and applicable codes.

Substantial Compliance Determination

All conditions and standard requirements of the permit are being met. No action is required.

After a review of all Discharge Monitoring Reports, Land Application Reports, CMARs, and a site visit on 08/12/2025, by Carson Johnson, WDNR, the Rice Lake Wastewater Treatment Plant has been found to be in substantial compliance with their current WPDES permit.

Sample Point Descriptions

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	INFLUENT An average of 1.38 MGD (2021-2025 data)	24-hr Flow Proportional Composite samples shall be collected between the fine screen and grit chamber. Influent flow shall be measured at the influent Parshall flume between the grit chamber and the wet well.
001	EFFLUENT An average of 1.43 MGD (2021-2025 data)	24-hr Flow Proportional Composite samples shall be collected prior to the chlorine contact tank. Grab samples shall be collected after dechlorination prior to discharge to the Red Cedar River.
004	SLUDGE 525 tons/year (Information provided in the application)	Samples shall be collected from the sludge storage tank after complete mixing prior to land application.
101	IN-PLANT Flow is not a required parameter.	Sample point for reporting results of mercury field blanks collected using standard sample handling procedures.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	Monthly	24-Hr Flow	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
				Prop Comp	
CBOD5		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	24-Hr Flow Prop Comp	See the Mercury Monitoring section for more information.

Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

- **Flow-** The sample frequency for flow has been changed from "continuous" to "daily" for eDMR reporting purposes.
- **Mercury** – Monitoring has changed from monthly for one year to quarterly throughout the permit term.
- **BOD** – Monitoring has decreased from 5/week to monthly.

Explanation of Monitoring Requirements

Monitoring of influent flow, BOD5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit.

2 Inplant - Monitoring and Limitations

2.1 Sample Point Number: 101- 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 the Mercury Monitoring section for more information.

Changes from Previous Permit:

In-plant limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section.

Explanation of Limits and Monitoring Requirements

Mercury Field Blank- Monitoring is included in the permit pursuant to s. NR 106.145, Wis. Adm. Code. Field blanks must meet the requirements under s. 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). Field blanks are required to verify a sample has not been contaminated during collection, transportation or analysis.

3 Surface Water - Monitoring and Limitations

3.1 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	
CBOD5	Monthly Avg	25 mg/L	5/Week	24-Hr Flow Prop Comp	
CBOD5	Weekly Avg	40 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Chlorine, Total Residual	Monthly Avg	38 ug/L	Daily	Grab	Monitoring and limit effective May through September.
Chlorine, Total Residual	Weekly Avg	38 ug/L	Daily	Grab	Monitoring and limit effective May through September.
Chlorine, Total Residual	Daily Max	38 ug/L	Daily	Grab	Monitoring and limit effective May through September.
E. coli	Geometric Mean – Monthly	126 #/100 ml	2/Week	Grab	Monitoring and limit effective May through September.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Monitoring and limit effective May through September. Enter the result in the DMR on the last day of the month.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	77 mg/L	5/Week	24-Hr Flow Prop Comp	Limit is effective May through October.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	36 mg/L	5/Week	24-Hr Flow Prop Comp	Limit is effective November through April.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	108 mg/L	5/Week	24-Hr Flow Prop Comp	Limit is effective May through October.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	73 mg/L	5/Week	24-Hr Flow Prop Comp	Limit is effective November through April.
Nitrogen, Ammonia (NH3-N) Total	Daily Max – Variable	mg/L	5/Week	24-Hr Flow Prop Comp	Report the daily ammonia result in the Nitrogen Ammonia (NH_3-N) Total Column and compare it to the Nitrogen Ammonia Variable Limit column to determine compliance.
Nitrogen, Ammonia Variable Limit		mg/L	5/Week	See Table	Using the daily pH result look up the applicable variable ammonia limit from the Variable Ammonia Limitation table and report the variable limit in the Ammonia variable Limit column on the eDMR.
Phosphorus, Total	Monthly Avg	1.0 mg/L	3/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	27 lbs/day	3/Week	Calculated	See the Total Maximum Daily Load (TMDL) Limitations permit section.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on the DMR. See the Total Maximum Daily Load (TMDL) Limitations permit section.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month roll-ing sum of total monthly mass of phosphorus discharged and report on the last day of the

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					month on the DMR. See the Total Maximum Daily Load (TMDL) Limitations permit section.
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.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	
Acute WET	Daily Max	1.0 TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Whole Effluent Toxicity (WET) testing permit section for more information.
Chronic WET	Monthly Avg	7.1 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Whole Effluent Toxicity (WET) testing permit section for more information.
Mercury, Total Recoverable		ng/L	Quarterly	Grab	See the Mercury Monitoring section for more information.
Copper, Total Recoverable		ug/L	Quarterly	24-Hr Flow Prop Comp	
Hardness, Total as CaCO3		mg/L	Quarterly	24-Hr Flow Prop Comp	Monitor at the same time metals monitoring occurs.
Chloride		mg/L	Monthly	24-Hr Flow Prop Comp	Monitoring is required during the 2029 calendar year.

