



WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
**PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE
ELIMINATION SYSTEM**

CITY OF WAUPUN

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility
located at

501 NORTH FOND DU LAC STREET, WAUPUN, WISCONSIN

to

**SOUTH BRANCH OF ROCK RIVER (UPPER ROCK RIVER WATERSHED, UR12-UPPER ROCK RIVER
BASIN) IN FOND DU LAC COUNTY**

in accordance with the effluent limitations, monitoring requirements and other conditions set
forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after
this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis.
Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____
Amy Garbe
Wastewater Engineer

Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE – January 01, 2024
Modification Effective Date – November 1, 2024
Modification Effective Date – January 1, 2025

EXPIRATION DATE – December 31, 2028

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1 Influent Requirements

1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
701	INFLUENT: 24-Hr flow proportional composite influent samples shall be collected prior to the grit tanks and after influent screening.

1.2 Monitoring Requirements

The permittee shall comply with the following monitoring requirements.

1.2.1 Sampling Point 701 - INFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , 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	Quarterly	24-Hr Flow Prop Comp	See 'Mercury Monitoring' section.

1.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2 In-Plant Requirements

2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
102	FIELD BLANK: Mercury field blanks shall be collected using Clean Hands/Dirty Hands sample handling procedures.
103	BLENDING: Sample point for reporting diverted flow from the primary clarifiers during high flow events. Wastewater flow bypasses the aeration basins, final clarifiers and tertiary algal treatment, and then receives disinfection prior to discharge. The permittee shall notify the Department when blending occurs. See "Blending" requirements in the Standard Requirements.
104	OTHER BYPASS In-Plant Diversion: Sample point for reported diverted flow which bypasses the tertiary algal treatment process prior to disinfection.

2.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

2.2.1 Sampling Point 102 - MERCURY 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 Mercury Monitoring section.

2.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2.2.2 Sampling Point 103 - BLENDING

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Per Occurrence	Continuous	See Blending Flow section.
Time		hours	Per Occurrence	Calculated	Report the total duration of blending within a given day (12:00am - 11:59pm) in which blending occurs. See Blending Flow section.

2.2.2.1 Blending Flow

Flow measurement shall start at the commencement of blending operations and shall be maintained for the duration of the blending operation. Measure flow in daily increments until operation ends and report daily flow on the eDMR. The permittee shall report the volume of wastewater that is diverted around secondary treatment processes whenever in-plant diversion (blending) occurs. See “Blending” requirements in the Standard Requirements section for additional requirements.

2.2.3 Sampling Point 104 - OTHER BYPASS

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Calculated	Calculate and report flow in daily increments on the eDMR. Flow shall be calculated by the difference between plant effluent flow and the sum of the following: blending flow and tertiary effluent flow. See Other Bypass Requirements section.

2.2.3.1 Other Bypass Requirements

The Department has determined that an ‘other bypass’ as defined in s. NR 205.07(1)(u)3, Wis. Adm. Code, may occur at this sewage treatment facility. Furthermore, the Department has previously approved plans in accordance with s. 281.41, Wis. Stats., for the partial bypass around the tertiary treatment process prior to disinfection. A bypass that is defined as a controlled diversion in s. NR 205.07(1)(v), Wis. Adm. Code, is not covered under this sample point. The following requirements shall apply whenever the ‘other bypass’ operations are in effect:

- The ‘other bypass’ may only operate during wet weather or other high flow conditions when peak wastewater flow to the sewage treatment facility exceeds the maximum design and operating capacity of the tertiary treatment facilities and when necessary to avoid severe property damage to the sewage treatment facility as described in s. NR 205.07(1)(u)3.a, Wis. Adm. Code. The ‘other bypass’ may only divert flow around the tertiary treatment process described under the In-Plant Diversion OTHER BYPASS Sample Point description above. In no case shall this include flow diversion which would constitute blending, as defined in s. NR 210.03(2e), Wis. Adm. Code, unless otherwise approved in this permit;
- All flow, inclusive of that wastewater treated or not treated by the tertiary treatment process, shall be disinfected, if required by this permit, prior to discharge, and the flows shall be recombined prior to discharge;
- Effluent from the sewage treatment facility shall be monitored to include all wastewater that is discharged from the facility, including those wastewaters that are diverted around tertiary treatment process and shall meet the effluent limitations for outfalls included in this permit;
- Bypassing under this section and the circumstances that lead to the ‘other bypass’ shall be reported to the Department on the permittee’s Discharge Monitoring Report (DMR), and shall include the duration, and volume of wastewater routed around the tertiary treatment process. Duration shall be reported daily by providing either the volume of wastewater routed or zero to indicate no bypass occurred.

3 Surface Water Requirements

3.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
001	EFFLUENT: 24-hr flow proportional effluent samples shall be collected after tertiary algal treatment for composite samples and at the bottom of the aeration steps for grab samples, prior to discharge to the South Branch of the Rock River. Sampling shall occur during all blending and other bypass events.
601	In-stream Sampling Point 601: representative water samples shall be collected from the South Branch Rock River. Sample point 601 is located downstream of the Waupun WWTP Outfall, 43.64015, -88.70730. Sample point 601 correlates with the sample locations described in the approved AM Plan No. WQT-2024-0026 (November 2024).
603	In-stream Sampling Point 603: representative water samples shall be collected from South Branch Rock River. Sample point 603 is located at upstream of the Waupun WWTP Outfall, at 43.6457, -88.71993. Sample point 603 correlates with the sample locations described in the approved AM Plan No. WQT-2024-0026 (November 2024).

3.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

3.2.1 Sampling Point (Outfall) 001 – EFFLUENT

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total	Weekly Avg	14 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective November through April.
BOD ₅ , Total	Monthly Avg	14 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective November through April.
BOD ₅ , Total	Weekly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective May through August, and October.
BOD ₅ , Total	Monthly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective May through August, and October.
BOD ₅ , Total	Weekly Avg	7.9 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective September.
BOD ₅ , Total	Monthly Avg	7.9 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective September.
BOD ₅ , Total	Weekly Avg	250 lbs/day	5/Week	Calculated	Limit effective November through April.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
BOD ₅ , Total	Weekly Avg	178 lbs/day	5/Week	Calculated	Limit effective May through August, and October.
BOD ₅ , Total	Weekly Avg	122 lbs/day	5/Week	Calculated	Limit effective September.
Suspended Solids, Total	Weekly Avg	14 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective November through April.
Suspended Solids, Total	Monthly Avg	14 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective November through April.
Suspended Solids, Total	Weekly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective May through October.
Suspended Solids, Total	Monthly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective May through October.
Suspended Solids, Total	Weekly Avg	413 lbs/day	5/Week	Calculated	Limit effective January, March and December.
Suspended Solids, Total	Monthly Avg	293 lbs/day	5/Week	Calculated	Limit effective January, March and December.
Suspended Solids, Total	Weekly Avg	460 lbs/day	5/Week	Calculated	Limit effective February.
Suspended Solids, Total	Monthly Avg	326 lbs/day	5/Week	Calculated	Limit effective February.
Suspended Solids, Total	Weekly Avg	366 lbs/day	5/Week	Calculated	Limit effective April.
Suspended Solids, Total	Monthly Avg	259 lbs/day	5/Week	Calculated	Limit effective April.
Suspended Solids, Total	Weekly Avg	330 lbs/day	5/Week	Calculated	Limit effective May.
Suspended Solids, Total	Monthly Avg	234 lbs/day	5/Week	Calculated	Limit effective May.
Suspended Solids, Total	Weekly Avg	295 lbs/day	5/Week	Calculated	Limit effective June.
Suspended Solids, Total	Monthly Avg	209 lbs/day	5/Week	Calculated	Limit effective June.
Suspended Solids, Total	Weekly Avg	201 lbs/day	5/Week	Calculated	Limit effective July.
Suspended Solids, Total	Monthly Avg	143 lbs/day	5/Week	Calculated	Limit effective July.
Suspended Solids, Total	Weekly Avg	177 lbs/day	5/Week	Calculated	Limit effective August.
Suspended Solids, Total	Monthly Avg	126 lbs/day	5/Week	Calculated	Limit effective August.
Suspended Solids, Total	Weekly Avg	236 lbs/day	5/Week	Calculated	Limit effective September.
Suspended Solids, Total	Monthly Avg	167 lbs/day	5/Week	Calculated	Limit effective September.
Suspended Solids, Total	Weekly Avg	271 lbs/day	5/Week	Calculated	Limit effective October.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Suspended Solids, Total	Monthly Avg	192 lbs/day	5/Week	Calculated	Limit effective October.
Suspended Solids, Total	Weekly Avg	342 lbs/day	5/Week	Calculated	Limit effective November.
Suspended Solids, Total	Monthly Avg	243 lbs/day	5/Week	Calculated	Limit effective November.
Nitrogen, Ammonia (NH ₃ -N) Total	Daily Max	9.8 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective year-round.
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	9.8 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective November through April.
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	13 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective May.
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	5.9 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective June.
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	3.8 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective July.
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	3.7 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective August.
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	5.0 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective September.
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	14 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective October.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	11 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective December through February.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	9.8 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective March and April.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	9.1 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective May.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	4.5 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective June.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	2.9 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective July.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	2.4 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective August.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	3.1 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective September.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	8.7 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective October.
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	12 mg/L	5/Week	24-Hr Flow Prop Comp	Limit effective November.
Chlorine, Total Residual	Daily Max	22 µg/L	Daily	Grab	Limit effective May through September.
Chlorine, Total Residual	Weekly Avg	8.6 µg/L	Daily	Grab	Limit effective May through September.
Chlorine, Total Residual	Monthly Avg	8.6 µg/L	Daily	Grab	Limit effective May through September.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	Limit effective May through September.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit effective May through September. See 'E. coli Percent Limit' section. Enter the result on the DMR on the last day of the month.
pH Field	Daily Min	6.0 su	Daily	Grab	
pH Field	Daily Max	8.1 su	Daily	Grab	
Dissolved Oxygen	Daily Min	7.0 mg/L	Daily	Grab	Limit effective September through June.
Dissolved Oxygen	Daily Min	8.0 mg/L	Daily	Grab	Limit effective July.
Dissolved Oxygen	Daily Min	8.5 mg/L	Daily	Grab	Limit effective August.
Phosphorus, Total	Monthly Avg	1.0 mg/L	5/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	6-Month Avg	0.6 mg/L	5/Week	24-Hr Flow Prop Comp	This is an Adaptive Management interim limit that will go into effect May 1, 2025. An interim limit of 0.5 mg/L may be effective during future permit terms. See schedules and effluent requirements.
Phosphorus, Total		lbs/day	5/Week	Calculated	Calculate the daily mass discharge of phosphorus in lbs/day on the same days phosphorus sampling occurs.
Chloride	Weekly Avg	495 mg/L	4/Month	24-Hr Flow Prop Comp	This is an interim limit effective through June 30, 2028. See 'Chloride WQBELs Compliance' in the schedules section.
Chloride	Weekly Avg	472 mg/L	4/Month	24-Hr Flow Prop Comp	Limit effective beginning July 1, 2028. See 'Chloride WQBELs Compliance' in the schedules section.
Chloride	Monthly Avg	472 mg/L	4/Month	24-Hr Flow Prop Comp	Limit effective beginning July 1, 2028. See 'Chloride WQBELs Compliance' in the schedules section.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Chloride	Weekly Avg	7,420 lbs/day	4/Month	Calculated	This is an interim limit effective through June 30, 2028. See 'Chloride QBELs Compliance' in the schedules section.
Chloride	Weekly Avg - Variable	lbs/day	4/Month	Calculated	Limits effective July 1, 2028. Report the chloride mass result in the Chloride Weekly Average Mass column on the DMR. Compare to the Variable Chloride Mass Limitation table below to determine compliance. See 'Chloride QBELs Compliance' in the schedules section.
Chloride, Variable Limit		lbs/day	4/Month	Calculated	Limits effective July 1, 2028. Look up the variable chloride mass limit from the 'Variable Chloride Mass Limitation' table below and report the variable limit in the Chloride Variable Limit column on the DMR. See 'Chloride QBELs Compliance' in the schedules section.
PFOS		ng/L	1/ 2 Months	Grab	Monitoring only. See 'PFOS/PFOA Minimization Plan Determination of Need' in the schedules section.
PFOA		ng/L	1/ 2 Months	Grab	Monitoring only. See 'PFOS/PFOA Minimization Plan Determination of Need' in the schedules section.
Mercury, Total Recoverable		ng/L	Quarterly	Grab	See the 'Mercury Monitoring' section.
Temperature Maximum		deg F	3/Week	Continuous	Monitoring during calendar year 2025. See the 'Effluent Temperature Monitoring' section.
Acute WET		TU _a	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the 'Whole Effluent Toxicity (WET) Testing' section for testing dates and WET requirements.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Chronic WET		TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the 'Whole Effluent Toxicity (WET) Testing' section for testing dates and WET requirements.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	Monitoring Only
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	Monitoring Only
Nitrogen, Total		mg/L	Quarterly	Calculated	Monitoring Only - Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.

