Permit Modification Fact Sheet

Changes from the previous permit fact sheet are highlighted in grey.

General Information

Permit Number:	WI-0024830-10-1	
Permittee Name:	VILLAGE OF MONTICELLO	
Address:	P O Box 147 140 North Main Street	
City/State/Zip:	Monticello WI 53570-0147	
Discharge Location:	¼ mile south of East Lake Road, west bank of the West Branch Little Sugar River, SW ¼ of SW ¼ Section 8, T3N, R8E. Lat: 42.74420º N / Lon: 89.58274º W	
Receiving Water:	West Branch Little Sugar River (Little Sugar River Watershed, SP14 – Sugar-Pecatonica River Basin) in Green County	
Stream Flow ($Q_{7,10}$):	6.6 cfs	
Stream Classification:	Warm Water Sport Fish (WWSF), non-public water supply	
Design Flow:	Annual Average	0.421 MGD
Significant Industrial Loading?	Sabrosura Foods, Casey's Carwash	
Operator at Proper Grade?	Yes. This treatment facility's level of operations is Basic and requires an operator-in-charge (OIC) certified at the Basic Level in subclasses A1 – Suspended Growth Processes, B – Solids Separation, C – Biological Solids/Sludges, P – Total Phosphorus, D – Disinfection and SS – Sanitary Sewage Collection System. The OIC is fully certified in all required subclasses.	
Approved Pretreatment Program?	N/A	

Facility Description

The Village of Monticello wastewater treatment plant serves a population of 1,170 with one significant industry. This facility is an activated sludge (oxidation ditch) wastewater treatment facility. Preliminary treatment of fine screening and grit removal precedes the oxidation ditch. Alum is added for phosphorus control and treated wastewater is clarified in two final clarifiers. The clarified effluent passes through a UV system for disinfection prior to discharge to the West Branch of the Little Sugar River. The clarifier underflow (sludge) is returned to the head of the plant with a portion pumped to an aerobic digester where it is stabilized and then stored in an on-site tank. In the spring and fall biosolids are land spread on DNR approved agricultural sites.

The Village of Monticello is about eighteen months into an upgrade of the treatment plant (construction is expected to be completed by April 2023). Upgrades to the plant include addition of biological phosphorus removal capabilities, a new concrete tank for sludge storage, a screw press for sludge dewatering, a new cake sludge storage building, installation of a SCADA system, replacement of old pumps, wiring, and UV disinfection mechanics with newer equipment, and restoration of clarifier domes

The treatment plant upgrade currently in progress will add biological phosphorus removal and the treatment facility's level of operations will be changed from Basic to Advanced. After the plant upgrade is completed, pursuant to s. NR

114.53(5), Wis. Adm. Code, the operator-in-charge shall have 36 months to obtain advanced certification in all required subclasses except SS, which is a Basic Level subclass only.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, CMARs, land app reports, compliance schedule items, and a site visit on January 24, 2023, this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)**
701	0.346 MGD (Oct. 2017 – Oct. 2022 Average)	Representative influent samples shall be collected prior to fine screening.
001	0.319 MGD (Oct. 2017 – Oct. 2022 Average)	Representative effluent 24-Hour Flow Prop Composite samples shall be collected prior to the UV channel prior to discharge to the West Branch Little Sugar River. Grab samples shall be collected in the UV channel prior to discharge.
002	15 Dry US Tons (2022 Permit Application)	Liquid, Class B; Representative sludge samples shall be collected prior to the pump for the cake press.
004	N/A New Outfall	Cake, Class B; Representative sludge samples shall be collected prior to the conveyor belt to the cake sludge shed.

1 Influent - Proposed Monitoring

Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	3/Week	24-Hr Flow Prop Comp	

Changes from Previous Permit:

Flow Rate sample frequency has been changed to daily.

Explanation of Limits and Monitoring Requirements

Tracking of BOD_5 and Suspended Solids are required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code and Section 5.4.6 of the permit. These are standard monitoring requirements for a municipal treatment facility of this size.