Changes from Previous Permit

Effluent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

- **Flow-** The sample frequency for flow has been changed from "continuous" to "daily" for eDMR reporting purposes.
- **Phosphorus** – A parameter for phosphorus pounds per month was added to assist with the calculation of the rolling 12-month sum.
- **PFOS & PFOA** - monitoring once every two months has been included based on the size of the facility.
- **Acute WET –** A daily maximum limit of 1 TUa is applicable this permit term.
- **Metals Monitoring** – Monitoring for Mercury and Copper have changed from monthly for one year to quarterly through the permit term. Chloride monitoring remains the same monthly for one year (2029) of the permit term.
- **Hardness** – Quarterly hardness monitoring has been added. This monitoring shall coincide with copper sampling.

Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated February 20, 2026.

Monitoring Frequencies- The Monitoring Frequencies for Individual Wastewater Permits 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 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. Though the facility has multiple industries and fluctuations in loads due to these injuries, effluent data demonstrates consistent low concentrations. Sampling 5/week is sufficient to demonstrate compliance.

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 chlorine and ammonia.

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	B	Liquid	Anaerobic Digestion	Volatile Solids Reduction	Land Application	525 tons/year
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? No, during the most recent round of sampling (5/19/2020) the highest result was 0.516 pCi/liter.						
Is a priority pollutant scan required? No						

4.1 Sample Point Number: 004- THICKENED LIQUID SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Quarterly	Composite	
Phosphorus, Total		Percent	Quarterly	Composite	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	
Potassium, Total Recoverable		Percent	Quarterly	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	See the Sludge Analysis for PCBs permit section.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	See the Sludge Analysis for PCBs permit section.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS permit sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

PFAS –Monitoring is required annually pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

Requirements for disposal, including 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 has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The department is evaluating this new information. Until a decision is made, the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS" should be followed

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 this WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

5 Schedules

5.1 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	06/30/2027

influent, intake, in-plant, collection system sampling, and blank sample results.	
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. The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan. 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. 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.	06/30/2028

Explanation of Schedule

PFOS/PFOA Minimization Plan Determination of Need- As stated above, ch. NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Section 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.

5.2 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan Submittal: Submit a 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.	08/31/2026

Explanation of Schedule

Land Application Management Plan - An up-to-date Land Application Management Plan is required that documents how the permittee will manage the land application of biosolids consistent with ch. NR 204, Wis. Adm. Code

Attachments

Water Flow Schematic provided by the permittee

Water Quality Based Effluent Limits memo dated February 20, 2026

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Sheri A. Snowbank Wastewater Specialist **Date:** March 5, 2026