3.2.1.1 Annual Average Design Flow

The annual average design flow of the permittee’s wastewater treatment facility is 2.14 million gallons per day (MGD).

3.2.1.2 TSS Limitation(s)

The Rock River TMDL for Total Phosphorus (TP) and Total Suspended Solids (TSS) was approved by the Environmental Protection Agency (EPA) September 2011. The TMDL derived TSS limits are expressed as weekly average and monthly average effluent limits. The approved TSS TMDL limits for this permittee are included in the following table:

Total Suspended Solids Effluent Limitations

Month	Monthly Average TSS Effluent Limit (lbs/day)	Weekly Average TSS Effluent Limit (lbs/day)
Jan	293	413
Feb	326	460
March	293	413
April	259	366
May	234	330
June	209	295
July	143	201
Aug	126	177
Sept	167	236
Oct	192	271
Nov	243	342
Dec	293	413

3.2.1.1 Total Phosphorus Interim Limit, Averaging Periods and Compliance Determination

The adaptive management total phosphorus interim limit of 0.6 mg/L goes into effect May 1, 2025 beginning the averaging period from May 1, 2025 through October 31, 2025. The averaging periods are May through October and November through April. Compliance with the 6-month average limit is evaluated at the end of each 6-month period on April 30th and October 31st annually.

3.2.1.2 Phosphorus Limitation(s) and Adaptive Management Requirements

Permittee Waupun has requested and the Department has approved a plan to implement a watershed adaptive management approach under s. NR 217.18, Wis. Adm. Code and s. 283.13(7) Wis. Stats. as a means for the waterbodies listed in the plan to attain the applicable phosphorus water quality standard in s. NR 102.06, Wis. Adm. Code. The phosphorus limitations and conditions in this permit reflect the approved adaptive management plan WQT-2024-0026 (November 2024). Failure to implement terms and conditions of this section is a violation of this permit. The permittee shall design and implement the actions identified in AM Plan No. WQT-2024-0026 (November 2024) in accordance with the goals and measures identified in the approved plan. If total phosphorus loadings within South Branch of the Rock River action area, as identified in WQT-2024-0026 (November 2024), are not reduced by at least 2,210 pounds total per year by December 31, 2028 the watershed adaptive management option may not be available to the permittee upon permit reissuance.

Pursuant to s. NR 217.18(3)(e)2, Wis. Adm. Code, the adaptive management interim limitation is 0.6 mg/L, expressed as a six-month average. Additionally, a 1.0 mg/L limitation expressed as a monthly average is required. The final calculated water quality based effluent limitations for phosphorus are and the wasteload allocation specified in the Rock River TMDL and are listed in the table below. These limitations may be recalculated based on changes in the in-stream data at the time of permit reissuance. These limits will become effective on January 1, 2038 unless the

adaptive management project is terminated per s. NR 217.18(3)(g), Wis. Adm. Code, in which case the limits may be imposed at an earlier date, or the phosphorus reductions specified in the adaptive management plan have been achieved.

Total Phosphorus Effluent Limitations

Month	Monthly Average Total P Effluent Limit (lbs/day)
Jan	1.18
Feb	1.57
March	1.47
April	1.51
May	1.44
June	1.42
July	1.24
Aug	1.01
Sept	1.02
Oct	1.03
Nov	1.10
Dec	1.09

3.2.1.3 Adaptive Management Reopener Clause

Per s. NR 217.18(3)(g), Wis. Adm. Code, the Department may terminate the adaptive management option for a permittee through permit modification or at permit reissuance and require compliance with a phosphorus effluent limitation calculated under s. NR 217.13, Wis. Adm. Code, or a US EPA approved TMDL based on any of the following reasons:

1. Failure to implement the adaptive management actions in accordance with the approved adaptive management plan and compliance schedule established in the permit.
2. New information becomes available that changes the Department's determinations made under s. NR 217.18(2), Wis. Adm. Code.
3. Circumstances beyond the permittee's control have made compliance with the applicable phosphorus criterion in s. NR 102.06, Wis. Adm. Code, pursuant to the plan's goals and measures infeasible.
4. A determination by the Department that sufficient reductions have not been achieved to timely reduce the amount of total phosphorus to meet the criteria in s. NR 102.06, Wis. Adm. Code.

3.2.1.4 Adaptive Management Requirements - Optimization

The permittee shall continue to optimize performance to control phosphorus discharges in accordance with s. NR 217.18(3)(c), Wis Adm. Code.

3.2.1.5 *E. coli* Percent Limit

No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 #/100 ml. Bacteria samples may be collected more frequently than required. All samples shall be reported on the monthly discharge monitoring reports (DMRs). The following calculation should be used to calculate percent exceedances.

$$\frac{\text{\# of Samples greater than 410 \#/100}}{\text{Total \# of samples}} \times 100 = \% \text{ Exceedance}$$

3.2.1.6 Alternative Wet Weather Chloride Mass Limitation

The final effluent limitations for Chloride become effective on July 1, 2028 as specified in the Schedules Section. Monitoring 4/Month and calculation of mass is required upon permit reissuance for Chloride. The permittee shall calculate the chloride mass in lbs/day on the same days chloride sampling occurs using the Daily Mass Discharge formula in the Standard Requirements Section.

Alternative wet and dry weather weekly average chloride mass limitations become effective July 1, 2028. Variable chloride limits are reported on the eDMR. Per s. NR 106.07(9), Wis. Adm. Code, wet weather mass limitations apply only when the permittee demonstrates to the satisfaction of the department that the discharge exceedance is caused by and occurs during a wet weather event. A wet weather event occurs during and immediately following periods of precipitation or snowmelt, including but not limited to rain, sleet, snow, hail or melting snow, during which water from the precipitation, snowmelt or elevated groundwater enters the sewerage system through infiltration or inflow, or both. The permittee shall provide documentation to demonstrate these requirements were met to allow for alternative wet weather limitations in the comments field of the eDMR.

Variable Chloride Mass Limitation Effective July 1, 2028

Parameter	Weekly Average Wet Weather	Weekly Average Dry Weather
Chloride	22,500 lbs/day	7,290 lbs/day

3.2.1.7 PFOS/PFOA Sampling and Reporting Requirements

For grab samples, as defined per s. NR 218.04(10), Wis. Adm. Code, a single sample at a location as defined by the sample point description shall be taken during the time of the day most representative to capture all potential discharges. If extra equipment besides the sample bottle is used to collect the sample, it is recommended that a one-time equipment blank is collected with the first sample. An equipment blank would be collected by passing laboratory-verified PFAS-free water over or through field sampling equipment before the collection of a grab sample to evaluate potential contamination from the equipment used during sample.

If any equipment blanks are performed, these results shall be reported in the comments section of the eDMR and shall also be documented in the reports submitted as part of the PFOS/PFOA Minimization Plan Determination of Need schedule of the permit.

3.2.1.8 PFOS/PFOA Minimization Plan Determination of Need

The permittee shall monitor PFOS and PFOA as specified in the table above and report on the effluent concentrations including trends in monthly and annual average PFOS and PFOA concentrations as specified in the PFOS/PFOA Minimization Plan Determination of Need Schedule.

If, after reviewing the data, the Department determines that a minimization plan for PFOS and PFOA is necessary based on the procedures in s. NR 106.98(4), Wis. Adm. Code, the Department will notify the permittee in writing that a PFOS and PFOA minimization plan that satisfies the requirements in s. NR 106.99, Wis. Adm. Code, is required. The permittee shall submit an initial plan for Department approval no later than 90 days after written notification was sent from the Department in accordance with s. NR 106.985(2)(a), Wis. Adm. Code. Pursuant to s. NR 106.985(2)(b), Wis. Adm. Code, as soon as possible after Department approval of the PFOS and PFOA minimization plan, the Department will modify or revoke and reissue the permit in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to include the PFOS and PFOA minimization plan and other related terms and condition.

If, however, the Department determines that a PFOS and PFOA minimization plan is unnecessary based on the procedures in s. NR 106.98(4), Wis. Adm. Code, the Department shall notify the permittee that no further action is required. Per s. NR 106.98(3)(a), Wis. Adm. Code, the Department may reduce monitoring frequency to once every 3 months (quarterly) on a case-by-case basis, but only after at least 12 representative results have been generated. If the permittee requests a reduction in monitoring and the Department agrees a reduction would be appropriate, the permit may be modified in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to incorporate this change.

3.2.1.9 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wis. Adm. Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3.2.1.10 Effluent Temperature Monitoring

For monitoring temperature continuously, collect measurements in accordance with s. NR 218.04(13), Wis. Adm. Code. This means that discrete measurements shall be recorded at intervals of not more than 15 minutes during the 24-hour period. Report the maximum temperature measured during the day on the DMR.

3.2.1.11 Whole Effluent Toxicity (WET) Testing

Primary Control Water: South Branch Rock River upstream/out of the influence of the mixing zone and any other known discharge

Instream Waste Concentration (IWC): 83%

Acute Mixing Zone Concentration: N/A

Dilution series: At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected by the permittee.
- **Chronic:** 100, 75, 50, 25, 12.5% and any additional selected by the permittee.

WET Testing Frequency:

Acute tests are required during the following quarters:

- **Acute:** 2nd Quarter (April – June) 2024
1st Quarter (January – March) 2025
4th Quarter (October – December) 2026
3rd Quarter (July – September) 2027
2nd Quarter (April – June) 2028

Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in 2nd Quarter (July – September) 2029.

Chronic tests are required during the following quarters:

- **Chronic:** 2nd Quarter (April – June) 2024
1st Quarter (January – March) 2025
4th Quarter (October – December) 2026
3rd Quarter (July – September) 2027
2nd Quarter (April – June) 2028

Chronic WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in 2nd Quarter (April - June) 2029.

Testing: WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

Reporting: The permittee shall report test results on the Discharge Monitoring Report form, and also complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*"), for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically by the required deadline.

Determination of Positive Results: An acute toxicity test shall be considered positive if the Toxic Unit - Acute (TU_a) is greater than 1.0 for either species. The TU_a shall be calculated as follows: $TU_a = 100 \div LC_{50}$. A chronic toxicity test shall be considered positive if the Toxic Unit - Chronic (TU_c) is greater than 1.2 for either species. The TU_c shall be calculated as follows: $TU_c = 100 \div IC_{25}$.

Additional Testing Requirements: Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The 90-day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

3.2.2 Sampling Point (Outfall) 601 – 601- South Branch Rock River - Downstream and 603 - South Branch Rock River – Upstream

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow River		cfs	Monthly	Measure	Provide an estimate of river flow for each day that in-stream phosphorus monitoring is performed May 1 through October 31 annually.
Flow River		cfs	Per Occurrence	Measure	Voluntary river flow estimates for each day that in-stream phosphorus monitoring is performed November 1 through April 30 annually.
Phosphorus, Total		mg/L	Monthly	Grab	Collect samples monthly May 1 through October 31 annually. See permit sections for sampling and reporting requirements.
Phosphorus, Total		mg/L	Per Occurrence	Grab	Voluntary monitoring November 1 through April 30 annually. See permit sections for

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					sampling and reporting requirements.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate and report total monthly phosphorus loads for the months of May through October annually. See permit section for calculation of total monthly loads.
Phosphorus, Total		lbs/month	Per Occurrence	Calculated	Calculated total phosphorus loads may also be reported for the months of November through April, as data is available. See Permit section for calculation of total monthly loads.

