Public Noticed Draft Wausau Permit Fact Sheet

General Information

Permit Number	WI-0025739-10-0
Permittee Name and Address	Wausau Water Works 407 Grant St City Hall, Wausau, WI 54403
Permitted Facility Name and Address	Wausau Water Works WW Treatment Facility 435 Adrian Street, Wausau, WI 54403
Permit Term	January 01, 2026 to December 31, 2030
Discharge Location	435 Adrian St., Wausau, WI 54403. NW ¼, NW ¼, Section 1, T28N, R7E, City of Wausau, Marathon County. West bank of the Wisconsin River, ¼ mile downstream of the Thomas St. bridge. Outfall: Lat: 44.94404° N / Lon: 89.62826° W.
Receiving Water	Wisconsin River in Lower Eau Claire River Watershed of the Central Wisconsin River Basin located in Marathon County
Stream Flow ($Q_{7,10}$)	850 cfs
Stream Classification	Warm Water Sportfish, Non-public Water Supply
Discharge Type	Continuous, Existing
Annual Average Design Flow (MGD)	8.2 MGD
Industrial or Commercial Contributors	Yes. 12 Categorical Industrial Users and 6 Other significant Industrial Users.
Plant Classification	This is an Advanced facility with required subclasses: A1 – Suspended Growth Processes, B – Solids Separation, C – Biological Solids/Sludges, P – Total Phosphorus, D – Disinfection, L – Laboratory and SS – Sanitary Sewage Collection System. The Operator-in-charge is certified at the advanced level in all subclasses except SS. There are other facility operators that have the SS-Sanitary Sewage Collection System subclass operator certification.
Approved Pretreatment Program?	Yes – Wausau's local municipal pretreatment program was approved by the department January 1, 1985.

Facility Description

The Wausau Wastewater Treatment Facility (WWTF) receives wastewater from the City of Wausau, the City of Schofield and the Town of Stettin, in addition to industrial wastewater from industries that are regulated under Wausau's pretreatment program. Wausau WWTF accepts and treats domestic holding tank, septic tank and grease trap interceptors, commercial septage and landfill leachate wastes. Landfill leachate was not accepted in 2022 or 2023, but it may be accepted again in the future. Wausau WWTF accepts approximately 10 gpd of petroleum contaminated groundwater from REI Engineering and also accepts groundwater that was previously contaminated with mineral spirits and pentachlorophenol from Wauleco Sentry Insurance which is pumped and treated prior to discharged into the collection system. Wausau WWTF has an annual average design flow of 8.2 MGD.

Influent from the aforementioned sources is first treated at the Wausau WWTF via two mechanical bar screens, followed by the PISTA grit removal system. Subsequent wastewater treatment consists of primary clarification then continues into four selector zones designed for biological phosphorus removal enhancement prior to entering the aeration basins then to then secondary clarifiers. Effluent from the secondary clarifiers travels to tertiary treatment where three disc filters filter TSS out of the secondary effluent. The disc filters may also be bypassed if treatment is not necessary for meeting limitations. Disc filters also have the option of chemical phosphorus removal through chemical precipitation, by the addition of Alum and Polymer to create a floc which removes phosphorus from the secondary effluent. The chemical precipitation option is only used when biological phosphorus removal is not functioning properly. Effluent from the disc filters is disinfected seasonally via ultraviolet disinfection prior to discharge into the Wisconsin River. Waste Activated Sludge is thickened using gravity belt thickeners prior to anaerobic digestion. Anaerobic sludge from the digester is dewatered using belt filter presses which is collected in a hopper where either Class B sludge can be recycled via land application on WDNR approved sites or wet cake can be routed to a thermal dryer where Class A EQ sludge is produced and recycled via land application on WDNR approved sites. Distribution is being considered, but not yet active.