2 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	31 mg/L	3/Week	24-Hr Flow Prop Comp	May through October
BOD5, Total	Weekly Avg	45 mg/L	3/Week	24-Hr Flow Prop Comp	November through April
BOD5, Total	Monthly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Weekly Avg	109 lbs/day	Weekly	Calculated	
Suspended Solids, Total	Weekly Avg	31 mg/L	3/Week	24-Hr Flow Prop Comp	May through October
Suspended Solids, Total	Weekly Avg	45 mg/L	3/Week	24-Hr Flow Prop Comp	November through April
Suspended Solids, Total	Monthly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	109 lbs/day	Weekly	Calculated	
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max	17 mg/L	3/Week	24-Hr Flow Prop Comp	October through May
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	11 mg/L	3/Week	24-Hr Flow Prop Comp	April through May
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	18 mg/L	3/Week	24-Hr Flow Prop Comp	June through September
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	17 mg/L	3/Week	24-Hr Flow Prop Comp	October through March
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	6.7 mg/L	3/Week	24-Hr Flow Prop Comp	April through May
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	14 mg/L	3/Week	24-Hr Flow Prop Comp	June through September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	12 mg/L	3/Week	24-Hr Flow Prop Comp	October through March

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	2/Week	Grab	Interim limit effective May through September annually until the final E. coli limit goes into effect per the Effluent Limitations for E. coli Schedule.
E. coli		#/100 ml	2/Week	Grab	Monitoring only May through September annually until the final limit goes into effect per the Effluent Limitations for E. coli Schedule.
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	Limit Effective May through September annually per the Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit Effective May through September annually per the Effluent Limitations for E. coli Schedule. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.
Chloride		mg/L	Monthly	24-Hr Flow Prop Comp	January 1, 2026 through December 31, 2026. Monitoring Only.
PFOS		ng/L	Annual	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
PFOA		ng/L	Annual	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
Phosphorus, Total	Monthly Avg	0.75 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective throughout the permit term, as it represents a minimum control level. See "Water Quality Trading (WQT)"

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					sections for more information.
Phosphorus, Total		mg/L	3/Week	Calculated	Report daily mass discharged using Equation 1a. in the "Water Quality Trading (WQT)" section.
WQT Credits Used (TP)		lbs/month	Monthly	Calculated	Report WQT TP Credits used per month using Equation 2c. in the "Water Quality Trading (WQT)" section. Available TP Credits are specified in Table 2 and in the approved Water Quality Trading Plan.
WQT Computed Compliance (TP)	Monthly Avg	0.225 mg/L	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 4a. in the "Water Quality Trading (WQT)" section. Value entered on the last day of the month.
WQT Computed Compliance (TP)	6-Month Avg	0.075 mg/L	Monthly	Calculated	Value entered on the last day of the month.
WQT Computed Compliance (TP)	6-Month Avg	0.26 lbs/day	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 4b. in the "Water Quality Trading (WQT)" section. Value entered on the last day of the month.
WQT Credits Used (TP)	Annual Total	409 lbs/yr	Annual	Total Annual	The sum of total monthly credits used may not exceed Table 2 values listed below.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See Nitrogen Series Monitoring section below.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See Nitrogen Series Monitoring section below.

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

Changes from Previous Permit

- The sampling frequency for pH has been increased from 3/Week to 5/Week.
- Ammonia Nitrogen limitations have been changed. Daily maximum is now 17 mg/L down from 22 mg/L. A new Weekly average limit of 17 mg/L for the months of October through March has been added for this reissuance. The sampling frequency for Ammonia Nitrogen has been increased from 2/Week to 3/Week.
- The Weekly Geometric Mean for Fecal Coliform has been removed from the permit.
- The timeframe for sampling for Chloride is now calendar year 2026.
- Fecal coliform monitoring and limits have been replaced with *Escherechia coli* (*E. coli*) monitoring and limits. *E. coli* monitoring is required at the permit effective date. An interim fecal coliform limit of 400 #/100 ml as a monthly geometric mean will apply from the permit effective date through the end of a compliance schedule. At the end of the compliance schedule, *E. coli* limits of 126 #/100 ml as a monthly geometric mean that may never be exceeded and 410 #/100 ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month will apply.
- ~~Monitoring once every two months for PFOS and PFOA is included in the permit in accordance with s. NR 106.98(2)(c), Wis. Adm. Code.~~ The monitoring frequency for PFOS and PFOA has been reduced from 1/ 2 Months to Annual.
- Monitoring requirements associated with Water Quality Trading have been incorporated into the permit as the permittee has an approved trading plan they will use to demonstrate compliance with Total Phosphorus limits.
- Annual monitoring for Total Nitrogen parameters (TKN, $N0_2$+$N0_3$ and Total N) is required in rotating quarters throughout the permit term.
- Two Acute and Two Chronic WET tests in rotating quarters have been added to the permit.