3.2.2.1 Surface Water Sampling for Total Phosphorus

Surface water sampling shall be performed in accordance with Adaptive Management Plan No. WQT-2024-0026 (November 2024). When sampling surface waters for total phosphorus, sample collection and handling protocol as specified in Chapter 4 of the “Guidance for Implementing Wisconsin’s Phosphorus Water Quality Standards for Point Source Discharges” shall be followed. (Available at dnr.wi.gov; search for “phosphorus guidance”).

When testing for total phosphorus in surface water samples, use the test procedures specified by Standard Requirements permit section. Analytical methods used shall enable the laboratory to quantitate total phosphorus at levels below the water quality criterion of 0.075 mg/L. If the required level of quantitation cannot be met by any of the methods available in ch. NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected.

When surface water samples are collected by Water Action Volunteers, the “The Volunteer Monitor's Guide to Quality Assurance Project Plans” shall be implemented. (Available at www.epa.gov; search for “The Volunteer Monitor's Guide to Quality Assurance Project Plans”).

3.2.2.2 Voluntary Surface Water Sampling for Total Phosphorus

River flow and total phosphorus monitoring may voluntarily be performed from November 1 through April 30 annually. When voluntary in-stream monitoring is completed monitoring results shall be reported on the monthly eDMR. Report river flow measurements for each day phosphorus monitoring is performed.

3.2.2.3 Reporting Surface Water Sampling Results for Total Phosphorus and Flow

The permittee shall report total phosphorus monitoring and river flow measurements results for surface waters samples collected at both Sampling Point 601 and 603 along with the river flow measurements at Sampling Point 601 and 603 on monthly eDMRs. The monitoring results shall be submitted by the date specified on the eDMR.

In addition, all total phosphorus test results for surface water samples collected at Sampling Point 601, 603 and all other surface water sampling points identified in Adaptive Management Plan No. WQT-2024-0026 (November 2024) shall be reported to the Department using the Department's Laboratory Data Entry System (LDES). Test results for the year shall be submitted by January 21st of the following year. (Available at dnr.wi.gov; search "Laboratory Data Entry System").

3.2.2.4 Total Monthly Total Phosphorus (TP) Loads

Use the following methods to calculate the total monthly phosphorus loading in the receiving stream expressed as a mass in lbs/month:

- 1) Convert mg/L to lbs/day using the following equation:

$$\text{Daily TP loading (lbs/day)} = \text{TP concentration (mg/L)} \times [\text{Daily Flow (cfs)} \div 1.55] \times 8.34$$

- 2) On a monthly basis, average the reported daily TP loading, then multiply the average by the number of days during the month and report the product as "Phosphorus, Total" (in lbs/month) for the last day of the month on the eDMR.

$$\text{Phosphorus, Total (lbs/month)} = \text{Average of daily TP loading (lbs/day)} \times \text{Number of days/month}$$

4 Land Application Requirements

4.1 Sampling Point(s)

The discharge(s) shall be limited to land application of the waste type(s) designated for the listed sampling point(s) on Department approved land spreading sites or by hauling to another facility.

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
003	Class B, Liquid, Anaerobically digested biosolids. Representative sludge samples shall be collected from the secondary digester discharge pump. This outfall will only be used if the permittee is unable to produce Class B cake sludge from Outfall 004. Outfall 003 is inactive. Contact DNR representative to activate this outfall and verify sampling requirements prior to land application or disposal. (Note: Land application from this outfall will require monitoring for Lists 1, 2, 3 and 4, and potentially Radium-226 depending upon duration of outfall use.).
004	Class B, Cake, Anaerobically digested dewatered biosolids. Representative sludge samples shall be collected after the belt press and monitored annually for Lists 1, 2, 3 and 4 and Radium-226, and once per permit term for PCBs.
005	<p>Class A, Dried Cake algae sludge. Sample point for dried algae treatment process monitoring. The temperature of algae sludge in the dryer shall be monitored continuously. Total solids of the algae sludge shall be monitored during sludge dryer operation per the approved Sludge Management Plan. Pathogen testing is required immediately after the sludge treatment process and shall satisfy the Class A Sludge: Fecal Coliform Density Requirement. Pathogen testing is required immediately after the sludge treatment process and shall satisfy the Class A Sludge: Fecal Coliform Density Requirement. Pathogen testing shall be performed on no less than 7 discrete samples to be collected and reported individually throughout the calendar year, not as a geometric mean. Each pathogen control sample shall meet the pathogen limit to prove effective pathogen treatment. This sample point is intended for meeting pathogen density requirements of the Class A dryer. If this sample point is used as an outfall for distribution in place of Outfall 007, Lists 1 and 3 requirements shall be met. If used additionally for land application, List 2 requirements shall be monitored. Use of this sample point as an outfall shall be clearly communicated in the sludge management plan.</p> <p>Notify the Department 30 days prior to when the permittee is ready to begin initial distribution of Class A Dried Cake algae sludge. In this notification shall notify the department's biosolids coordinator and compliance engineer for the facility. Also provided in the notification, the permittee shall collect and provide continuous temperature monitoring data, percent solids and pathogen data during the course of a typical startup, operation, and shutdown of the heating drying equipment. During the inspection, the permittee will have heat drying equipment operational instructions available for review.</p>

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
007	<p>Class A, Dried algae cake for distribution. When dried algae is stored prior to distribution, this outfall shall be used for distribution of dried algae (cake). Representative samples shall be monitored for Lists 1, 3 and 4. Nutrient monitoring (List 2) is optional and recommended to be monitored no less than annually. If material is land applied from this outfall, monitoring shall include List 2. Pathogen control monitoring is required if the dried algae sludge is not bagged and sealed immediately upon generating. Pathogen testing is required immediately after the sludge treatment process and shall satisfy the Class A Sludge: Fecal Coliform Density Requirement. Pathogen testing shall be performed on no less than 7 discrete samples to be collected and reported individually throughout the calendar year, not as a geometric mean. Each pathogen control sample shall meet the pathogen limit to prove effective pathogen treatment. Vector attraction reduction requirements shall be satisfied by Drying Without Primary Solids and shall be performed at the same time Fecal Coliforms are monitored. This outfall is inactive for distribution. This outfall shall be utilized when dried sludge (dried algae) is stored after the algae dryer and when Sample Point 005 is used only for pathogen monitoring. If storage is not used prior to bagging, distribution or land application, this outfall can remain inactive. Permittee shall determine need for this outfall, communicate to DNR representative the permittee's use and clearly communicate the use in the sludge management plan.</p> <p>Notify the Department 30 days prior to when the permittee is ready to begin initial distribution of Class A Dried Cake algae sludge. In this notification shall notify the department's biosolids coordinator and compliance engineer for the facility. Also provided in the notification, the permittee shall collect and provide continuous temperature monitoring data, percent solids and pathogen data during the course of a typical startup, operation, and shutdown of the heating drying equipment. During the inspection, the permittee will have heat drying equipment operational instructions available for review.</p>
008	<p>Class B, Liquid, Thickened algae for land application. Representative samples shall be collected from dewatered algae storage. Monitoring will include Lists 1, 2, 3 and 4 prior to land application. This outfall will only be used if the permittee is unable to produce Class A dried algae cake at Outfalls 005 and 007. This outfall is inactive for land application. Contact DNR representative to activate this outfall and verify sampling requirements prior to Class B land application.</p>

4.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

4.2.1 Sampling Point (Outfall) 003 - CLASS B LIQUID SLUDGE; 004- CLASS B CAKE SLUDGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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 (NH ₄ -N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
Radium 226 Dry Wt		pCi/g	Annual	Composite	Monitoring required at Outfall 004 only.
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Monitor Outfall 004 in calendar year 2025.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Monitor Outfall 004 in calendar year 2025.
PFOA + PFOS		µg/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.

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	Outfall 004 – Annual Outfall 003 – Annual if Outfall Activated for Land Application
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	Outfall 004 – Annual Outfall 003 – Annual if Outfall Activated for Land Application

4.2.1.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.1.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.1.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.1.4 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

$$[(\text{Pollutant concentration (mg/kg)} \times \text{dry tons applied/ac}) \div 500] + \text{previous loading (lbs/acre)} = \text{cumulative lbs pollutant per acre}$$

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.1.5 Sludge Analysis for PCBs – Outfall 004

The permittee shall analyze the sludge for Total PCBs one time during **2025**. The results shall be reported as "PCB Total Dry Wt". Either congener-specific analysis or Aroclor analysis shall be used to determine the PCB concentration. The permittee may determine whether Aroclor or congener specific analysis is performed. Analyses shall be performed in accordance with Table EM in s. NR 219.04, Wis. Adm. Code and the conditions specified in Standard Requirements of this permit. PCB results shall be submitted by January 31, following the specified year of analysis.

4.2.1.6 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

PERFLUOROALKYLCARBOXYLIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluroroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSAs)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid
PFHpS	Perfluoroheptane sulfonic acid
PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2 FTSA	4:2 fluorotelomersulfonic acid
6:2 FTSA	6:2 fluorotelomersulfonic acid
8:2 FTSA	8:2 fluorotelomersulfonic acid
PERFLUOROOCETANESULFONAMIDES (FOSAs)	
PFOSA	Perflurorooctane sulfonamide
N-MeFOSA	N-Methyl perfluorooctane sulfonamide
N-EtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCETANESULFONAMIDOACETIC Acids	
N-MeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
N-EtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCETANESULFONAMIDOETHANOLS (FOSEs)	
N-MeFOSE	N-Methyl perfluorooctane sulfonamidoethanol
N-EtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
DONA	4,8-dioxa-3H-perfluorononanoic acid

CHLORO-PERFLUOROALKYLSULFONATE	
F-53B Major	9-chloroehexadecafluoro-3-oxanone-1-sulfonic acid
F-53B Minor	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.1.7 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. If the EPA Office of Water publishes a 1600 series isotope dilution method for the analysis of PFAS in solids, the department recommends the use of the EPA method. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.1.8 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the “Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”.

4.2.1.9 Lists 1, 2, 3, and 4

List 1 TOTAL SOLIDS AND METALS
See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters
Solids, Total (percent)
Arsenic, mg/kg (dry weight)
Cadmium, mg/kg (dry weight)
Copper, mg/kg (dry weight)
Lead, mg/kg (dry weight)
Mercury, mg/kg (dry weight)

<p>List 1 TOTAL SOLIDS AND METALS</p> <p>See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters</p>
Molybdenum, mg/kg (dry weight)
Nickel, mg/kg (dry weight)
Selenium, mg/kg (dry weight)
Zinc, mg/kg (dry weight)
Radium-226, pCi/g (dry weight)

<p>List 2 NUTRIENTS</p> <p>See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters</p>
Solids, Total (percent)
Nitrogen Total Kjeldahl (percent)
Nitrogen Ammonium (NH ₄ -N) Total (percent)
Phosphorus Total as P (percent)
Phosphorus, Water Extractable (as percent of Total P)
Potassium Total Recoverable (percent)

<p>List 3 PATHOGEN CONTROL FOR CLASS B SLUDGE</p> <p>The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.</p> <p>The following requirements shall be met prior to land application of sludge.</p>		
Parameter	Unit	Limit
Fecal Coliform *	MPN/gTS or CFU/gTS	2,000,000
OR, ONE OF THE FOLLOWING PROCESS OPTIONS		
Aerobic Digestion		Air Drying
Anaerobic Digestion		Composting
Alkaline Stabilization		PSRP Equivalent Process
* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.		

<p>List 4 VECTOR ATTRACTION REDUCTION</p> <p>The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.</p> <p>One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.</p>		
Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O ₂ /hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge

List 4
VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.1.10 Daily Logs

Daily Land Application Log: The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. See section 4.2.5.1 for the minimum records that must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements.

Daily Log of Hauled Sludge: The permittee shall maintain a daily log of hauled sludge. See section 4.2.5.2 for the minimum records that must be kept. The log book records shall form the basis for hauled sludge reports submitted on Form 3400-52 “Other Methods of Disposal or Distribution Report” following each year that sludge is hauled.