Proposed permit changes include the following: 1) effluent limit for mercury removed from permit but monitoring and reporting on mitigation efforts remain, 2) replacement of fecal coliform effluent limits with E. coli limits, 3) addition of monitoring for effluent PFOS and PFOA once every two months and an associated determination of need schedule in accordance with s. NR 106.98(2)(b), Wis. Adm. Code., 5) new Class A sludge requirements, and 6)PFAS sludge 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 to quantitate risk.

Substantial Compliance Determination

Enforcement During Last Permit: Notices of Noncompliance were issued for three distinct sanitary sewer overflows on May 21,2020, August 20, 2020, November 5, 2020. Also, a NON was issued on January 09, 2019 for flow rate underreporting. Subsequent treatment plant upgrades were enacted to remediate the issue. The facility has completed all previously required actions as part of these Notices of Noncompliance's.

After a desk top review of all discharge monitoring reports, CMARs, land app reports, compliance schedule items, and a site visit on 11/20/2024, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Nick Linstrom on 06/30/2025

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	4.5 MGD	Representative composite influent samples shall be taken from the influent channel after the mechanical bar screens and just prior to the PISTA grit removal chamber.
001	4.92 MGD	Representative effluent samples, except those for E. coli, shall be collected at the disinfection channel prior to disinfection; samples for E. coli shall be collected after disinfection.
104	N/A – Field Blank	The field blank shall be collected using standard handling procedures every day that mercury samples are collected at influent and effluent.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
601	N/A – River Monitoring	Temperature and flow of the Wisconsin River shall be monitored for determination of Waste load Allocation (WLA) limits at Outfall 001. See subsections below for specific monitoring information.
002	1823 Dry Metric Tons	Class B, Cake, Anaerobically digested dewatered biosolids. Representative composite samples shall be collected from the wet cake loadout valve prior to land application or disposal. This is not a primary outfall and considered an emergency outfall.
003	0 Dry Tons	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to land application or disposal. This is not a primary outfall and considered an emergency outfall.
004	N/A – New Sample Point	Class A, Cake Biosolids, Heat dried exceptional quality biosolids for distribution to the public, land application or landfilling. Representative samples shall be collected from the truck load-out area and monitored quarterly. Pathogen control (List 3) monitoring is not required if the sludge is not stored at this location. All pathogen control samples shall be discrete samples. Each pathogen control sample shall meet the pathogen limit to prove effective pathogen treatment.
005	N/A – New Sample Point	Class A, Cake Biosolids, Heat dried exceptional quality biosolids from the biosolids storage building for distribution to the public, land application or landfilling. Representative samples shall be collected from the dried biosolids piles in the storage building. Fecal (List 3 and percent total solids (List 4) monitoring is not required during quarters when there is no public distribution. Retesting for pathogen control (List 3) is required prior to distribution of Class A sludge product to the public. Percent total solids monitoring (List 4) is required prior to distribution.
006	N/A – New Sample Point	Class A, Heat dried cake sludge, collected as dust prior to distribution or disposal. Representative samples shall be collected at the dust collector and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4).
010	N/A - Internal Sample Point	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to the dewatering belt filter presses. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1) and vector attraction reduction (List 4) if using volatile solids reduction to show compliance with vector attraction reduction requirements at outfalls 002 and 003. With department approval this sample point may be used to satisfy monitoring requirements for metals (List 1) for outfalls 002, 003, 004, 005 and

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
		006. The permittee shall demonstrate to the satisfaction of the department that the results for this outfall can be correlated with monitoring results for these other sample points and/or outfalls. This is a common sample point for metals (List 1), PPS and PCBs and is not an outfall for distribution.
011	N/A - Internal Sample Point	Class A, Cake, Heat dried exceptional quality biosolids. Representative composite samples shall be collected immediately after the sludge dryer for pathogen control treatment process monitoring (List 3). Class A heat drying requirements apply to show conformance with Class A. This is a sample point and not an outfall for distribution.