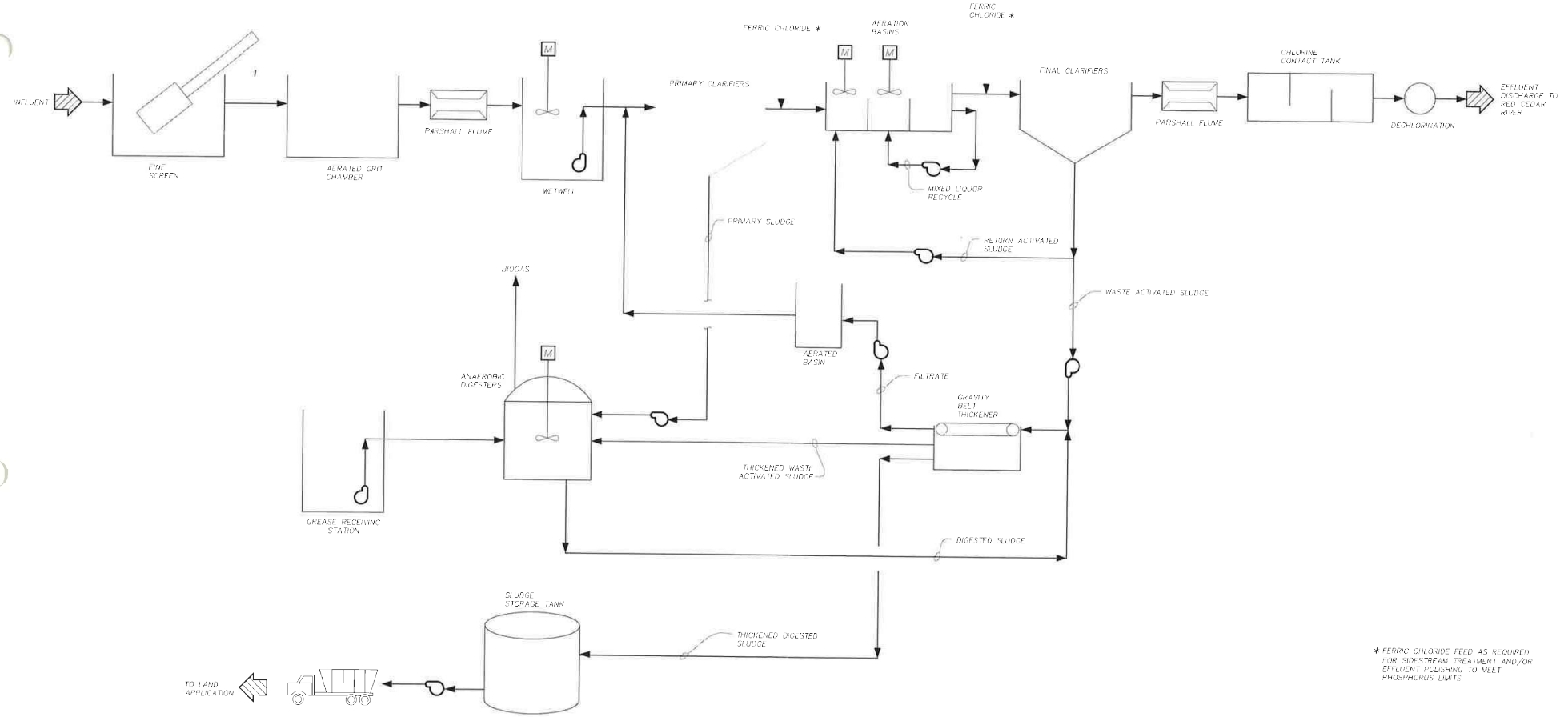

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FIGURE 1-2
PROCESS FLOW DIAGRAM
RICE LAKE UTILITIES WWTF

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: February 20, 2026

TO: Sheri Snowbank – NOR/Spooner Service Center

FROM: Michael Polkinghorn – NOR/Rhinelander Service Center Michael Polkinghorn

SUBJECT: Water Quality-Based Effluent Limitations for the City of Rice Lake – Utilities
WPDES Permit No. WI-0021865-11-0

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 City of Rice Lake - Utilities in Barron County. This municipal wastewater treatment facility (WWTF) discharges to the Red Cedar River, located in the Brill and Red Cedar Rivers Watershed in the Lower Chippewa Basin. This discharge is included in the Tainter Lake/Lake Menomin (TL/LM) Total Maximum Daily Load (TMDL) as approved by EPA on 09/14/2012. 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
$CBOD_5$			40 mg/L	25 mg/L	1, 2, 3
TSS			45 mg/L	30 mg/L	1, 3
pH	9.0 s.u.	6.0 s.u.			1, 3
Chlorine (Total Residual) May – September	38 µg/L		**38 µg/L**	**38 µg/L**	1, 4
E. coli May – September				126 #/100 mL geometric mean	1, 5
Ammonia Nitrogen May – October November – April	Variable Variable		**108 mg/L** 73 mg/L	**77 mg/L** 36 mg/L	1, 4, 6
Phosphorus				1.0 mg/L 27 lbs/day	1, 7
PFOS and PFOA					8
Mercury (Total Recoverable)					9
Copper (Total Recoverable)					9
Chloride					1, 9
Hardness (Total as $CaCO_3$)					10
TKN, Nitrate+Nitrite, and Total Nitrogen					1, 11
Acute WET	1.0 TUa				12, 14
Chronic WET				7.1 TUc	13, 14

Footnotes:

1. No changes from the current permit.
2. This facility meets the conditions as described in s. NR 210.07(4), Wis. Adm. Code. An additional requirement is the 30-day average $CBOD_5$ percent removal may not be less than 85%. Significant improvements to treatment quality at the facility will prompt a re-evaluation of this variance. Otherwise the need for $CBOD_5$ limits does not need to be demonstrated at subsequent permit reissuances if the treatment quality is expected to remain similar as compared to when the limits were implemented in the permit.
3. 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.
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. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
6. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values is recommended to continue.

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

7. The concentration limit is a state technology-based limit as described in subch. II of NR 217, Wis. Adm. Code. The mass limit is based on the Total Maximum Daily Load (TMDL) for the Tainter Lake/Lake Menomin (TL/LM) to address phosphorus water quality impairments within the TMDL area.
8. PFOS and PFOA monitoring is recommended at a frequency of once every two months in accordance with s. NR 106.98(2), Wis. Adm. Code.
9. Quarterly monitoring is recommended during the reissued permit term for copper and mercury. Monthly monitoring for 1 year is recommended during the reissued permit term for chloride.
10. Hardness monitoring is recommended because of the relationship between hardness and daily maximum limits based on acute toxicity criteria.
11. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, quarterly total nitrogen monitoring is recommended for all major municipal permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).
12. Annual acute whole effluent toxicity (WET) testing is 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.

13. Annual chronic WET testing is recommended during the reissued permit term. The Instream Waste Concentration (IWC) to assess chronic test results is 14%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 30%, 10%, 3% & 1%. The primary control water used in chronic WET tests conducted on Outfall 001 shall be a grab sample collected from the Red Cedar River upstream of the confluence of Outfall 001.
14. 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. Testing 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 (2) – Narrative and discharge area map.