4.2.2 Sampling Point (Outfall) 005 - CLASS A DRIED ALGAE SAMPLE PT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Temperature	Daily Min	80 deg C	Continuous	Continuous	See section 4.2.2.3 for monitoring and reporting requirements.
Solids, Total	Daily Min	90 Percent	Per Batch	Grab	See section 4.2.2.3 for monitoring and reporting requirements.
Fecal Coliform	Daily Max	1,000 MPN/g TS	See Permit Note	Grab	Monitor immediately after the treatment process. See section 4.2.2.4 for Fecal Coliform Density Requirement.
PFOA + PFOS		µg/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

4.2.2.1 Outfall 005 and Outfall 007

Sample Point 005 is provided for dried algae treatment process monitoring and demonstrating that pathogen density requirements have been met immediately after the Class A treatment process (Heat Drying) is complete. Outfall 007 is provided for pathogen retesting if the dried algae is stored such as in an algae hopper or other algae storage unit. Flexibility in this permit allows the permittee to utilize either Outfall 005 or Outfall 007 for monitoring and reporting metals (List 1) and meeting vector attraction reduction requirements (List 4). If land applying from either Outfall 005 or Outfall 007, nutrients (List 2) shall be monitored and pathogen control (List 3) requirements shall be met prior to distribution, land application or disposal. The details for meeting the monitoring requirements of ch. NR 204, Wis. Adm. Code, and this permit shall be described in the sludge management plan.

4.2.2.2 Activating Sample Point/Outfall 005 – Class A Dried Algae Sludge or Sample Point 007 – Class A Dried Algae Sludge from Storage

Prior to distribution or land application of Class A Heat Dried Algae sludge from Sample Point/Outfall 005 or Outfall 007 the permittee shall contact the department to arrange for the statewide biosolids coordinator to inspect the treatment equipment and review process related data. Prior to distribution of Class A sludge, the department shall inspect the Class A Heat Dried Algae sludge treatment (Algae Double Drum Dryer) process, material handling equipment and storage processes. The department shall also review the associated operational and monitoring data, sample collection and monitoring procedures, and record keeping and reporting procedures. Upon a favorable inspection, the permittee will then be authorized to distribute or land apply Class A Heat Dried Algae sludge from the requested outfall.

4.2.2.3 Sampling, Monitoring and Reporting –Temperature and Solids Content (Outfall 005)

The temperature of algae sludge in the dryer shall be monitored continuously. Report the minimum temperature recorded on the eDMR daily.

Total solids percent shall be monitored and collected per the approved Sludge Management Plan. Monitoring is required at each dryer startup and ‘Per Batch’. The sampling frequency ‘Per Batch’ is as defined in the Sludge Management Plan. For each ‘Batch’ report the minimum total solids content recorded on the eDMR.

4.2.2.4 Fecal Coliform Density Requirements

Pathogen testing shall be performed on individual samples and shall be collected and reported on no less than 7 discrete samples taken throughout the calendar year. Monitoring for fecal coliform density shall be reported as discrete sample results and shall not be reported as a geometric mean. Each pathogen control sample shall meet the pathogen limit to prove effective pathogen treatment. See the standard requirements section of this permit. Samples shall be collected as specified in an approved Sludge Management Plan.

4.2.2.5 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

PERFLUOROALKYLCARBOXYLIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluroroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSAs)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid
PFHpS	Perfluoroheptane sulfonic acid
PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2 FTSA	4:2 fluorotelomersulfonic acid
6:2 FTSA	6:2 fluorotelomersulfonic acid
8:2 FTSA	8:2 fluorotelomersulfonic acid
PERFLUOROCTANCESULFONAMIDES (FOSAs)	
PFOSA	Perflurorooctane sulfonamide
N-MeFOSA	N-Methyl perfluorooctane sulfonamide
N-EtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROCTANCESULFONAMIDOACETIC Acids	
N-MeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
N-EtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROCTANCESULFONAMIDOETHANOLS (FOSEs)	
N-MeFOSE	N-Methyl perfluorooctane sulfonamideoethanol
N-EtFOSE	N-Ethyl perfluorooctane sulfonamideoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
DONA	4,8-dioxa-3H-perfluorononanoic acid
CHLORO-PERFLUOROALKYLSULFONATE	
F-53B Major	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid
F-53B Minor	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.2.6 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. If the EPA Office of Water publishes a 1600 series isotope dilution method for the analysis of PFAS in solids, the department recommends the use of the EPA method. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.2.7 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the “Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”.

4.2.3 Sampling Point (Outfall) 005 - CLASS A DRIED ALGAE SAMPLE PT; 007 - CLASS A DRIED ALGAE FROM STORAGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Annual	Composite	
Fecal Coliform	Daily Max	1,000 MPN/g TS	Annual	Multiple Grab	Outfall 005 - Monitor if stored prior to bagging or distribution. See section 4.2.2.4 above for Fecal Coliform Density Requirement.
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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	
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	Monitoring is optional for these outfalls unless sludge from one or both outfalls is land applied.
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Annual	Composite	Monitoring is optional for these outfalls unless sludge from one or both outfalls is land applied.
Phosphorus, Total		Percent	Annual	Composite	Monitoring is optional for these outfalls unless sludge from one or both outfalls is land applied.
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	Monitoring is optional for these outfalls unless sludge from one or both outfalls is land applied.
Potassium, Total Recoverable		Percent	Annual	Composite	Monitoring is optional for these outfalls unless sludge from one or both outfalls is land applied.
PFOA + PFOS		µg/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.

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application or distribution of sludge.	Annual if Dried Algae is Land Applied or Distributed
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application or distribution as specified in List 4.	Annual if Dried Algae is Land Applied or Distributed

4.2.3.1 Vector Attraction Reduction Requirements (Outfall 007)

If dried algae cake sludge from Outfall 007 is land applied, vector attraction reduction requirements shall be satisfied by Drying Without Primary Solids (Total Solids shall be $\geq 70\%$) and shall be performed at the same time Fecal Coliforms are monitored. See the standard requirements section of this permit. Samples shall be collected as specified in an approved management plan.

4.2.3.2 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.3.3 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.3.4 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.3.5 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

$$[(\text{Pollutant concentration (mg/kg)} \times \text{dry tons applied/ac}) \div 500] + \text{previous loading (lbs/acre)} = \text{cumulative lbs pollutant per acre}$$

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.3.6 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

PERFLUOROALKYLCARBOXYLIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluroroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSAs)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid
PFHpS	Perfluoroheptane sulfonic acid
PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2 FTSA	4:2 fluorotelomersulfonic acid
6:2 FTSA	6:2 fluorotelomersulfonic acid
8:2 FTSA	8:2 fluorotelomersulfonic acid
PERFLUOROCTANCESULFONAMIDES (FOSAs)	
PFOSA	Perflurorooctane sulfonamide
N-MeFOSA	N-Methyl perfluorooctane sulfonamide
N-EtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROCTANCESULFONAMIDOACETIC Acids	
N-MeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
N-EtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROCTANCESULFONAMIDOETHANOLS (FOSEs)	
N-MeFOSE	N-Methyl perfluorooctane sulfonamidoethanol
N-EtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
DONA	4,8-dioxa-3H-perfluorononanoic acid

CHLORO-PERFLUOROALKYLSULFONATE	
F-53B Major	9-chloroehexadecafluoro-3-oxanone-1-sulfonic acid
F-53B Minor	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.3.7 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. If the EPA Office of Water publishes a 1600 series isotope dilution method for the analysis of PFAS in solids, the department recommends the use of the EPA method. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.3.8 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the “Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”.

4.2.3.9 Lists 1, 2, 3, and 4

List 1 TOTAL SOLIDS AND METALS
See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters
Solids, Total (percent)
Arsenic, mg/kg (dry weight)
Cadmium, mg/kg (dry weight)
Copper, mg/kg (dry weight)
Lead, mg/kg (dry weight)
Mercury, mg/kg (dry weight)

<p>List 1 TOTAL SOLIDS AND METALS</p> <p>See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters</p>
Molybdenum, mg/kg (dry weight)
Nickel, mg/kg (dry weight)
Selenium, mg/kg (dry weight)
Zinc, mg/kg (dry weight)

<p>List 2 NUTRIENTS</p> <p>See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters</p>
Solids, Total (percent)
Nitrogen Total Kjeldahl (percent)
Nitrogen Ammonium (NH ₄ -N) Total (percent)
Phosphorus Total as P (percent)
Phosphorus, Water Extractable (as percent of Total P)
Potassium Total Recoverable (percent)

<p>List 3 PATHOGEN CONTROL FOR CLASS A SLUDGE</p> <p>The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.</p> <p>The following requirements shall be met prior to land application or distribution of sludge.</p>		
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	
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 discrete sample results and shall not be reported as a geometric mean.		

**List 4
VECTOR ATTRACTION REDUCTION**

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option. One of the following shall be satisfied prior to, or at the time of land application or distribution as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O ₂ /hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.3.10 Daily Logs

Daily Land Application Log: The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. See section 4.2.5.1 for the minimum records that must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements.

Daily Log of Hauled Sludge: The permittee shall maintain a daily log of hauled sludge. See section 4.2.5.2 for the minimum records that must be kept. The log book records shall form the basis for hauled sludge reports submitted on Form 3400-52 “Other Methods of Disposal or Distribution Report” following each year that sludge is hauled.

4.2.4 Sampling Point (Outfall) 008 - CLASS B ALGAE LAND APPLICATION

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

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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 (NH ₄ -N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
PFOA + PFOS		µg/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.

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	Annual During Years Sludge is Land Applied
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	Annual During Years Sludge is Land Applied

4.2.4.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.4.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.4.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.4.4 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

$$[(\text{Pollutant concentration (mg/kg)} \times \text{dry tons applied/ac}) \div 500] + \text{previous loading (lbs/acre)} = \text{cumulative lbs pollutant per acre}$$

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.4.5 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

PERFLUOROALKYLCARBOXYLIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSAs)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid

PFHpS	Perfluoroheptane sulfonic acid
PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2 FTSA	4:2 fluorotelomersulfonic acid
6:2 FTSA	6:2 fluorotelomersulfonic acid
8:2 FTSA	8:2 fluorotelomersulfonic acid
PERFLUOROOCTANCESULFONAMIDES (FOSAs)	
PFOSA	Perflurorooctane sulfonamide
N-MeFOSA	N-Methyl perfluorooctane sulfonamide
N-EtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCTANCESULFONAMIDOACETIC Acids	
N-MeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
N-EtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCTANCESULFONAMIDOETHANOLS (FOSEs)	
N-MeFOSE	N-Methyl perfluorooctane sulfonamideoethanol
N-EtFOSE	N-Ethyl perfluorooctane sulfonamideoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
DONA	4,8-dioxa-3H-perfluorononanoic acid
CHLORO-PERFLUOROALKYLSULFONATE	
F-53B Major	9-chloroehexadecafluoro-3-oxanone-1-sulfonic acid
F-53B Minor	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.4.6 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. If the EPA Office of Water publishes a 1600 series isotope dilution method for the analysis of PFAS in solids, the department recommends the use of the EPA method. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.4.7 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the “Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”.

4.2.4.8 Lists 1, 2, 3, and 4

<p>List 1 TOTAL SOLIDS AND METALS</p> <p>See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters</p>
Solids, Total (percent)
Arsenic, mg/kg (dry weight)
Cadmium, mg/kg (dry weight)
Copper, mg/kg (dry weight)
Lead, mg/kg (dry weight)
Mercury, mg/kg (dry weight)
Molybdenum, mg/kg (dry weight)
Nickel, mg/kg (dry weight)
Selenium, mg/kg (dry weight)
Zinc, mg/kg (dry weight)

<p>List 2 NUTRIENTS</p> <p>See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters</p>
Solids, Total (percent)
Nitrogen Total Kjeldahl (percent)
Nitrogen Ammonium (NH4-N) Total (percent)
Phosphorus Total as P (percent)
Phosphorus, Water Extractable (as percent of Total P)
Potassium Total Recoverable (percent)

List 3

PATHOGEN CONTROL FOR CLASS B SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform *	MPN/gTS or CFU/gTS	2,000,000
OR, ONE OF THE FOLLOWING PROCESS OPTIONS		
Aerobic Digestion		Air Drying
Anaerobic Digestion		Composting
Alkaline Stabilization		PSRP Equivalent Process
* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.		