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	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Monthly	24-Hr Flow Prop Comp	See 'Mercury Monitoring' permit section.
Cadmium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Cyanide, Total		ug/L	Monthly	24-Hr Flow Prop Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Lead, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Silver, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	

1.1.1 Changes from Previous Permit:

There have been no changes to influent monitoring requirements from the previous permit.

1.1.2 Explanation of Limits and Monitoring Requirements

Section NR 210.04(2), Wis. Adm. Code, requires that influent wastewater strengths and volumes shall be characterized by monitoring for flow, BOD_5 and Total Suspended Solids (TSS). BOD_5 and TSS influent monitoring results are required to demonstrate the 85% removal requirement for BOD_5 and TSS found in ss. NR 210.05(1)(a)3 and (b)3, Wis. Adm. Code.

Pretreatment Program

The Wausau wastewater treatment facility has a design flow of more than 5 million gallon per day (MGD) and thus is required, pursuant to s. NR 211.20, Wis. Adm. Code, to administer an industrial pretreatment program. Monthly influent monitoring is required for cadmium, chromium, copper, cyanide, lead, mercury, nickel, and zinc.

2 Inplant - Monitoring and Limitations

2.1 Sample Point Number: 104- Mercury field blank

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Monthly	Blank	See 'Mercury Monitoring' permit section.

2.1.1 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.

2.1.2 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 TO WISCONSIN RIVER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Comp	
BOD5, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Comp	
WLA BOD5 Value		lbs/day	5/Week	See Table	Limits apply May-Oct. Report applicable variable limit on DMR. See 'Waste Load Allocation (WLA) Limits for BOD_5" below.
WLA BOD5 Discharged	Daily Max - Variable	lbs/day	5/Week	Calculated	Limits apply May-Oct. Report applicable variable limit on DMR. See 'Waste Load Allocation (WLA) Limits for BOD_5" below.
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
pH Field	Daily Min	6.0 su	5/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	24-Hr Flow Prop Comp	
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	Limit Effective May through September annually.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit Effective May through September annually. See the E. coli Percent Limit section below. 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**
Mercury, Total Recoverable		ng/L	Monthly	Grab	See mercury monitoring section below and Schedules section.
Cadmium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Cyanide, Total		ug/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Silver, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Hardness, Total as CaCO3		mg/L	Monthly	24-Hr Flow Prop Comp	Sample concurrently with all metals.
Pentachloro- phenol		ug/L	Monthly	Grab	
Phosphorus, Total	Monthly Avg	1.0 mg/L	5/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	34 lbs/day	5/Week	Calculated	See TMDL 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 TMDL section.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See TMDL section.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
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	
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.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET permit section.
Chronic WET		rTUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET permit section.

3.1.1 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.

E. coli- Fecal coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits.

Mercury- The removal of the mercury limit has been replaced with monitoring and a report on mercury is required to ensure mercury minimization efforts continue.

PFOS and PFOA – addition of once every two months monitoring and an associated determination of need schedule in accordance with s. NR 106.98(2)(b), Wis. Adm. Code.

3.1.2 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) and technologically based limits (TBEL) memo dated December 12, 2024 and titled **"**Wausau Water Works Wastewater Treatment Facility WPDES Permit No. WI-0025739."

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.

Phosphorus - Chapter NR 217, Wis. Adm. Code. specifies WQBELs for discharges of phosphorus to surface waters of the state. 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.

Wisconsin River Total Maximum Daily Load (TMDL): The permitted facility is included within the Wisconsin River Basin Total Maximum Daily Load (TMDL), which was approved by EPA April 26, 2019. The TMDL establishes Waste Load Allocations (WLAs) for point source dischargers and determines the maximum amounts of phosphorus that can be discharged and still protect water quality. The final effluent limits and monitoring expressed in the permit were derived from Site-Specific Criteria (SSC) for Lakes Petenwell, Castle Rock, and Wisconsin originally included in Appendix K of the TMDL report and approved by the U.S. Environmental Protection Agency on July 9, 2020. The permittee's approved SSC-based limits are consistent with the assumptions and requirements of the EPA-approved WLA in the TMDL, which is 9145 lbs/yr for the permitted facility.