Explanation of Limits and Monitoring Requirements

Please refer to the Water Quality Based Effluent Limitations (WQBEL) memo dated November 7th, 2022 by Sarah Luck for the detailed explanation

Note: Throughout this fact sheet all citations of administrative code, for example, s. NR 102.06, Wis. Adm. Code, will be referenced as s. NR 102.06, and reflect current Wisconsin Administrative Code.

Monitoring Frequency Evaluation: Monitoring frequencies for parameters that have final effluent limits in effect during this permit term were evaluated taking into consideration the size and type of the facility, and whether the monitoring occurs frequently enough to characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Monitoring frequency decisions are based on requirements in s. NR 205.066(1), Wis. Adm. Code, (decisions are case-by-case) and considering the factors in s. NR 210.04, Wis. Adm. Code, along with recommendations provided in the Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021). The sampling frequencies for several parameters have been increased for this permit term. Ammonia Nitrogen has been increased from 2/Week to 3/Week and pH has been increased from 3/Week to 5/Week. The required monitoring frequencies are consistent with other municipal treatment facilities with similar design flows and processes and provide needed data to characterize effluent quality and variability associated with the upgraded treatment system.

Categorical Limits

BOD_5, Total Suspended Solids (TSS) and pH

No changes are recommended in the categorical permit limitations for BOD_5, TSS and pH. Because the 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. Where the receiving water is classified as limited aquatic life as defined in s. NR 104.02(3)(b), the categorical limits for BOD_5, TSS and pH are those limits enumerated in ss. NR 210.05(3)(a) – (d).

Water Quality Based Limits and WET Requirements and Disinfection (if applicable)

Ammonia – Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code (effective March 1, 2004). Subchapter III of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia.

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.

Chloride – Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. The calculated 1-day Upper 99th Percentile of Monticello's reported chloride effluent concentrations is less than the acute (daily maximum) chloride limit and the 4-day Upper 99th Percentile is less than the chronic (weekly average) chloride limit, so chloride limits are not needed in this permit. Chloride monitoring is required in calendar year 2021 to collect data for the next permit reissuance.

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 municipal dischargers with an average flow rate less than 1 MGD, to be evaluated on a case-by-case basis to determine if monitoring is required pursuant to s. NR 106.98(2)(c), Wis. Adm. Code. The department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites and other potential sources of PFOS or PFOA. Based on information available at the time the proposed permit was drafted, it was identified that the POTW has an indirect discharger(s) that may be a potential source of PFOS/PFOA. Therefore, monitoring once every two months is included. 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.

Pursuant to s. NR 205.066, Wis. Adm. Code, the department may specify the monitoring frequency for PFOS and PFOA on a case-by-case basis after the initial 24 months of sampling.

After a review of the data submitted with the Year 2 Report on Effluent Discharges, the department has determined that it is warranted to reduce the sampling frequency in this case. The department is requiring continued monitoring of these compounds to complete the permit term to ensure that the current effluent quality is maintained. At the next permit reissuance, the department will make another determination as to whether further reduction or removal of monitoring is warranted, based on the continued sampling results.

Phosphorus – Phosphorus requirements are based on the Phosphorus Rules that became effective December 1, 2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. Currently in NR 217 Wis. Adm. Code there are two methods used to determine if a phosphorus limit is needed: a technology based effluent limit (TBEL) and a water quality based effluent limit (WQBEL). Based on the size and classification of the stream, the water quality criteria for the West Branch Sugar River is 75 ug/L. In this case, the WQBEL is 0.225 mg/L (monthly average), 0.075 mg/L & 0.26 lbs/day (6-month average). For the reasons explained in the April 30, 2012 paper entitled 'Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin', WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly value. The final effluent limit for phosphorus is expressed as a six-month average. It is also expressed as a monthly average equal to three times the derived WQBEL (which equates to 0.3 mg/L). This final effluent limit was derived from and complies with the applicable water quality criterion. A phosphorus concentration limit is necessary to prevent backsliding during the term of the permit.

The wastewater treatment facility is not able to meet the WQBEL. This permit authorizes the use of trading as a tool to demonstrate compliance with the phosphorus WQBELs. This permit includes terms and conditions related to the Water Quality Trading Plan (WQT-2021-0011) or approved amendments thereof. The total 'WQT TP Credits' available are designated in the approved WQT Plan. The City is implementing streambank stabilization projects to generate credits. The WQT Plan proposes the generation of 409 lbs/yr of phosphorus credits for the next five years.