List 4

VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O ₂ /hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.5 Daily Logs – All Outfalls

4.2.5.1 Daily Land Application Log

Daily Land Application Log		
Discharge Monitoring Requirements		
The permittee shall maintain a daily land application log for biosolids land applied each day when land application or distribution occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application or distribution report requirements.		
Parameters	Units	Sample Frequency
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

* gallons, cubic yards, dry US Tons or dry Metric Tons

4.2.5.2 Daily Log of Hauled Sludge

Daily Log of Hauled Sludge		
The permittee shall maintain a daily log of hauled sludge. The following minimum records must be kept. The log book records shall form the basis for hauled sludge reports submitted on Form 3400-52 "Other Methods of Disposal or Distribution Report" following each year that sludge is hauled.		
Log Book Item	Units	Reporting Frequency
Outfall Number	Number	Per Occurrence
Date Sludge is Hauled	Date	Per Occurrence
Volume of Sludge Hauled	unit */day	Per Occurrence
Mass of Sludge Hauled	unit */day	Per Occurrence
Name of Facility Receiving Sludge	n/a	Per Occurrence
WPDES Permit Number of Receiving Facility (if applicable)	n/a	Per Occurrence

* gallons, cubic yards, dry US Tons or dry Metric Tons

5 Schedules

5.1 Adaptive Management Interim Limit Compliance Update

Required Action	Due Date
<p>Comply with Adaptive Management Interim Limit: The Adaptive Management interim effluent limit of 0.6 mg/L as a six-month average goes into effect. The averaging periods are May through October and November through April. Compliance with the 6-month average limit is evaluated at the end of each 6-month period on April 30 and October 31 annually.</p>	05/01/2025

5.2 Watershed Adaptive Management Option Annual Report Submittals

The permittee shall submit annual reports on the implementation of AM Plan No. WQT-2024-0026 (November 2024) as specified in the 'Phosphorus Limitation(s) and Adaptive Management Requirements' permit section and the following schedule.

Required Action	Due Date
<p>Annual Adaptive Management Report: Submit an annual adaptive management report. The annual adaptive management report shall:</p> <ul style="list-style-type: none"> o Identify those actions from pages 4-3 through 4-5 of the approved adaptive management plan that were completed during the previous calendar year and those actions that are in progress; o Evaluate collected monitoring data; o Document progress in achieving the goals and measures identified in the approved adaptive management plan; o Describe the outreach and education efforts that occurred during the past calendar year; o Identify any corrections or adjustments to the adaptive management plan that are needed to achieve compliance with the phosphorus water quality standards specified in s. NR 102.06, Wis. Adm. Code; o Describe any updates needed to Waupun’s approved phosphorus optimization plan; <p>and</p> <ul style="list-style-type: none"> o Submit results from all sample points outlined in AM plan No. WQT-2024-0026 (November 2024) to the Department using the Department's Laboratory Data Entry System (LDES) 	03/31/2026
<p>Annual Adaptive Management Report #2: Submit an Adaptive Management report with the required information described in this section (see above).</p>	03/31/2027
<p>Final Adaptive Management Report for 1st Permit Term: Submit the final Adaptive Management (AM) report documenting progress made during the first permit term under AM in meeting the watershed phosphorus reduction target of 7,650 lbs/yr, as well as the anticipated future reductions in phosphorus sources and phosphorus effluent concentrations, which shall be measured in accordance with the AM Plan protocols. The report shall summarize AM activities that have been implemented during the current permit term and state which, if any, actions from the approved AM plan No. WQT-2024-0026 (November 2024) were not pursued and why. The report shall include an analysis of trends on both a monthly and six-month average basis for concentrations and mass effluent discharged. Additionally, there shall be an analysis of any improvements to the quality of surface waters in the Adaptive Management Action Area focusing on phosphorus and flow results collected during the permit term. The surface water analysis shall evaluate how the in-stream loadings have</p>	03/31/2028

changed over the permit term in comparison to implemented AM actions.	
Renewal of Adaptive Management Plan for Permit Reissuance: If the permittee intends to seek renewal of AM plan No. WQT-2024-0026 (November 2024) per s. NR 217.18, Wis. Adm. Code, for the reissued permit term, proposed AM goals and actions based on an updated AM plan shall be submitted to the Department for review and approval. The permittee may propose to adjust load reductions required by AM plan No. WQT-2024-0026 (November 2024) either up or down at the beginning of each WPDES permit term to reflect changes in loads associated with point and non-point sources. This schedule may be modified to incorporate any changes in AM goals and actions, removed if the AM program is terminated per the “Adaptive Management Reopener Clause” permit section, or removed if the adaptive management plan has achieved water quality standards as determined by the Department within the AM action area.	06/30/2028
Comply with Adaptive Management Interim Limit: For the second permit term under Adaptive Management the permittee shall comply with an Adaptive Management total phosphorus interim limit no higher than 0.5 mg/L as a 6-month average, in addition to the 1.0 mg/L monthly avg already effective.	04/01/2029
Annual Adaptive Management Report #6: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2029
Annual Adaptive Management Report #7: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2030
Annual Adaptive Management Report #8: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2031
Annual Adaptive Management Report #9: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2032
Final Adaptive Management Report for 2nd Permit Term: Submit the final Adaptive Management (AM) report documenting progress made during the second permit term under AM in meeting the watershed phosphorus reduction target of 11,480 lbs/yr, as well as the anticipated future reductions in phosphorus sources and phosphorus effluent concentrations, which shall be measured in accordance with the AM Plan protocols. The report shall summarize AM activities that have been implemented during the current permit term and state which, if any, actions from the approved AM plan No. WQT-2024-0026 (November 2024) were not pursued and why. The report shall include an analysis of trends on both a monthly and six-month average basis for concentrations and mass effluent discharged. Additionally, there shall be an analysis of any improvements to the quality of surface waters in the Adaptive Management Action Area focusing on phosphorus and flow results collected during the permit term. The surface water analysis shall evaluate how the in-stream loadings have changed over the permit term in comparison to implemented AM actions.	03/31/2033
Renewal of Adaptive Management Plan for Permit Reissuance: If the permittee intends to seek renewal of AM plan No. WQT-2024-026 (November 2024) per s. NR 217.18, Wis. Adm. Code, for the reissued permit term, proposed AM goals and actions based on an updated AM plan shall be submitted to the Department for review and approval. The permittee may propose to adjust load reductions required by AM plan No. WQT-2024-00026 (November 2024) either up or down at the beginning of each WPDES permit term to reflect changes in loads associated with point and non-point sources. This schedule may be modified to incorporate any changes in AM goals and actions, removed if the AM program is terminated per the “Adaptive Management Reopener Clause” permit section, or removed if the adaptive management plan has achieved water quality standards as determined by the Department within the AM action area.	06/30/2033

Annual Adaptive Management Report #11: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2034
Annual Adaptive Management Report #12: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2035
Annual Adaptive Management Report #13: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2036
Annual Adaptive Management Report #14: Submit an Adaptive Management report with the required information described in this section (see above).	03/31/2037
Final Adaptive Management Report: Submit the final Adaptive Management (AM) report documenting progress made throughout the AM project in meeting the watershed phosphorus reduction target of 15,280 lbs/yr, and in stream water quality standards specified in s. NR 102.06, Wis. Adm. Code. The report shall summarize AM activities that have been implemented during the current permit term and state which, if any, actions from the approved AM plan No. WQT-2024-0026 (November 2024) were not pursued and why. The report shall include an analysis of trends on both a monthly and six-month average basis for concentrations and mass effluent discharged. Additionally, there should be an analysis of any improvements to the quality of surface waters in the Adaptive Management Action Area focusing on phosphorus and flow results collected during the permit term. The surface water analysis shall evaluate how the in-stream loadings have changed over the permit term in comparison to implemented AM actions.	03/31/2038
Achieve Water Quality Standards and Adaptive Management Plan Success: All the receiving waters identified within the AM plan WQT-2024-0026 (November 2024) shall comply with water quality standards specified in s. NR 102.06, Wis. Adm. Code. The permittee shall continue to comply with applicable effluent limits (required under s. 217.18(3)(e)3. expressed as a 6-month avg and 1.0 mg/L monthly avg) and continue monitoring surface waters WQT-2024-0026 (November 2024) at a minimum of monthly May through October for total phosphorus.	12/31/2038

5.3 Chloride QBELs Compliance

Required Action	Due Date
<p>Annual Chloride Progress Report: Submit an annual chloride progress report on chloride pollution and waste minimization measures implemented during the previous year with conclusions regarding compliance with final chloride effluent limitations. The annual chloride progress report shall:</p> <p>Identify chloride pollution and waste minimization measures that have been implemented and assess the effectiveness of such measures in making progress towards meeting final chloride effluent limitations.</p> <p>Include an analysis of trends in weekly, monthly and annual average chloride concentrations and total mass discharge of chloride based on chloride sampling and flow data; and</p> <p>Include an analysis of how effluent chloride varies with time and with significant loadings of chloride.</p> <p>The weekly average chloride limitations of 495 mg/L and 7,420 lbs/day in the current permit are effective upon permit reissuance until the effective date of the chloride limitations specified below.</p> <p>The first annual chloride progress report is to be submitted by the Date Due.</p>	01/31/2024
Annual Chloride Progress Report #2: Submit a chloride progress report as specified above with	01/31/2025

conclusions regarding compliance. If the report concludes that final chloride limitations can be met with the permittee's current treatment processes this permit shall be modified to include the final chloride limitations specified below.	
Annual Chloride Progress Report #3: Submit a chloride progress report as specified above with conclusions regarding compliance. If the report concludes that final chloride limitations can be met with the permittee's current treatment processes this permit shall be modified to include the final chloride limitations specified below.	01/31/2026
Annual Chloride Progress Report #4: Submit a chloride progress report as specified above with conclusions regarding compliance. If the report concludes that final chloride limitations can be met with the permittee's current treatment processes this permit shall be modified to include the final chloride limitations specified below.	01/31/2027
Comply With Final Chloride WQBELs: Weekly and monthly average chloride effluent limits of 472 mg/L, and weekly average limits of 7,300 lbs/day and 22,500 lbs/day based on wet weather conditions become effective.	07/01/2028

5.4 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
<p>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.</p> <p>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.</p>	12/31/2024
<p>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.</p> <p>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.</p> <p>The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan.</p> <p>If the Department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for Department approval no later than 90 days after written notification was sent from the Department. The Department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued.</p> <p>If, however, the Department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.</p>	12/31/2025

5.5 Sludge Management Plan

Required Action	Due Date
<p>Sludge Management (SMP) Plan Submittal: Submit a sludge management plan (SMP) to optimize the treatment and disposal of sludge by the Due Date.</p> <p>The SMP shall include a description of the facilities management program for department approval pursuant to s. NR 204.11(1), Wis. Adm. Code. The plan shall include separate sections for each type of sewage sludge including liquid, cake, algae liquid, dried algae, etc. If there will be designated land application sites for each waste type, they should be listed by legal location and department assigned site number.</p> <p>The SMP shall provide standardized information for communication to operators and the department for no less than the following:</p> <ol style="list-style-type: none"> 1) Sample point, influent point and outfall monitoring locations shown on a schematic and with photos; 2) Monitoring requirements at each influent point(s), sampling point(s) and outfall location(s); 3) Sampling protocols for each location and parameters at each location including treatment temperature, moisture content (total solids), fecal concentration as required; 4) Monitoring frequencies at each sample point, influent point and outfall; 5) Analytical methods with appropriate hold times and chain of custody procedures; 6) Multiple operational algae drying durations that include start up, operation and shutdown of treatment facilities that facilitates Waupun's operator need for flexibility. 7) Provide planned moisture content intervals for each option; 8) Provide documentation relating to temperature monitoring data recording, retrieval and printing out the data when requested; 9) Storage, pickup and transportation details associated with all outfalls and influent locations; 10) Dryer start up instructions and details associated with overcoming lack of appropriate temperatures or when exceeding moisture content limits; 11) Provide documentation of a system for collection, storage, disposal/buyer information for cake algae detailing deliveries; and 12) Collection, storage, and disposal processes of dried algae when algae does not meet minimum requirements to meet Class A and EQ requirements. <p>The SMP shall be developed to have inherent flexibility and to allow for frequent updates as processing may change.</p> <p>An extension for submitting the SMP may be requested to allow for startup and compliance of the algae dryer.</p>	<p>12/31/2024</p>

5.6 Land Application Management Plan

Required Action	Due Date
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<p>Land Application Management Plan Submittal: Submit a land application management plan for Department approval pursuant to s. NR 204.11(1), Wis. Adm. Code. The plan shall include a description of the facility's sludge management program and how the permittee plans to operate the facility in compliance with the requirements of ch. NR 204, Wis. Adm. Code. The plan shall include, among others, separate sections for municipal sewage cake sludge, municipal sewage liquid sludge and algae that addresses expected nutrient values and predicted loading rates. If there will be designated landspreading sites for each waste type, they should be listed by legal location and department spreading site number.</p>	<p>12/31/2024</p>
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6 Standard Requirements

NR 205, Wisconsin Administrative Code: The conditions in ss. NR 205.07(1) and NR 205.07(2), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(2).