The approved TMDL expresses WLAs as lbs/year and lbs/day (maximum annual load divided by 365 days). As outlined in Section 4.6 of the department's *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Program*, mass limits must be given in the permit that are consistent with the TMDL WLA and the phosphorus impracticability agreement that was approved by USEPA in 2012 (see NPDES MOA Addendum dated July 12, 2012 at https://apps.dnr.wi.gov/swims/Documents/DownloadDocument?id=167886175). Continuously discharging facilities covered by the WRB TMDL are given monthly average mass limits. The TMDL based mass limits are expressed as 20 lbs/day monthly average.

Facilities with WRB TMDL based effluent limits for phosphorus must report the 12-month rolling sum of total monthly discharge (lbs/yr). If reported 12-month rolling sums exceed the facility's max annual WLA, the facility's mass limits (monthly average and six-month average) may be recalculated using more appropriate CVs or monitoring frequencies when the permit is reissued to bring discharge levels into compliance with the facility's given WLA.

BOD_5 Waste Load Allocation Limits – For the months of May through October waste load allocated BOD_5 limits in pounds per day apply and are based on the flow and temperature of the Wisconsin River. River flow and river temperature monitoring and reporting are used to determine the daily point source allocation for Wausau ("WLA Value"). This value is compared to the actual daily discharge value of BOD_5 in pounds of BOD_5 per day ("WLA BOD_5 Discharged") to determine compliance. The tables of Waste Load Allocation Limits in lbs/day are found in the permit. In no case shall the WLA water quality related mass effluent limitations be less stringent than the applicable categorical concentration effluent limitations contained in the effluent limits and monitoring table.

Pretreatment Parameters – Wausau has a design flow of more than 5 million gallons per day (MGD) of treated effluent and is required, pursuant to s. NR 211.20, Wis. Adm. Code, to administer a pretreatment program. Monthly effluent monitoring is required for cadmium, chromium, copper, cyanide, lead, mercury, nickel, and zinc.

The need for effluent limitations for the pretreatment parameters listed above was evaluated in the December 12, 2024 WQBEL memo. Effluent concentrations were well below the calculated acute and chronic limitations and no limits for these parameters are recommended.

Mercury – The WQBEL for total recoverable mercury is set equal to the most stringent criterion of 1.3 ng/L, according to s. NR 106.06 (6), Wis. Adm. Code, because the background concentration in the receiving water and similar inland streams is known to exceed 1.3 ng/L.

Considering available effluent data from the current permit term (January 2022 to October 2024), the 30-day P_{99} concentration is 1.04 ng/L, the 4-day P_{99} concentration is 1.34 ng/L, and the 1-day P_{99} concentration is 1.92 ng/L, with a maximum concentration of 2.19 ng/L. These effluent concentrations are below the calculated WQBELs for mercury, therefore no effluent limits are needed. To ensure that representative sample results are available at the next permit issuance, monthly mercury monitoring is required.

Antidegradation and Antibacksliding

Since current treatment capability and PMP/SRM measures are expected to remain in place, the removal of the daily maximum mercury limit will not increase the concentration, level, or loading of mercury to the Wisconsin River. Therefore, antidegradation would not be applicable. To be consistent with antibacksliding requirements, the current limit was removed in accordance with s. NR 207.12(4)(b), Wis. Adm. Code.

Total Nitrogen Monitoring (NO2+NO3, TKN and Total N)- The Department has included effluent monitoring for Total Nitrogen through the authority under s. 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. Quarterly monitoring is required.

Disinfection/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. Monitoring and limits for E. Coli are required seasonally May-September throughout the permit term.

PFOS and PFOA - NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. At the first reissuance of a WPDES permit after August 1, 2022, the new rule requires WPDES permits for major municipal dischargers with an average flow rate greater than 1 MGD but less than 5 MGD, at a minimum sample effluent once every two-months for PFOS and PFOA pursuant s. NR 106.98(2)(b), Wis. Adm. Code.