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Attachment #1

Water Quality-Based Effluent Limitations for
City of Rice Lake – Utilities

WPDES Permit No. WI-0021865-11-0

Prepared by: Michael A. Polkinghorn

PART 1 – BACKGROUND INFORMATION

Facility Description

Treatment consists of headworks (fine screens and grit separators), aeration basin, final settling and disinfection. Biological phosphorus and nitrogen removal is achieved through anoxic and anaerobic selector tanks. Wastewater is seasonally disinfected during May through September using a chlorination/dechlorination system. Discharge occurs on a continuous basis via Outfall 001 to the west bank of the Red Cedar River, approx. 0.25 mi downstream of the Allen St. Bridge.

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

Existing Permit Limitations

The current permit, which expired on 12/31/2025, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1
$CBOD_5$			40 mg/L	25 mg/L	2, 3, 4
TSS			45 mg/L	30 mg/L	2, 4
pH	9.0 s.u.	6.0 s.u.			2, 4
Chlorine (Total Residual) May – September	38 µg/L		**38 µg/L**	**38 µg/L**	5
E. coli May – September				126 #/100 mL geometric mean	2, 6
Ammonia Nitrogen May – October November – April	Variable Variable		**108 mg/L** 73 mg/L	**77 mg/L** 36 mg/L	2, 5, 7
Phosphorus				1.0 mg/L 27 lbs/day	8
Mercury (Total Recoverable)					1
Copper (Total Recoverable)					1
Chloride					1

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Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
TKN, Nitrate+Nitrite, and Total Nitrogen					1, 9
Acute WET					10
Chronic WET				7.1 TUc	10

Footnotes:

1. Monitoring only.
2. **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.
3. This facility meets the conditions as described in s. NR 210.07(4), Wis. Adm. Code. An additional requirement is the 30-day average $CBOD_5$ percent removal may not be less than 85%. Significant improvements to treatment quality at the facility will prompt a re-evaluation of this variance. Otherwise the need for $CBOD_5$ limits does not need to be demonstrated at subsequent permit reissuances if the treatment quality is expected to remain similar as compared to when the limits were implemented in the permit.
4. 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.
5. 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.
6. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL. These limits became effective in the current permit on 05/01/2025.
7. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values was included in the permit in place of the single limit. These limits became effective in the current permit on 01/01/2025.

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

8. The concentration limit is a state technology-based limit as described in subch. II of NR 217, Wis. Adm. Code. The mass limit is based on the Total Maximum Daily Load (TMDL) for the Tainter Lake/Lake Menomin (TL/LM) to address phosphorus water quality impairments within the TMDL area.
9. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, quarterly total nitrogen monitoring is recommended for all major municipal permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).
10. Annual acute and chronic whole effluent toxicity tests were required during the current permit term. The IWC for chronic WET was 14%.

Receiving Water Information

- Name: Red Cedar River
- Waterbody Identification Code (WBIC): 2063500
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply and recreational use.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q_{10} and 7-Q_2 values are from USGS for Station SE ¼ NE ¼ Section 29; T35N – R11W, where Outfall 001 is located.

  7-Q_{10} = 84 cubic feet per second (cfs)
  7-Q_2 = 130 cfs
  90-Q_{10} = 111 cfs
  Harmonic Mean Flow = 181 cfs using a drainage area of 387 mi^2

  The Harmonic Mean has been estimated based on average flow and the 7-Q_{10} using an equation from U.S. EPA's *Technical Support Document for Water Quality-Based Toxics Control* (March 1991, EPA/505/2-90-001, pgs. 88-89).
- Hardness = 91 mg/L as $CaCO_3$. This value represents the geometric mean of data (n = 16, April 1989 – June 2008) collected from multiple locations on the Red Cedar River upstream of Outfall 001.
- pH = 8.1 s.u. This value represents the overall average of effluent pH data (n = 1,737, January 2021 – December 2025) required during the current permit term.
- % 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: Chloride data from the Red Cedar River in the Brill and Red Cedar Rivers watershed is used for this evaluation. The numerical values are shown in the tables below. 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 phosphorus is described later.
- Multiple dischargers: There are several other dischargers to the Red Cedar 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: There are no known impairments to the Red Cedar River in the area of Outfall 001. Approx. 7.1 mi downstream of Outfall 001, the Red Cedar River is on the Clean Water Act Section 303(d) list for phosphorus and mercury impairments (stream mi 28.72 – 78.51). Outfall 001 is inside the TL/LM TMDL area which addresses phosphorus impairments within the TMDL area.