6.1 Reporting and Monitoring Requirements

6.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

6.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sample collection and analysis shall be performed in accordance with ch. NR 140, Wis. Adm. Code. The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation. If the required level cannot be met by any of the methods available in NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

6.1.3 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- the date, exact place, method and time of sampling or measurements;
- the individual who performed the sampling or measurements;
- the date the analysis was performed;
- the individual who performed the analysis;
- the analytical techniques or methods used; and
- the results of the analysis.

6.1.4 Reporting of Monitoring Results

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For purposes of calculating NR 101 fees, the 2 mg/l lower reporting limits for BOD5 and Total Suspended Solids shall be considered to be limits of quantitation
- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a “0” (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.
- If no discharge occurs through an outfall, flow related parameters (e.g. flow rate, hydraulic application rate, volume, etc.) should be reported as “0” (zero) at the required sample frequency specified for the outfall. For example: if the sample frequency is daily, “0” would be reported for any day during the month that no discharge occurred.

6.1.5 Compliance Maintenance Annual Reports

Compliance Maintenance Annual Reports (CMAR) shall be completed using information obtained over each calendar year regarding the wastewater conveyance and treatment system. The CMAR shall be submitted and certified by the permittee in accordance with ch. NR 208, Wis. Adm. Code, by June 30, each year on an electronic report form provided by the Department.

In the case of a publicly owned treatment works, a resolution shall be passed by the governing body and submitted as part of the CMAR, verifying its review of the report and providing responses as required. Private owners of wastewater treatment works are not required to pass a resolution; but they must provide an Owner Statement and responses as required, as part of the CMAR submittal.

The CMAR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The certification verifies that the electronic report is true, accurate and complete.

6.1.6 Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings or electronic data records for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application. All pertinent sludge information, including permit application information and other documents specified in this permit or s. NR 204.06(9), Wis. Adm. Code shall be retained for a minimum of 5 years.

6.1.7 Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

6.1.8 Reporting Requirements – Alterations or Additions

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

6.2 System Operating Requirements

6.2.1 Noncompliance Reporting

Sanitary sewer overflows and sewage treatment facility overflows shall be reported according to the 'Sanitary Sewer Overflows and Sewage Treatment Facility Overflows' section of this permit.

The permittee shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance:

- any noncompliance which may endanger health or the environment;
- any violation of an effluent limitation resulting from a bypass;
- any violation of an effluent limitation resulting from an upset; and
- any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit, either for effluent or sludge.

A written report describing the noncompliance shall also be submitted to the Department's regional office within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.

NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources immediately of any discharge not authorized by the permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

6.2.2 Flow Meters

Flow meters shall be calibrated annually, as per s. NR 218.06, Wis. Adm. Code.

6.2.3 Raw Grit and Screenings

All raw grit and screenings shall be disposed of at a properly licensed solid waste facility or picked up by a licensed waste hauler. If the facility or hauler are located in Wisconsin, then they shall be licensed under chs. NR 500-555, Wis. Adm. Code.

6.2.4 Sludge Management

All sludge management activities shall be conducted in compliance with ch. NR 204 "Domestic Sewage Sludge Management", Wis. Adm. Code.

6.2.5 Prohibited Wastes

Under no circumstances may the introduction of wastes prohibited by s. NR 211.10, Wis. Adm. Code, be allowed into the waste treatment system. Prohibited wastes include those:

- which create a fire or explosion hazard in the treatment work;
- which will cause corrosive structural damage to the treatment work;
- solid or viscous substances in amounts which cause obstructions to the flow in sewers or interference with the proper operation of the treatment work;
- wastewaters at a flow rate or pollutant loading which are excessive over relatively short time periods so as to cause a loss of treatment efficiency; and
- changes in discharge volume or composition from contributing industries which overload the treatment works or cause a loss of treatment efficiency.

6.2.6 Bypass

This condition applies only to bypassing at a sewage treatment facility that is not a scheduled bypass, approved blending as a specific condition of this permit, a sewage treatment facility overflow or a controlled diversion as provided in the sections titled 'Scheduled Bypass', 'Blending' (if approved), 'SSO's and Sewage Treatment Facility Overflows' and 'Controlled Diversions' of this permit. Any other bypass at the sewage treatment facility is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the Noncompliance Reporting section of this permit.

6.2.7 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the 'Controlled Diversions' section of this permit, the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee's written request for Department approval of a scheduled bypass shall demonstrate that the conditions for bypassing specified in the above section titled 'Bypass' are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is determined there is significant public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

6.2.8 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation. Sewage treatment facilities that have multiple treatment units to treat variable or seasonal loading conditions may shut

down redundant treatment units when necessary for efficient operation. The following requirements shall be met during controlled diversions:

- Effluent from the sewage treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion does not include blending as defined in s. NR 210.03(2e), Wis. Adm. Code, and as may only be approved under s. NR 210.12. A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in sewage treatment facility records and such records shall be available to the department on request.

6.2.9 Blending

The Department has determined that blending as defined in s. NR 210.03(2e), Wis. Adm. Code, may occur at this sewage treatment facility. The following requirements shall apply whenever blending operations are in effect:

- Blending may occur temporarily only during wet weather or other high flow conditions when peak wastewater flow to the sewage treatment facility exceeds the maximum design and operating capacity of the biological treatment processes and when necessary to avoid severe property damage to the sewage treatment facility as described in NR 210.12, Wis. Adm. Code.;
- Untreated, or partially treated wastewater that is routed around the biological treatment process, or a portion of a biological treatment process, shall be recombined with the biologically treated wastewater and the combined flow shall be disinfected, if required by this permit, prior to discharge;
- Effluent from the sewage treatment facility shall be monitored to include all wastewater that is discharged from the facility, including those wastewaters that are diverted around the biological treatment process. Final discharged effluent shall meet the effluent limitations for outfalls included in this permit; and
- Blending under this section and the circumstances that lead to blending shall be reported to the Department by telephone or email no later than 24 hours from the time each blending operation ceases at the sewage treatment facility. Permittees shall also report the time, duration and volume of wastewater routed around the biological treatment process on the wastewater Discharge Monitoring Report (DMR) forms.

6.2.10 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

6.2.11 Operator Certification

The wastewater treatment facility shall be under the direct supervision of a state certified operator. In accordance with s. NR 114.53, Wis. Adm. Code, every WPDES permitted treatment plant shall have a designated operator-in-charge holding a current and valid certificate. The designated operator-in-charge shall be certified at the level and in all subclasses of the treatment plant, except laboratory. Treatment plant owners shall notify the department of any changes in the operator-in-charge within 30 days. Note that s. NR 114.52(22), Wis. Adm. Code, lists types of facilities that are excluded from operator certification requirements (i.e. private sewage systems, pretreatment facilities

discharging to public sewers, industrial wastewater treatment that consists solely of land disposal, agricultural digesters and concentrated aquatic production facilities with no biological treatment).

6.3 Sewage Collection Systems

6.3.1 Sanitary Sewage Overflows and Sewage Treatment Facility Overflows

6.3.1.1 Overflows Prohibited

Any overflow or discharge of wastewater from the sewage collection system or at the sewage treatment facility, other than from permitted outfalls, is prohibited. The permittee shall provide information on whether any of the following conditions existed when an overflow occurred:

- The sanitary sewer overflow or sewage treatment facility overflow was unavoidable to prevent loss of life, personal injury or severe property damage;
- There were no feasible alternatives to the sanitary sewer overflow or sewage treatment facility overflow such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or preventative maintenance activities;
- The sanitary sewer overflow or the sewage treatment facility overflow was caused by unusual or severe weather related conditions such as large or successive precipitation events, snowmelt, saturated soil conditions, or severe weather occurring in the area served by the sewage collection system or sewage treatment facility; and
- The sanitary sewer overflow or the sewage treatment facility overflow was unintentional, temporary, and caused by an accident or other factors beyond the reasonable control of the permittee.

6.3.1.2 Permittee Response to Overflows

Whenever a sanitary sewer overflow or sewage treatment facility overflow occurs, the permittee shall take all feasible steps to control or limit the volume of untreated or partially treated wastewater discharged, and terminate the discharge as soon as practicable. Remedial actions, including those in NR 210.21 (3), Wis. Adm. Code, shall be implemented consistent with an emergency response plan developed under the CMOM program.

6.3.1.3 Permittee Reporting

Permittees shall report all sanitary sewer overflows and sewage treatment overflows as follows:

- The permittee shall notify the department by telephone, fax or email as soon as practicable, but no later than 24 hours from the time the permittee becomes aware of the overflow;
- The permittee shall, no later than five days from the time the permittee becomes aware of the overflow, provide to the department the information identified in this paragraph using department form number 3400-184. If an overflow lasts for more than five days, an initial report shall be submitted within 5 days as required in this paragraph and an updated report submitted following cessation of the overflow. At a minimum, the following information shall be included in the report:
 - The date and location of the overflow;
 - The surface water to which the discharge occurred, if any;
 - The duration of the overflow and an estimate of the volume of the overflow;
 - A description of the sewer system or treatment facility component from which the discharge occurred such as manhole, lift station, constructed overflow pipe, or crack or other opening in a pipe;
 - The estimated date and time when the overflow began and stopped or will be stopped;
 - The cause or suspected cause of the overflow including, if appropriate, precipitation, runoff conditions, areas of flooding, soil moisture and other relevant information;

- Steps taken or planned to reduce, eliminate and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
- A description of the actual or potential for human exposure and contact with the wastewater from the overflow;
- Steps taken or planned to mitigate the impacts of the overflow and a schedule of major milestones for those steps;
- To the extent known at the time of reporting, the number and location of building backups caused by excessive flow or other hydraulic constraints in the sewage collection system that occurred concurrently with the sanitary sewer overflow and that were within the same area of the sewage collection system as the sanitary sewer overflow; and
- The reason the overflow occurred or explanation of other contributing circumstances that resulted in the overflow event. This includes any information available including whether the overflow was unavoidable to prevent loss of life, personal injury, or severe property damage and whether there were feasible alternatives to the overflow.

NOTE: A copy of form 3400-184 for reporting sanitary sewer overflows and sewage treatment facility overflows may be obtained from the department or accessed on the department's web site at <http://dnr.wi.gov/topic/wastewater/SSOreport.html>. As indicated on the form, additional information may be submitted to supplement the information required by the form.

- The permittee shall identify each specific location and each day on which a sanitary sewer overflow or sewage treatment facility overflow occurs as a discrete sanitary sewer overflow or sewage treatment facility overflow occurrence. An occurrence may be more than one day if the circumstances causing the sanitary sewer overflow or sewage treatment facility overflow results in a discharge duration of greater than 24 hours. If there is a stop and restart of the overflow at the same location within 24 hours and the overflow is caused by the same circumstance, it may be reported as one occurrence. Sanitary sewer overflow occurrences at a specific location that are separated by more than 24 hours shall be reported as separate occurrences; and
- A permittee that is required to submit wastewater discharge monitoring reports under NR 205.07 (1) (r) shall also report all sanitary sewer overflows and sewage treatment facility overflows on that report.