A sample frequency of 1/2 months means one sample is taken during any two-month period. Examples of 1/2 month sample would be every other month (Jan, March, May, etc.) or back-to-back months with a break in between (February & March, May & June, Aug & Sept, etc.). DMR Short Forms will be generated for the following time periods: January-February, March-April, May-June, July-August, September-October, and November-December. At a minimum one sample result will be present on each form.

The initial determination of the need for sampling shall be conducted for up to two years in order to determine if the permitted discharge has the reasonable potential to cause or contribute to an exceedance of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code.

Whole Effluent Toxicity- Whole effluent toxicity (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. See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at http://dnr.wi.gov/topic/wastewater/wet.html Since the facility performed an Acute WET test in 2025 which is the same as part of the year 1 of the reissued permit, they were given 4 annual tests in the reissued permit and still fulfill their annual reporting requirements.

3.2 Sample Point Number: 601- WISCONSIN RIVER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WLA Previous Day River Flow		cfs	5/Week	Measure	Monitoring required May through October when Waste Load Allocation BOD5 limits apply.
WLA Previous Day River Temp		deg F	5/Week	Measure	Monitoring required May through October when Waste Load Allocation BOD5 limits apply.

3.2.1 Changes from Previous Permit

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

3.2.2 Explanation of Limits and Monitoring Requirements

The discharge of BOD_5 to the Wisconsin River for river miles 265.0 to 260.0 is waste load allocated between multiple dischargers to this reach of the river. Monitoring of river flow and river temperature is used to determine the variable "Waste load Allocation Limits in lbs/day for BOD_5" from the tables in the permit and that are reported in the monitoring table at section in the permit for "WLA Value".

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)**
002	B	Cake	Anaerobic Digestion Fecal Coliform	Volatile Solids Reduction	Land Application or Landfilling	1823 Dry Metric Tons
003	B	Liquid	Anaerobic Digestion Fecal Coliform	Volatile Solids Reduction	Land Application	0 Dry Tons
004	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	N/A – New Sample Point

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)**
005	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	N/A – New Sample Point
006	A (Exceptional Quality)	Cake (Collected as Dust)	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	N/A – New Sample Point
010	B	Liquid	N/A	Volatile Solids Reduction	Sample point only	N/A - Internal Sample Point
011	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	N/A	Sample point only	N/A - Internal Sample Point
* The permittee primarily uses Volatile Solids Reduction to satisfy Vector Attraction Reduction requirements (List 4), however, based on operational needs may also satisfy List 4 requirements through Drying with Primary Solids, Injection (liquid sludge) or Incorporation.						
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No, 180 days provided on site.						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No.						
Is a priority pollutant scan required? **No.** Wausau conducted a priority pollutant scan (PPS) during the last permit term. Therefore, the PPS is not required during this permit term as specified in ch. NR 215, Wis. Adm. Code, and under the authority of s. NR 204.06(2)(b)6, Wis. Adm. Code. Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

Changes from Previous Permit:

Wausau upgraded its biosolids (sludge) treatment processes to produce Class A Exceptional Quality (EQ) biosolids. Exceptional quality biosolids may be sold or given away in a bag or other container by the permittee to either commercial or domestic users to be applied to lawns and home gardens as well as other sites allowed under ch. NR 204, Wis. Adm. Code. Exceptional quality biosolids are considered not to pose any reasonably anticipated threat to public health or the environment and are exempt from some requirements of ch. NR 204, Wis. Adm. Code (see NR 204.04(3), Exemptions.).

To provide Wausau with operational flexibility for the beneficial reuse of biosolids sample points/outfalls 010, 003, 011, 004, 005 and 006 have been added to the permit. Existing outfall 002 for landspreading Class B cake biosolids is retained with updated monitoring requirements.