Effluent Information

- Design flow rate(s):
  Annual average = 2.2 million gallons per day (MGD)
  For reference, the actual average flow from January 2021 – December 2025 was 1.4 MGD.
- Hardness = 209 mg/L as $CaCO_3$. This value represents the geometric mean of four samples collected in June 2025 – July 2025 which were reported on the permit application.
- pH = 7.2 s.u. This value represents the overall average of effluent pH data (n = 1,737, January 2021 – December 2025) required during the current permit term.
- 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).
- Wastewater source: Domestic wastewater with 4 industrial contributors. The facility also accepts hauled wastewater from 5 sources.
- Water supply: Municipal waterworks.
- Additives: City of Rice Lake - Utilities has included 3 additives in the permit application that have the potential to be present in Outfall 001. These additives are listed below:
  - Ferric chloride – Phosphorus removal
  - Sodium hypochlorite – Chlorination
  - Sulfur dioxide – Dechlorination
  - An additive review is not necessary for any additives where either the toxicity is well documented and understood, can be controlled by a WQBEL, or are not believed to be present in the discharge. This is the case upon initial review of the listed additives; therefore, an additive review is not needed at this time.
- Effluent characterization: This facility is categorized as a major municipal discharger, so the permit application required effluent sample analyses for all the "priority pollutants" except for the Dioxins and Furans as specified in s. NR 200.065, Table 1, Wis. Adm. Code. Monitoring for mercury, copper, and chloride was required during the current permit term.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2, in the column 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 (Sample Point 101) have indicated contamination was present from either sample transportation or environmental sources in one sample (1.7 ng/L, 08/18/2023). Therefore, this effluent mercury sample is excluded from this evaluation due to this consideration.

Multiple Toxic Substances Effluent Data

Sample Date	Mercury (ng/L)	Copper (µg/L)	Chloride (mg/L)
01/17/2023	1.2	22	410
02/20/2023	1.2	12	530
03/21/2023	1.9	21	570
04/05/2023	1.2	13	390
05/12/2023	1.1	12	380
06/08/2023	1.5	10	430
07/12/2023	1.7	11	590
08/18/2023		16	540
09/15/2023	1.4	17	520
10/12/2023	1.5	14	740
11/09/2023	3.9	13	630

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Sample Date	Mercury (ng/L)	Copper (µg/L)	Chloride (mg/L)
12/13/2023	1.4	14	690
1-day P_{99}	4.3	26	865
4-day P_{99}	2.8	20	686
30-day P_{99}	2.0		

The following table presents the average concentrations and loadings at Outfall 001 from January 2021 – December 2025 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameters with Effluent Limits

	Average Measurement*	Average Mass Discharged
$CBOD_5$	4.9 mg/L	
TSS	10 mg/L	
pH field	7.2 s.u.	
Chlorine (TR)	1.0 mg/L	
E. coli	22 #/100 mL**	
Ammonia Nitrogen	22 mg/L	
Phosphorus	0.67 mg/L	8.4 lbs/day

*Any results below the limit of detection (LOD) were included as zeroes in calculation of average.
** The average measurement for bacteria is calculated as a geometric mean. Values reported below the LOD are replaced with a value of 1 for the calculation of the geometric mean.

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 P_{99}) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. 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-Q_{10}

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-Q_{10} 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.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{}$$

Qe

Where:

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

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

Qe = 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

Cs = 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-Q_{10} 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 City of Rice Lake – Utilities and the limits are set based on two times the acute toxicity criteria.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling for all the detected substances. 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 = 67 cfs, (1-Q_{10} (estimated as 80% of 7-Q_{10})), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. (mg/L) or pH (s.u.)	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				
Arsenic		340	679.6	135.9	2.5		2.5
Cadmium	209	24.1	48.1	9.6	0.17		0.17
Chromium (TR)	209	3303	6,606	1,321	7.1		7.1
Chromium (+6)		16.0	32.0	6.41	6.9		6.9
Mercury (ng/L)		830	1660			4.3	3.9
Copper	209	31.2	62.3			26	22
Nickel	209	877	1,754	351	19		19
Zinc	209	230	459.5	91.9	38		38
Chloride (mg/L)		757	1,514			865	740
Pentachloro-phenol	7.2	10.68	21.4	4.27	1.5		1.5
Phenols (Total)**		4,460.3	4,460.3	892	14		14

* The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q_{10} flow rates per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016.

** The limit for this substance is based on a secondary value. Acute limits are set equal to the secondary value rather than two times or using the 1-Q_{10} s. NR 106.06(3)(b)2 and s. NR 105.05(2)(f)6), Wis. Adm Code.

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Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 21 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD. (mg/L) or pH (s.u.)	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Chlorine		7.28		52	10		
Arsenic		152.2		1091	218.2	2.5	
Cadmium	91	2.28		16.35	3.3	0.17	
Chromium (TR)	91	122.19		876	175.2	7.1	
Chromium (+6)		10.98		78.7	15.74	6.9	
Mercury (ng/L)		440		3,154			2.8
Selenium		5.00		35.85	7.17	5.2	
Copper	91	9.54		68.4			20
Nickel	91	48.15		345	69.0	19	
Zinc	91	110.75		794	158.8	38	
Chloride (mg/L)		395	3.55	2,810			686
Pentachloro-phenol	8.1	24.23		173.71	34.74	1.5	
Phenols (Total)*		2,197.2		15,752	3,150	14	

* The limit for this substance is based on a secondary value.