Additional WQT subsections in the permit provide information on compliance determinations, annual reporting and re-opening of the permit.

Total Nitrogen Monitoring (NO2+NO3, TKN and Total N): The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under §§ 283.55(1)(e), Wis. Stats., which allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. More information on the justification to include total nitrogen monitoring in wastewater permits can be found in the "Guidance for Total Nitrogen Monitoring in Wastewater Permits" dated October 1, 2019. Annual tests are scheduled in the following rotating quarters: **July – September 2023; October – December 2024; January – March 2025; April – June 2026; July – September 2027**

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.

3 Land Application - Proposed 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	Liquid	Fecal Coliform	Injection	Land Application	15
004	B	Cake	Fecal Coliform	Incorporation	Land Application or Landfilling	N/A – New Outfall
Does sludge management demonstrate compliance? **Yes**						
Is additional sludge storage required? **No**						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **Yes** If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in land applying sludge from this facility						
Is a priority pollutant scan required? **No**, design flow is less than 5 MGD (0.421 MGD). 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.						

Sample Point Number: 002 - LIQUID SLUDGE and 004 - CAKE SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	January 1, 2024 - December 31, 2024
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	January 1, 2024 - December 31, 2024
Radium 226 Dry Wt		pCi/g	Annual	Composite	
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	

Changes from Previous Permit:

New timeframe for monitoring PCBs is now calendar year 2024. Addition of sample point 004 to reflect new facility capability to produce cake sludge.

Explanation of Limits and Monitoring Requirements

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

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

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

4 Schedules

4.1 Annual Water Quality Trading (WQT) Report

Required Action	Due Date
Annual WQT Report: Submit an annual WQT report that shall cover the first year of the permit term. The WQT Report shall include: The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance; The source of each month's pollutant reduction credits by identifying the approved water quality trading plan that details the source; A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.	01/31/2024
Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year.	01/31/2025
Annual WQT Report #3: Submit an annual WQT report that shall cover the previous year.	01/31/2026
Annual WQT Report #4: Submit an annual WQT report that shall cover the previous year.	01/31/2027
Annual WQT Report #5: Submit the 5th annual WQT report. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	01/31/2028
Annual WQT Report Required After Permit Expiration: In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of noncompliance or failure to implement any terms or conditions of the approved water quality trading plan for the previous calendar year.	

Explanation of Annual Water Quality Trading (WQT) Report

Reports are required, starting in 2023, that include the following information:

- Verification that site inspections occurred;
- Brief summary of site inspection findings;
- Identification of noncompliance or failure to implement any terms or conditions of the permit or trading plan that have not been reported in discharge monitoring reports;
- Any applicable notices of termination or management practice registration; and
- A summary of credits used each month over the calendar year

4.2 Effluent Limitations for E. coli

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

Required Action	Due Date
Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.	05/21/2023
Operational Evaluation Report: The permittee shall prepare and submit an Operational Evaluation Report to the Department for review and approval. The report shall include an evaluation of collected effluent data and proposed operational improvements that will optimize efficacy of disinfection at the treatment plant during the period prior to complying with final E. coli limitations and, to the extent possible, enable compliance with the final E. coli limitations. The report shall include a plan and schedule for implementation of the operational improvements. These improvements shall occur as soon as possible, but not later than 4/30/2023. The report shall state whether the operational improvements are expected to result in compliance with the final E. coli limitations. The permittee shall implement the operational improvements in accordance with the approved plan and schedule specified in the Operational Evaluation Report and in no case later than 4/30/2023. If the Operational Evaluation Report concludes that the operational improvements are expected to result in compliance with the final E. coli limitations, the permittee shall comply with the final E. coli limitations by April 30, 2023 and the permittee is not required to comply with subsequent milestones identified below in this compliance schedule (‘Submit Facility Plan’, 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet Limitations', ‘Construction Upgrade Progress Report’, 'Complete Construction', 'Achieve Compliance'). FACILITY PLAN - If the Operational Evaluation Report concludes that operational improvements alone are not expected to result in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final E. coli limitations using the existing treatment system with only operational improvements, the Department may reopen and modify the permit to include an implementation schedule for achieving the final E. coli limitations sooner than April 30, 2026.	11/30/2023
Submit Facility Plan: If the Operational Evaluation Report concluded that the permittee cannot achieve final E. coli limitations with operational improvements alone, the permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor.	04/30/2024
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to achieve compliance with final E. coli limitations and a schedule for completing construction of the upgrades by the complete construction date specified below.	03/31/2025
Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	09/30/2025
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2026

Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	03/31/2027
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/30/2027

Explanation of Effluent Limitations for E. Coli

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

4.3 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
Report on Effluent Discharge: Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code. This report shall include all PFOS and PFOA data collected including any voluntary influent, intake, in-plant, collection system sampling, and blank sample results.	03/31/2024
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 PFOS and PFOA data collected including any voluntary 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.	03/31/2025

Explanation of PFOS/PFOA Minimization Plan Determination of Need

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

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

Attachments:

~~Map(s)~~

~~Water Quality Based Effluent Limits~~

~~WET Checklist Summary~~

~~Public Notice~~

PFOS and PFOA Water Quality-Based Effluent Limitations for the Monticello Wastewater Treatment Facility - WPDES Permit No. (WI-0024830) in Green County, by Amy Garbe, PE, Wastewater Engineer, dated April 17, 2025

Justification Of Any Waivers from Permit Application Requirements

No waivers were requested for the permit application.

Proposed Expiration Date:

A permit term of five years is proposed in this reissuance with an expiration date of March 31, 2028.

Prepared By:

Sean Spencer – Wastewater Specialist

Date: February 1, 2023

Revised By: Sarah Donoughe, Wastewater Specialist-Adv

Date: April 23, 2025

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: April 17, 2025

TO: Sarah Donoughe – NER

FROM: Kari Fleming – WY/3

SUBJECT: PFOS and PFOA Water Quality-Based Effluent Limitations for the Monticello Wastewater Treatment Facility -WPDES Permit No. (WI-0024830) in Green County

This is in response to your request for an evaluation of the need for PFOS and PFOA limitations for the Monticello Wastewater Treatment Facility. This municipal wastewater treatment facility (WWTF) discharges to the West Branch Little Sugar River, located in the Little Sugar River Watershed in the Sugar Pecatonica River Basin..

The current permit, effective since April 2023, has monitoring only for PFOS and PFOA. The following review is based on new regulations which are now in effect throughout the state of Wisconsin and recommendations are made in accordance with chapters NR 102, 104, 105, 106, 207, and 217 of the Wisconsin Administrative Code, where applicable.

Receiving Water Information

- Name: West Branch Little Sugar River
- Classification: Warm Water Sport Fish (WWSF) community, non-public water supply
- Flow: The following 7-Q10 and 7-Q2 values are from USGS for the Station located at the Lake Street Bridge in Monticello, 400 ft. upstream of where Outfall 001 is located. The Harmonic Mean has been estimated as recommended in State of Wisconsin Water Quality Rules Implementation Plan (Publ. WT-511-98).
  7-Q10 = 6.6 cfs (cubic feet per second)
  7-Q2 = 10 cfs
  90-Q10 = 8.5 cfs
  Harmonic Mean Flow = 14.95 cfs

- % of Flow used to calculate limits: 25%

Effluent Information

- Flow: Average Design Flow = 0.421 MGD. For reference, the actual average flow from January 2023 to March 2025 was 0.260 MGD.
- Effluent characterization: This facility is categorized as a mionr municipality.

The following table lists the statistics for effluent PFOS and PFOA levels from June 2023 through March 2025.

	PFOS ng/L	PFOA ng/L
1-day P_{99}	2.35	23.47
4-day P_{99}	1.74	12.92
30-day P_{99}	1.41	6.00
Mean	1.24	3.20

Std	0.37	5.16
Sample Size	12	12
Range	0.66-1.71	0.773-19.5

Water Quality Based Limit – PFOS and PFOA
Administrative rules for PFOS and PFOA took effect on August 1, 2022. These rule revisions include additions to ch. NR 102 (s. NR 102.05), Wis. Adm. Code, which establish PFOS and PFOA standards for surface waters. Revisions to ch. NR 106 (s. NR 106, Subchapter VIII), Wis. Adm. Code establish procedures for determining water quality based effluent limits for PFOS and PFOA, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

PFOS
Due to PFOS being a bioaccumulating compound of concern (BCC), no mixing zone is allowed pursuant s. NR 106.98(4), Wis. Adm. Code. Therefore, the effluent limit for PFOS is set equal to criteria (8 ng/L).