The department recommends that the permittee follow the department's most recent interim strategy for PFAS in biosolids Sludge discharges from outfalls are required to be monitored for PFAS. If an outfall is not used, then PFAS is not required to be monitored.

Monitoring for lists 2, 3 and 4 are not required when sludge is landfilled in place of distribution and/or land application.

Wausau's solids treatment train will include anaerobic digestion and thickening of raw sludge from wastewater treatment processes into Class B liquid biosolids (common sample point 010 and outfall 003), dewatering of the thickened Class B liquid biosolids with belt filter presses into Class B cake biosolids (existing outfall 002), heat drying of the Class B cake biosolids to produce a Class A heat dried exceptional quality cake biosolids (sample point 011, and outfalls 004, 005 and 006). See the "Sample Point Designation" table on pages 2 through 3 above for detailed descriptions of the biosolids sampling points/outfalls in this permit and related monitoring requirements.

4.1 Sample Point Number: 002- CLASS B CAKE SLUDGE; 003- CLASS B 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	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
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	
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.

4.1.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term new PFAS monitoring added.

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

4.1.2 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., The use of the department's "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS" is recommended.

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.

4.2 Sample Point Number: 004- CLASS A EQ SLUDGE DISTRIBUTION; 005- CLASS A EQ SLUDGE STORAGE; 006- CLASS A EQ DUST

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	
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

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					PFAS List. See PFAS Permit Sections for more information.

4.2.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and no changes.

4.2.2 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., The use of the department's "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS" is recommended.

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.

4.3 Sample Point Number: 010- CLASS B 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	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
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	

4.3.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and no changes.

4.3.2 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).

4.4 Sample Point Number: 011- CLASS A EQ SLUDGE

List 3 **PATHOGEN CONTROL FOR CLASS A SLUDGE** The following requirements shall be met prior to land application of sludge.		
Parameter	**Unit**	**Limit**
Fecal Coliform*	MPN/gTS	1000
OR		
Salmonella	MPN/4gTS	3
AND, ONE OF THE FOLLOWING PROCESS OPTIONS		
Temp/Time based on % Solids	Alkaline Treatment	
Prior test for Enteric Virus/Viable Helminth Ova	Post test for Enteric Virus/Viable Helminth Ova	

List 3 PATHOGEN CONTROL FOR CLASS A SLUDGE The following requirements shall be met prior to land application of sludge.		
Parameter	**Unit**	**Limit**
Fecal Coliform*	MPN/gTS	1000
Composting	Heat Drying	
Heat Treatment	Thermophilic Aerobic Digestion	
Beta Ray Irradiation	Gamma Ray Irradiation	
Pasteurization	PFRP Equivalent Process	
* The Fecal Coliform limit shall be reported as the discrete monitoring results of 7 discrete samples on a dry weight basis.		

4.4.1 Changes from Previous Permit:

No changes. This is a sample point to monitor for pathogen control treatment processing immediately after the Class A treatment process (heat drying). This is not an outfall for distribution.

4.4.2 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).

5 Schedules

5.1 Mercury Pollutant Minimization Summary

Required Action	Due Date
Final Mercury Report: Submit a report summarizing the mercury pollutant minimization measures implemented during the current permit term and the success in maintaining effluent quality at or below the current concentrations. The report shall include an analysis of trends in quarterly and annual average mercury concentrations and total mass discharge of mercury based on mercury sampling and flow data covering the current permit term. The report shall also include an analysis of how influent and effluent mercury varies with time and with significant loadings of mercury such as loads from industries or collection system maintenance.	12/31/2029

5.1.1 Explanation of Schedule

A report on mercury is required to ensure mercury minimization efforts continue and demonstrated.

5.2 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.	12/31/2026
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.	12/31/2027

5.2.1 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.

Other Comments

TBD

Attachments

Water Quality Based Effluent Limits

Public Notice – Wausau Daily Herald, 800 Scott St, Wausau, WI 54402

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Angela Parkhurst Wastewater Specialist Date: November 10, 2025