Monthly Average Limits based on Wildlife Criteria (WC)

RECEIVING WATER FLOW = 28 cfs (¼ of the 90-Q_{10}), 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		11.9	2.0

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 45 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.
Antimony	373		5,329	1,066	0.73
Cadmium	370		5,286	1,057	0.17
Chromium (TR)	3,818,000		54,547,442	10,909,488	7.1
Chromium (+6)	7,636		109,095	21,819	6.9
Mercury (ng/L)	1.5		21.4		2.0
Selenium	2,600		37,146	7,429	5.2
Silver	28,000		400,034	80,007	2.8
Nickel	43,000		614,337	122,867	19

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Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 45 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		190	38	2.5
Dichlorobromo-methane	1,960		28,002	5,600	0.91
Chloroform	1,960		28,002	5,600	1.2
1,4-Dichloro-benzene	163		2,329	466	0.3

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 chlorine**. Limits and/or 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 weekly and monthly average limits of 38 µg/L are required to continue during the reissued permit term satisfy the expression of limits requirements as described in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code.**

Copper – Considering available effluent data from the current permit term (January 2023 – December 2023), the 1-day and 4-day P_{99} concentrations are 26 and 20 µg/L respectively. These concentrations are below the calculated copper WQBELs; **therefore, copper limits are not recommended during the reissued permit term. Quarterly monitoring is recommended during the reissued permit term** due to the likelihood of the mean effluent concentration being greater than $1/5^{th}$ of the calculated daily maximum copper WQBEL with fewer than 11 detectable samples.

Quarterly hardness monitoring is also recommended because of the relationship between hardness and daily maximum limits based on acute toxicity criteria.

Chloride – Considering available effluent data from the current permit term (January 2023 – December 2023), the 1-day and 4-day P_{99} concentrations are 865 and 686 mg/L respectively. These concentrations are below the calculated chloride WQBELs; **therefore, chloride limits are not recommended during the reissued permit term. 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 – Considering available effluent data from the current permit term (January 2023 – December 2023), the 1-day, 4-day, and 30-day P_{99} concentrations are 4.3, 2.8, and 2.0 ng/L respectively. These concentrations are below the calculated mercury WQBELs; **therefore, mercury limits are not recommended during the reissued permit term. Quarterly monitoring is recommended during the reissued permit term** to determine the need of mercury limits at the next permit reissuance.

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 and effluent flow rate, **PFOS and PFOA monitoring is recommended at a once every two months frequency.**

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 year round. These limitations are not being evaluated themselves as because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, but will be provided to determine reasonable potential with effluent ammonia nitrogen data to benefit other parts of this evaluation.

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)
Daily maximum limitations are based on acute toxicity criteria in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The acute toxicity criterion (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 was examined as part of this evaluation. A total of 1,738 sample results were reported from January 2021 – December 2025. The maximum reported value was 8.1 s.u. (Standard pH Units). The effluent pH was 7.6 s.u. or less 99% of the time. The 1-day P_{99}, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 7.7 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 7.7 s.u. Therefore, a value of 7.7 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 7.7 s.u. into the equation above yields an ATC = 15 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 are calculated using the 1-Q_{10} receiving water low flow 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.

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q_{10} (estimated as 80 % of 7-Q_{10}) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

Method	Ammonia Nitrogen Limit (mg/L)
2×ATC	30
1-Q_{10}	310

The 2×ATC method yields the most stringent limits for Rice Lake – Utilities. The daily maximum limits in the current permit are based on a WWSF community using the 2xATC method of calculation. 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

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

Weekly average and monthly average limits for ammonia nitrogen are based on chronic toxicity criteria in ch. NR 105, Wis. Adm. Code. The weekly and monthly average ammonia nitrogen limits from the previous limit evaluation (January 2020) are included in the table below:

Weekly & Monthly Ammonia Nitrogen Limits – WWSF Community

Red Cedar River		Summer May – Oct.	Winter Nov. – April
Effluent Flow	Qe (MGD)	2.2	2.2
Background Information	7-Q_{10} (cfs)	84	84
	7-Q_2 (cfs)	130	130
	Ammonia (mg/L)	0.04	0.13
	Average Temperature (°C)	16	3
	Maximum Temperature (°C)	21	9
	pH (s.u.)	7.73	7.57
	% of Flow used	100	25
	Reference Weekly Flow (cfs)	84	21
	Reference Monthly Flow (cfs)	111	28
Criteria	4-day Chronic		
	Early Life Stages Present	5.86	10.23

mg/L	Early Life Stages Absent		
	30-day Chronic		
	Early Life Stages Present	2.34	4.09
	Early Life Stages Absent		
Effluent Limitations mg/L	Weekly Average		
	Early Life Stages Present	150	73
	Early Life Stages Absent		
	Monthly Average		
	Early Life Stages Present	77	36
	Early Life Stages Absent		

Effluent Data
The following table evaluates the statistics based upon ammonia data reported from January 2021 – December 2025.