6.3.1.4 Public Notification

The permittee shall notify the public of any sanitary sewer and sewage treatment facility overflows consistent with its emergency response plan required under the CMOM (Capacity, Management, Operation and Maintenance) section of this permit and s. NR 210.23 (4) (f), Wis. Adm. Code. Such public notification shall occur promptly following any overflow event using the most effective and efficient communications available in the community. At minimum, a daily newspaper of general circulation in the county(s) and municipality whose waters may be affected by the overflow shall be notified by written or electronic communication.

6.3.2 Capacity, Management, Operation and Maintenance (CMOM) Program

- The permittee shall have written documentation of the Capacity, Management, Operation and Maintenance (CMOM) program components in accordance with s. NR 210.23(4), Wis. Adm. Code. Such documentation shall be available for Department review upon request. The Department may request that the permittee provide this documentation or prepare a summary of the permittee's CMOM program at the time of application for reissuance of the WPDES permit.
- The permittee shall implement a CMOM program in accordance with s. NR 210.23, Wis. Adm. Code.
- The permittee shall at least annually conduct a self-audit of activities conducted under the permittee's CMOM program to ensure CMOM components are being implemented as necessary to meet the general standards of s. NR 210.23(3), Wis. Adm. Code.

6.3.3 Sewer Cleaning Debris and Materials

All debris and material removed from cleaning sanitary sewers shall be managed to prevent nuisances, run-off, ground infiltration or prohibited discharges.

- Debris and solid waste shall be dewatered, dried and then disposed of at a licensed solid waste facility.
- Liquid waste from the cleaning and dewatering operations shall be collected and disposed of at a permitted wastewater treatment facility.
- Combination waste including liquid waste along with debris and solid waste may be disposed of at a licensed solid waste facility or wastewater treatment facility willing to accept the waste.

6.4 Surface Water Requirements

6.4.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this permit was issued, unless this permit specifies a higher LOQ.

6.4.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

Weekly/Monthly/Six-Month/Annual Average Concentration = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Weekly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

Monthly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

Six-Month Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Annual Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the entire year.

Total Monthly Discharge: = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

Total Annual Discharge: = sum of total monthly discharges for the calendar year.

12-Month Rolling Sum of Total Monthly Discharge: = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

6.4.3 Effluent Temperature Requirements

Weekly Average Temperature – If temperature limits are included in this permit, Weekly Average Temperature shall be calculated as the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

Cold Shock Standard – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock pursuant to Wis. Adm. Code, s. NR 102.28. ‘Cold Shock’ means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

Rate of Temperature Change Standard – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state pursuant to Wis. Adm. Code, s. NR 102.29.

6.4.4 Visible Foam or Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts.

6.4.5 Surface Water Uses and Criteria

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

- a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.
- b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.
- c) Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.
- d) Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

6.4.6 Percent Removal

During any 30 consecutive days, the average effluent concentrations of BOD₅ and of total suspended solids shall not exceed 15% of the average influent concentrations, respectively. This requirement does not apply to removal of total suspended solids if the permittee operates a lagoon system and has received a variance for suspended solids granted under NR 210.07(2), Wis. Adm. Code.

6.4.7 Chloride Notification

The permittee shall notify the Department in writing of any proposed changes which may affect the characteristics of the wastewater, which results in an increase in the concentration of chloride, under the authority of sections 283.31(4)(b) and 283.59(1), Stats. This notification shall include a description of the proposed source of chlorides and the anticipated increase in concentration. Following receipt of the notification, the Department may propose a modification to the permit.

6.4.8 *E. coli*

The monthly limit for *E. coli* shall be expressed as a geometric mean. In calculating the geometric mean, a value of 1 is used for any result of 0.

6.4.9 Seasonal Disinfection

Disinfection shall be provided from May 1 through September 30 of each year. Monitoring requirements and the limitations for Fecal Coliform (interim) and *E. coli* apply only during the period in which disinfection is required. Whenever chlorine is used for disinfection or other uses, the limitations and monitoring requirements for residual chlorine shall apply. A dechlorination process shall be in operation whenever chlorine is used.

6.4.10 PFOS and PFOA Requirements

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the aqueous matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., in accordance with s. NR 149.41, Wis. Adm. Code. If the EPA Office of Water publishes a 1600 series isotope dilution method for the analysis of PFAS in wastewater, the department recommends the use of the EPA method.

The Department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

6.4.11 Applicability of Alternative Wet Weather Mass Limitations

An alternative wet weather mass limitation applies when:

- The applicable mass limitation (based on annual average design flow) is exceeded; and
- The permittee demonstrates to the satisfaction of the Department that the discharge exceedance is caused by and occurs during a wet weather event. For the purposes of this demonstration, a wet weather event occurs during and immediately following periods of precipitation or snowmelt, including but not limited to rain, sleet, snow, hail or melting snow during which water from the precipitation, snowmelt or elevated groundwater enters the sewerage system through infiltration or inflow, or both. The permittee shall present demonstrations to the Department by attaching them to the Wastewater Discharge Monitoring Report Form(s).

Note: In making this demonstration, the permittee may want to consider presenting a discussion of normal effluent flow rates, the effluent flow rates that resulted in the exceedance and identification of the event, including intensity and duration, which caused the high flow rates. A graph of effluent flow over time may also be helpful.

Total Residual Chlorine Requirements

When total residual chlorine (TRC) limit(s) or monitoring are included in a permit, the permittee shall comply with the following conditions:

- a) The permittee shall perform TRC monitoring required in this permit using an approved method from ch. NR 219, Wis. Adm. Code, which produces a detection limit that is less than or equal to the permitted limit or produces the lowest economically feasible detection limit if the approved methods cannot meet the permit limit. If the facility cannot achieve a detection limit less than or equal to the permit limit using the approved methods, contact the laboratory accreditation program for guidance.
- b) The permittee shall determine the limit of detection (LOD) as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, or the permittee shall contact the laboratory accreditation program for information on how to determine a verified detection limit allowed just for TRC. If the verified detection limit is determined using the special procedure, then the LOD and limit of quantitation (LOQ) shall be set to be equal to the verified detection limit determined from this special procedure.
- c) The permittee shall determine compliance with the TRC limit(s) as follows:
 1. If the facility determines a statistical LOD as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, and the measured TRC levels are less than the LOD, the permittee shall report the results as less than the LOD (<LOD). For this situation the LOQ shall be established at 3.33 times the LOD or at the concentration of the lowest standard in the calibration curve. TRC levels that are < LOD are in compliance with the TRC limit.
 2. If the facility determines the verified detection limit using the laboratory accreditation program special procedure, this verified detection limit shall be reported as the LOD and LOQ. If the measured TRC levels are less than the LOD, the permittee shall report the results as < LOD. TRC levels that are < LOD are in compliance with the TRC limit.
 3. If the facility determines the statistical LOD as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, and the measured TRC levels are greater than the statistical LOD but less than the LOQ, TRC levels are in

compliance with the TRC limit - except when the measured levels are consistently reported between the LOD and LOQ. When the measured TRC levels are consistently reported between the LOD and LOQ, the facility shall take action to determine the reliability of detected results (such as resampling and/or re-calculating dosages) and shall adjust the chemical feed system if necessary to reduce the chances of detecting levels between the statistical LOD and LOQ.

4. If the facility determines the statistical LOQ as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, or determines the verified detection limit using the laboratory accreditation program special procedure, TRC measured levels that are greater than the statistical LOQ and the TRC limit, are not in compliance with the TRC limit. The permittee shall report the level as a limit exceedance.
5. If the facility determines the statistical LOD as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, and the measured level is < LOD, then a "0" (zero) value may be substituted for any test result less than the statistical LOD when calculating the average or mass discharge values. Calculated values shall then be compared directly to the average or mass limits to determine compliance.
6. If the facility determines the verified detection limit using the laboratory accreditation program special procedure and the measured level is < LOD (set equal to the verified detection limit), then a "0" (zero) value may be substituted for any test result less than the LOD when calculating the average or mass discharge values. Calculated values shall then be compared directly to the average or mass limits to determine compliance.

6.4.12 Whole Effluent Toxicity (WET) Monitoring Requirements

In order to determine the potential impact of the discharge on aquatic organisms, static-renewal toxicity tests shall be performed on the effluent in accordance with the procedures specified in the "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*" (PUB-WT-797, November 2004) as required by NR 219.04, Table A, Wis. Adm. Code). All of the WET tests required in this permit, including any required retests, shall be conducted on the *Ceriodaphnia dubia* and fathead minnow species. Receiving water samples shall not be collected from any point in contact with the permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

6.4.13 Whole Effluent Toxicity (WET) Identification and Reduction

Within 60 days of a retest which showed positive results, the permittee shall submit a written report to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921, which details the following:

- A description of actions the permittee has taken or will take to remove toxicity and to prevent the recurrence of toxicity;
- A description of toxicity reduction evaluation (TRE) investigations that have been or will be done to identify potential sources of toxicity, including the following actions:
 - a) Evaluate the performance of the treatment system to identify deficiencies contributing to effluent toxicity (e.g., operational problems, chemical additives, incomplete treatment)
 - b) Identify the compound(s) causing toxicity. Conduct toxicity screening tests on the effluent at a minimum of once per month for six months to determine if toxicity recurs. Screening tests are WET tests using fewer effluent concentrations conducted on the most sensitive species. If any of the screening tests contain toxicity, conduct a toxicity identification evaluation (TIE) to determine the cause. TIE methods are available from USEPA "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures (EPA/600/6-91/003) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F).
 - c) Trace the compound(s) causing toxicity to their sources (e.g., industrial, commercial, domestic)

- d) Evaluate, select, and implement methods or technologies to control effluent toxicity (e.g., in-plant or pretreatment controls, source reduction or removal)
- Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented;
 - If no actions have been taken, the reason for not taking action.

The permittee may also request approval from the Department to postpone additional retests in order to investigate the source(s) of toxicity. Postponed retests must be completed after toxicity is believed to have been removed.

6.5 Land Application Requirements

6.5.1 Sludge Management Program Standards And Requirements Based Upon Federally Promulgated Regulations

In the event that new federal sludge standards or regulations are promulgated, the permittee shall comply with the new sludge requirements by the dates established in the regulations, if required by federal law, even if the permit has not yet been modified to incorporate the new federal regulations.

6.5.2 General Sludge Management Information

The General Sludge Management Form 3400-48 shall be completed and submitted prior to any significant sludge management changes.

6.5.3 Sludge Samples

All sludge samples shall be collected at a point and in a manner which will yield sample results which are representative of the sludge being tested, and collected at the time which is appropriate for the specific test.

6.5.4 Land Application Characteristic Report

Each report shall consist of a Characteristic Form 3400-49 and Lab Report. The Characteristic Report Form 3400-49 shall be submitted electronically by January 31 following each year of analysis.

Following submittal of the electronic Characteristic Report Form 3400-49, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report is true, accurate and complete. The Lab Report must be sent directly to the facility's DNR sludge representative or basin engineer unless approval for not submitting the lab reports has been given.

The permittee shall use the following convention when reporting sludge monitoring results: Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 1.0 mg/kg, report the pollutant concentration as < 1.0 mg/kg .

All results shall be reported on a dry weight basis.

6.5.5 Calculation of Water Extractable Phosphorus

When sludge analysis for Water Extractable Phosphorus is required by this permit, the permittee shall use the following formula to calculate and report Water Extractable Phosphorus:

Water Extractable Phosphorus (% of Total P) =

$$[\text{Water Extractable Phosphorus (mg/kg, dry wt)} \div \text{Total Phosphorus (mg/kg, dry wt)}] \times 100$$

6.5.6 Monitoring and Calculating PCB Concentrations in Sludge

When sludge analysis for “PCB, Total Dry Wt” is required by this permit, the PCB concentration in the sludge shall be determined using either congener-specific analysis or Aroclor analysis. The permittee may decide which of these analyses is performed. Analyses shall be performed in accordance with the following provisions and Table EM in s. NR 219.04, Wis. Adm. Code:

- If congener-specific analysis is employed: All PCB congeners shall be delineated. Non-detects shall be treated as zero. The values that are between the limit of detection (LOD) and the limit of quantitation shall be used when calculating the total value of all congeners. All results shall be added together and the total PCB concentration by dry weight reported.
- If Aroclor analysis is employed, reporting protocols, consistent with s. NR 106.07(6)(e), should be as follows: If all Aroclors are less than the LOD, then the Total PCB Dry Wt result should be reported as less than the highest LOD. If a single Aroclor is detected, then that is what should be reported for the Total PCB result. If multiple Aroclors are detected, they should be summed and reported as Total PCBs. If the LOD cannot be achieved after using the appropriate clean up techniques, a reporting limit that is achievable for the Aroclors or each congener for the sample shall be determined. This reporting limit shall be reported and qualified indicating the presence of an interference.