PFOA
The conservation of mass equation is described in s. NR 106.06(4)(b)1. Wis. Adm. Code, and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream PFOA concentrations (Cs) provided below.

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

Where:

WQC = 95 ng/L for West Branch Little Sugar River
Qs = 25% of the harmonic mean pursuant s. NR 106.06(4)(c)10., Wis. Adm. Code = 3.74 cfs
Cs = background concentration of PFOA in the receiving water pursuant to s. NR 106.06(4)(e), Wis. Adm. Code
Qe = effluent flow rate = 0.421 MGD = 0.651 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

After substituting the appropriate variables, the calculated PFOA limit is 640 ng/L.

Reasonable Potential Determination
In accordance with s. NR 106.98(4)(a), Wis. Adm. Code, **the discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS** because the 30-day P_{99} of reported effluent PFOS data is less than the calculated WQBEL (8 ng/L). Therefore, **a WQBEL is not required.**

The discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOA because the 30-day P_{99} of reported effluent PFOA data is less than the calculated WQBEL (640 ng/L). Therefore, **a WQBEL is not required.**

Conclusions
The discharge has no reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS nor PFOA. Therefore, no WQBELs are required.

Pursuant to s. NR 205.066, Wis. Adm. Code, the department may specify the monitoring frequency for PFOS and PFOA on a case-by-case basis after the initial 24 months of sampling. **After a review of the available data, the department has determined that it is warranted to reduce the sampling**

frequency in this case to annually.

If there are any questions or comments on these recommendations, please contact Amy Garbe by telephone at (608) 716-9968 or by email at Amy.Garbe@wisconsin.gov.

Attachments (2) – P99 Calculations

PREPARED BY: _____ date: 4/17/25
Amy Garbe, P.E., Wastewater Engineer

cc: Kenzie Ostien, Basin Engineer – SCR/Fitchburg
Nate Willis, P.E., PFAS Implementation Coordinator – CO

Attachment 1 – PFOS P99 Calculation

EFFLUENT VARIABILITY ANALYSIS -			
=	= =	=	=
SUBSTANCE:			
NUMBER OF VALUES:	------		
TOTAL	12		
DETECTED	12		
NON-DETECTED	0		
d	0		
m	1.238417		
mean of all data	1.238417		
s	0.373046		
	------	------	------
n	1	4	30
d^n	0	0	0
p	0.99	0.99	0.99
Z_p	2.326785	2.326785	2.326785
1+(s/m)^2	1.090738	1.090738	1.090738
(sigma_d)^2	0.086855	0.086855	0.086855
mu_d	0.170406	0.170406	0.170406
(sigma_dn)^2	0.086855	0.022431	0.00302
mu_dn	0.170406	0.202618	0.212324
P_99 exponent	0.856137	0.551101	0.340192
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P_99	2.35	1.74	1.41
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Data Summary	
Jun-23	1.49
Aug-23	1.6
Oct-23	1.27
Nov-23	1.71
Jan-24	1.1
Mar-24	0.66
May-24	1.34
Jul-24	1.62
Sep-24	1.53
Nov-24	1.03
Jan-25	0.822
Mar-25	0.689

Attachment 2 – PFOA P99 Calculation

EFFLUENT VARIABILITY ANALYSIS -				
=	= =	=	=	
SUBSTANCE:				
NUMBER OF VALUES:	------			
TOTAL	12			
DETECTED	12			
NON-DETECTED	0			
d	0			
m	3.198583			
mean of all data	3.198583			
s	5.159057			
	------	------	------	
n	1	4	30	
d^n	0	0	0	
p	0.99	0.99	0.99	
Z_p	2.326785	2.326785	2.326785	
1+(s/m)^2	3.601509	3.601509	3.601509	
(sigma_d)^2	1.281353	1.281353	1.281353	
mu_d	0.522032	0.522032	0.522032	
(sigma_dn)^2	1.281353	0.501004	0.083161	
mu_dn	0.522032	0.912206	1.121127	
P_99 exponent	3.15588	2.559143	1.792118	
	-------	-------	-------	
P_99	23.47	12.92	6.00	
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Data Summary	
Jun-23	2.44
Aug-23	1.9
Oct-23	1.75
Nov-23	19.5
Jan-24	2.38
Mar-24	1.54
May-24	1.97
Jul-24	1.62
Sep-24	2.21
Nov-24	1.18
Jan-25	1.12
Mar-25	0.773