Ammonia Nitrogen Effluent Data

Statistics (mg/L)	May – October	November – April
1-day P_{99}	67.5	67.0
4-day P_{99}	40.4	41.6
30-day P_{99}	26.7	28.8
Mean*	20.5	22.8
Std	13.1	12.7
Sample size	655	649
Range	0.8 - 59.2	0.3 - 57

Reasonable Potential
The need to include ammonia limits in the permit is determined by calculating 99th upper percentile (or P_{99}) values for ammonia during the month ranges and comparing those to the calculated limits. **Based on this comparison, daily maximum limits are needed year round. The current permit currently has daily maximum, weekly, and monthly average limits year-round, 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.

PART 4 – 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 the City of Rice Lake - Utilities 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.

The TL/LM TMDL report was written to ensure that phosphorus water quality criteria are attained in Tainter Lake and Lake Menomin and are not necessarily protective of phosphorus water quality criteria of other surface waterbodies in the TMDL area. Therefore, the need for a phosphorus WQBEL as described in s. NR 217.13, Wis. Adm. Code, must be considered in addition to any limits required by the TMDL report.

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 the Red Cedar River as described in s. NR 102.06(3)(a)34, 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 Red Cedar River
Qs = 100% of the 7-Q_2 of 130 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 = 2.2 MGD = 3.4 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.

The previous limit evaluation (January 2020) resulted in a WQBEL of 2.3 mg/L using a background concentration of 0.042 mg/L using background data from the Red Cedar River at Rice Lake – Site B/Central Basin (SWIMS Station ID: 033180, n = 34, July 2008 – August 2019). 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. This same sampling site was utilized to yield an updated median background concentration of 0.043 mg/L (n = 17, June 2021 – September 2025). Substituting a median value of 0.043 mg/L into the limit calculation equation above, the calculated limit is 2.3 mg/L.

The calculated phosphorus WQBEL is not recommended during the reissued permit term because the state technology-based limit is more stringent and effective in the permit.

Effluent Data
The following table summarizes effluent total phosphorus monitoring data from January 2021 – December 2025 for informational purposes.

Total Phosphorus Effluent Data

Statistics	Conc. (mg/L)	Mass (lbs/day)
1-day P_{99}	1.67	24.0
4-day P_{99}	1.10	15.1
30-day P_{99}	0.81	10.6
Mean	0.67	8.4
Std	0.30	4.5
Sample size	789	789
Range	0.23 - 3.08	0.7 - 69.2

TMDL Limits
Total phosphorus (TP) effluent limits in lbs/day are calculated as recommended in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs* (April 2020) and are based on the annual phosphorus wasteload allocation (WLA) given in lbs/yr. This WLA is found in page 15 of the *Phosphorus Total Maximum Daily Loads (TMDLs) Tainter Lake and Lake Menomin report* (May 2012) and is expressed as a maximum annual load (lbs/yr). For City of Rice Lake - Utilities, this WLA is 6,697 lbs/yr and 18.35 lbs/day.

The monthly average limit of 27 lbs/day was determined in the previous limit evaluation (April 2014). The monthly average multiplier of 1.47 was chosen as described in the Department TMDL Implementation guidance using a coefficient of variation (CV) of 0.6 and a 3x/wk effluent monitoring frequency. The TMDL-based phosphorus WQBEL(s) will be re-evaluated if the annual phosphorus WLA is not being met as described in the prior stated guidance. This is done by comparing each rolling sum of 12 consecutive months of total monthly mass phosphorus discharges over the current permit term directly against the annual WLA. In this case, City of Rice Lake - Utilities has been 100% compliant in meeting the annual WLA of 6,697 lbs/yr, with a maximum rolling 12-month sum of 3,800 lbs/yr during January 2021 – December 2025. The City of Rice Lake - Utilities is considered to be meeting their annual WLA. **Therefore, the monthly average limit of 27 lbs/day will remain unchanged during the reissued permit term.**

PART 5 – 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.

In accordance with s. NR 106.53(2)(b), Wis. Adm. Code, the highest daily maximum flow rate for a calendar month is used to determine the acute (daily maximum) effluent limitation. In accordance with s.

NR 106.53(2)(c), Wis. Adm. Code, the highest 7-day rolling average flow rate for a calendar month is used to determine the sub-lethal (weekly average) effluent limitation. These values were based off actual flow reported from January 2021 – December 2025.

Due to the amount of upstream flow available for dilution in the limit calculation, the lowest calculated daily maximum limitation is 120° F. 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 6 – 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 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 LC_{50} (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.

- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC_{25} (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The IWC of 14%, shown in the WET Checklist summary below, was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

$$\text{IWC (as \%)} = Q_e \div \{(1 - f)\, Q_e + Q_s\} \times 100$$

Where:

Q_e = annual average flow = 2.2 MGD = 3.4 cfs
f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = ¼ of the 7-Q_{10} = 84 cfs ÷ 4 = 21 cfs

- 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.

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in

chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the receiving water location, upstream and out of the influence of the mixing zone and any other known discharge. The specific receiving water location 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. There are many historic WET tests that were conducted at the facility ranging back to January 1995. 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. In addition, the Department 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.