6.5.7 Annual Land Application Report

Land Application Report Form 3400-55 shall be submitted electronically by January 31, each year whether or not non-exceptional quality sludge is land applied. Non-exceptional quality sludge is defined in s. NR 204.07(4), Wis. Adm. Code. Following submittal of the electronic Annual Land Application Report Form 3400-55, this form shall be certified electronically via the ‘eReport Certify’ page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The ‘eReport Certify’ page certifies that the electronic report form is true, accurate and complete.

6.5.8 Other Methods of Disposal or Distribution Report

The permittee shall submit electronically the Other Methods of Disposal or Distribution Report Form 3400-52 by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied. Following submittal of the electronic Report Form 3400-52, this form shall be certified electronically via the ‘eReport Certify’ page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The ‘eReport Certify’ page certifies that the electronic report form is true, accurate and complete.

6.5.9 Approval to Land Apply

Bulk non-exceptional quality sludge as defined in s. NR 204.07(4), Wis. Adm. Code, may not be applied to land without a written approval letter or Form 3400-122 from the Department unless the Permittee has obtained permission from the Department to self approve sites in accordance with s. NR 204.06 (6), Wis. Adm. Code. Analysis of sludge characteristics is required prior to land application. Application on frozen or snow covered ground is restricted to the extent specified in s. NR 204.07(3) (1), Wis. Adm. Code.

6.5.10 Soil Analysis Requirements

Each site requested for approval for land application must have the soil tested prior to use. Each approved site used for land application must subsequently be soil tested such that there is at least one valid soil test in the four years prior to land application. All soil sampling and submittal of information to the testing laboratory shall be done in accordance with UW Extension Bulletin A-2100. The testing shall be done by the UW Soils Lab in Madison or Marshfield, WI or at a lab approved by UW. The test results including the crop recommendations shall be submitted to the DNR contact listed for this permit, as they are available. Application rates shall be determined based on the crop nitrogen recommendations and with consideration for other sources of nitrogen applied to the site.

6.5.11 Land Application Site Evaluation

For non-exceptional quality sludge, as defined in s. NR 204.07(4), Wis. Adm. Code, a Land Application Site Request Form 3400-053 shall be submitted to the Department for the proposed land application site. The Department will evaluate the proposed site for acceptability and will either approve or deny use of the proposed site. The permittee may obtain permission to approve their own sites in accordance with s. NR 204.06(6), Wis. Adm. Code.

6.5.12 Class A Sludge: Fecal Coliform Density Requirement

The fecal coliform density which must be < 1000 MPN/g TS as required in s. NR 204.07, Wis. Adm. Code, shall be satisfied immediately after the treatment process is completed. If the material is bagged or distributed at that time, no re-testing is required. If the material is bagged, distributed or land applied at a later time, the sludge shall be re-tested and this requirement satisfied at that time also, to ensure that regrowth of bacteria has not occurred. See Municipal Wastewater Sludge Guidance Memo #3 (Fecal Coliform Monitoring - Sampling and Analytical Procedures).

6.5.13 Class A Sludge: Heat Drying Process

Dry the sludge by direct or indirect contact with hot gases to reduce the moisture content of the sludge to 10% or lower. Either the temperature of the sewage sludge particles shall exceed 80° C or the wet bulb temperature of the gas in contact with the sludge as the sludge leaves the dryer shall exceed 80° C.

6.5.14 Class B Sludge: Fecal Coliform Limitation

Compliance with the fecal coliform limitation for Class B sludge shall be demonstrated by calculating the geometric mean of at least 7 separate samples. (Note that a Total Solids analysis must be done on each sample). The geometric mean shall be less than 2,000,000 MPN or CFU/g TS. Calculation of the geometric mean can be done using one of the following 2 methods.

Method 1:

$$\text{Geometric Mean} = (X_1 \times X_2 \times X_3 \dots \times X_n)^{1/n}$$

Where X = Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Method 2:

$$\text{Geometric Mean} = \text{antilog}[(X_1 + X_2 + X_3 \dots + X_n) \div n]$$

Where X = log₁₀ of Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Example for Method 2

Sample Number	Coliform Density of Sludge Sample	log ₁₀
1	6.0 x 10 ⁵	5.78
2	4.2 x 10 ⁶	6.62
3	1.6 x 10 ⁶	6.20
4	9.0 x 10 ⁵	5.95
5	4.0 x 10 ⁵	5.60
6	1.0 x 10 ⁶	6.00
7	5.1 x 10 ⁵	5.71

The geometric mean for the seven samples is determined by averaging the log₁₀ values of the coliform density and taking the antilog of that value.

$$(5.78 + 6.62 + 6.20 + 5.95 + 5.60 + 6.00 + 5.71) \div 7 = 5.98$$

$$\text{The antilog of } 5.98 = 9.5 \times 10^5$$

6.5.15 Class B Sludge: Anaerobic Digestion

Treat the sludge in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35° C to 55° C and 60 days at 20° C. Straight-line interpolation to calculate mean cell residence time is allowable when the temperature falls between 35° C and 20° C.

6.5.16 Vector Control: Volatile Solids Reduction

The mass of volatile solids in the sludge shall be reduced by a minimum of 38% between the time the sludge enters the digestion process and the time it either exits the digester or a storage facility. For calculation of volatile solids reduction, the permittee shall use the Van Kleeck equation or one of the other methods described in "Determination of Volatile Solids Reduction in Digestion" by J.B. Farrell, which is Appendix C of EPA's *Control of Pathogens in Municipal Wastewater Sludge* (EPA/625/R-92/013). The Van Kleeck equation is:

$$\text{VSR}\% = \frac{\text{VS}_{\text{IN}} - \text{VS}_{\text{OUT}}}{\text{VS}_{\text{IN}} - (\text{VS}_{\text{OUT}} \times \text{VS}_{\text{IN}})} \times 100$$

Where: VS_{IN} = Volatile Solids in Feed Sludge (g VS/g TS)

VS_{OUT} = Volatile Solids in Final Sludge (g VS/g TS)

VSR% = Volatile Solids Reduction, (Percent)

6.5.17 Vector Control: Drying Without Primary Solids

Dry the sludge to 75% total solids when the sludge contains no unstabilized solids from primary treatment. This shall be met at the time the sludge is bagged, distributed, land applied or disposed of.

6.5.18 Class A Sludge - Vector Control: Injection

The sludge shall be injected within 8 hours after being discharged from the pathogen treatment process. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sludge is injected.

6.5.19 Class B Sludge - Vector Control: Injection

No significant amount of the sewage sludge shall be present on the land surface within one hour after the sludge is injected.

6.5.20 Class A Sludge - Vector Control: Incorporation

Class A sludge shall be surface applied within 8 hours after being discharged from a pathogen treatment process and then be incorporated within 6 hours of surface application.

6.5.21 Class B Sludge - Vector Control: Incorporation

Class B sludge shall be incorporated within 6 hours of surface application, or as approved by the Department.

6.5.22 Landfilling of Sludge

General: Sewage sludge may not be disposed of in a municipal solid waste landfill unless the landfill meets the requirements of chs. NR 500 to 536, Wis. Adm. Code, and is an approved facility as defined in s. 289.01(3), Wis. Stats. Any facility accepting sewage sludge shall be approved by the Department in writing to accept sewage sludge. Disposal of sewage sludge in a municipal solid waste landfill shall be in accordance with ss. NR 506.13 and 506.14. Sewage sludge may not be disposed of in a surface disposal unit as defined in s. NR 204.03(62).

Approval: The permittee shall obtain approval from the Department prior to the disposal of sludge at a Wisconsin licensed landfill.

6.5.23 Sludge Landfilling Reports

The permittee shall report the volume of sludge disposed of at any landfill facility on Form 3400-52. The permittee shall include the name and address of the landfill, the Department license number or other state's designation or

license number for all landfills used during the report period and a letter of acceptability from the landfill owner. In addition, any permittee utilizing landfills as a disposal method shall submit to the Department any test results used to indicate acceptability of the sludge at a landfill. Form 3400-52 shall be submitted annually by January 31, each year whether or not sludge is landfilled.

6.5.24 Sludge Hauling

The permittee is required to submit Form 3400-52 to the Department. If sludge is hauled to another facility, information shall include the quantity of sludge hauled, the name, address, phone number, contact person, and permit number of the receiving facility. Form 3400-52 shall be submitted annually by January 31 each year whether or not sludge is hauled.

6.5.25 Land Application of Sludge Which Contains Elevated Levels of Radium-226

Sludge containing Radium 226 shall be land applied in accordance with the requirements in s. NR 204.07(3)(n), Wis. Adm. Code.

7 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Adaptive Management Interim Limit Compliance Update -Comply with Adaptive Management Interim Limit	May 1, 2025	40
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report	March 31, 2026	40
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #2	March 31, 2027	40
Watershed Adaptive Management Option Annual Report Submittals -Final Adaptive Management Report for 1st Permit Term	March 31, 2028	41
Watershed Adaptive Management Option Annual Report Submittals - Renewal of Adaptive Management Plan for Permit Reissuance	June 30, 2028	41
Watershed Adaptive Management Option Annual Report Submittals - Comply with Adaptive Management Interim Limit	April 1, 2029	41
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #6	March 31, 2029	41
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #7	March 31, 2030	41
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #8	March 31, 2031	41
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #9	March 31, 2032	41
Watershed Adaptive Management Option Annual Report Submittals -Final Adaptive Management Report for 2nd Permit Term	March 31, 2033	41
Watershed Adaptive Management Option Annual Report Submittals - Renewal of Adaptive Management Plan for Permit Reissuance	June 30, 2033	41
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #11	March 31, 2034	42
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #12	March 31, 2035	42
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #13	March 31, 2036	42
Watershed Adaptive Management Option Annual Report Submittals - Annual Adaptive Management Report #14	March 31, 2037	42
Watershed Adaptive Management Option Annual Report Submittals -Final Adaptive Management Report	March 31, 2038	42
Watershed Adaptive Management Option Annual Report Submittals - Achieve Water Quality Standards and Adaptive Management Plan Success	December 31, 2038	42
Chloride WQBELs Compliance -Annual Chloride Progress Report	January 31, 2024	42
Chloride WQBELs Compliance -Annual Chloride Progress Report #2	January 31, 2025	43

Chloride WQBELs Compliance -Annual Chloride Progress Report #3	January 31, 2026	43
Chloride WQBELs Compliance -Annual Chloride Progress Report #4	January 31, 2027	43
Chloride WQBELs Compliance -Comply With Final Chloride WQBELs	July 1, 2028	43
PFOS/PFOA Minimization Plan Determination of Need -Report on Effluent Discharge	December 31, 2024	43
PFOS/PFOA Minimization Plan Determination of Need -Report on Effluent Discharge and Evaluation of Need	December 31, 2025	43
Sludge Management Plan -Sludge Management (SMP) Plan Submittal	December 31, 2024	44
Land Application Management Plan -Land Application Management Plan Submittal	December 31, 2024	45
Compliance Maintenance Annual Reports (CMAR)	by June 30, each year	47
General Sludge Management Form 3400-48	prior to any significant sludge management changes	57
Characteristic Form 3400-49 and Lab Report	by January 31 following each year of analysis	57
Land Application Report Form 3400-55	by January 31, each year whether or not non-exceptional quality sludge is land applied	58
Other Methods of Disposal or Distribution Report Form 3400-52	by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied	58
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	46

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:
South Central Region, 3911 Fish Hatchery Rd, Fitchburg, WI 53711-5397