WET Data History

Date Test Initiated	Acute Results LC_{50} %				Chronic Results IC_{25} %				Footnotes or Comments
	C. dubia	Fathead minnow	Pass or Fail?	Used in RP?	*C. dubia*	Fathead Minnow	Pass or Fail?	Use in RP?	
05/09/2006	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
08/28/2007	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
06/19/2012	>100	>100	Pass	Yes	42.7	58	Pass	Yes	
09/24/2013	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
11/12/2013	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
03/25/2014	93.9	49.3	Fail	Yes	8.3	34.1	Fail	Yes	
12/15/2015	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
07/26/2016	>100	>100	Pass	Yes	66.8	>100	Pass	Yes	
03/28/2017	>100	>100	Pass	Yes	45.6	96.1	Pass	Yes	
06/12/2018	>100	>100	Pass	Yes	39.2	43.6	Pass	Yes	
8/13/2019	>100	>100	Pass	Yes	43.9	57.2	Pass	Yes	
05/04/2021	>100	>100	Pass	Yes	49.0	>100	Pass	Yes	
03/15/2022	>100	>100	Pass	Yes	95.2	>100	Pass	Yes	
11/28/2023	>100	>100	Pass	Yes	57.9	46.9	Pass	Yes	
09/17/2024	>100	>100	Pass	Yes	62.6	>100	Pass	Yes	
06/17/2025	>100	>100	Pass	Yes	>100	>100	Pass	Yes	

- 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.

  Acute Reasonable Potential = [(TUa effluent) (B)(AMZ)]
  Chronic Reasonable Potential = [(TUc effluent) (B)(IWC)]

Acute Reasonable Potential = [(TU_a effluent) (B)]

Acute WET Limit Parameters

TUa (maximum) $100/LC_{50}$	**B** (multiplication factor from s. NR 106.08(5)(c), Wis. Adm. Code, Table 4)
100/49.3 = 2.03	6.2 Based on 1 detect

[(TUa effluent) (B)(AMZ)] = 13 > 1.0

Chronic Reasonable Potential = [(TU_c effluent) (B)(IWC)]

Chronic WET Limit Parameters

TUc (maximum) $100/IC_{25}$	**B** (multiplication factor from s. NR 106.08(6)(c), Wis. Adm. Code, Table 4)	IWC
100/8.3 = 12.05	1.5 Based on 10 detects & CV = 0.4	14%

[(TUc effluent) (B)(IWC)] = 2.5 > 1.0

Therefore, reasonable potential is shown for acute and chronic WET limits using the procedures in s. NR 106.08(6), Wis. Adm. Code, and representative data from May 2006 – June 2025.

Expression of WET limits

Acute WET limit = 1.0 TU_a expressed as a daily maximum

Chronic WET limit = [100/IWC] TU_c = 7.1 TU_c expressed as a monthly average

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	**Chronic**
AMZ/IWC	Not applicable. **0 Points**	IWC = 14%. **0 Points**
Historical Data	Sixteen tests used to calculate RP. One test failed.	Sixteen tests used to calculate RP. One test failed.

Attachment #1

	Acute	Chronic
	0 Points	**0 Points**
Effluent Variability	Some limit exceedances for ammonia nitrogen and chlorine. Otherwise little variability, no violations or upsets, consistent WWTF operations. **0 Points**	Same as acute. **0 Points**
Receiving Water Classification	WWSF community. **5 Points**	Same as acute. **5 Points**
Chemical-Specific Data	Reasonable potential for ammonia nitrogen and chlorine limits based on ATC; multiple toxic substances detected. Additional Compounds of Concern: Yes. **11 Points**	No reasonable potential for limits based on CTC; multiple toxic substances detected. Additional Compounds of Concern: Yes. **5 Points**
Additives	One biocide and two water quality conditioners added. Permittee has proper P chemical SOPs in place: No. **20 Points**	All additives used more than once per 4 days. **20 Points**
Discharge Category	Four industrial contributors. **8 Points**	Same as acute. **8 Points**
Wastewater Treatment	Secondary or better. **0 Points**	Same as acute. **0 Points**
Downstream Impacts	No impacts known. **0 Points**	Same as acute. **0 Points**
Total Checklist Points:	**44 Points**	**38 Points**
Recommended Monitoring Frequency (from Checklist):	Annual acute tests recommended.	Annual chronic tests recommended.
Limit Required?	Limit = 1.0 TU_a	Limit = 7.1 TU_c
TRE Recommended? (from Checklist)	No.	No.

- After consideration of the guidance provided in the Department's *WET Program Guidance Document* (2022) and other information described above, **annual acute and chronic WET tests are recommended in the reissued permit.** 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. Testing should continue after the permit expiration date (until the permit is reissued).

- According to the requirements specified in s. NR 106.08, Wis. Adm. Code, an acute and chronic WET limit is required. **The acute WET limit shall be expressed as 1.0 TUa as a daily maximum in the effluent limits table of the permit. The chronic WET limit shall be expressed as 7.1 TUc as a monthly average in the effluent limits table of the permit.** Federal regulations in 40 CFR Part 122.44(i) require that monitoring occur at least once per year when a limit is present.

Attachment #2