

Permit Fact Sheet

General Information

Permit Number:	WI-0025062-10-0	
Permittee Name:	Village of Paddock Lake	
Address:	6969 236th Ave	
City/State/Zip:	Salem WI 53168	
Discharge Location:	West bank of Brighton Creek, approximately 30 feet upstream of the Hwy K (60 th Street) bridge. (42.58301°N, 88.08037°W)	
Receiving Water:	Brighton Creek (Des Plaines River Watershed, Fox (IL) River Basin)	
StreamFlow (Q _{7,10}):	<0.01 cfs	
Stream Classification:	Warm water sport fish community; non-public water supply	
Design Flow(s)	Daily Maximum	3.0 MGD
	Weekly Maximum	1.3 MGD
	Monthly Maximum	1.6 MGD
	Annual Average	0.8 MGD
Significant Industrial Loading?	No	
Operator at Proper Grade?	Yes. Plant is rated as an Advanced facility with subclasses A1, B, C, D, and P.	
Approved Pretreatment Program?	N/A	

Facility Description

The Village of Paddock Lake operates an extended aeration activated sludge wastewater treatment facility with an annual average design flow of 0.8 MGD. The plant serves approximately 3000 residents with no significant industrial loading. Treatment consists of fine screening, a two-ring oxidation ditch, clarification, post-aeration and UV disinfection. The treated effluent is pumped to Brighton Creek via force main, approximately 1.2 miles east of the WWTF. Sludge produced by the treatment process is digested aerobically, stored on drying beds for dewatering, and then landfilled by an independent contractor.

The Department has found the facility to be in substantial compliance with the current permit.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)
701	Flow 0.54 MGD; BOD 143.2 mg/L; 153.6 mg/L (May 2014-Sept 2018 avg)	INFLUENT: 24 hour flow proportional composite samples shall be collected prior to the fine screen. Sample point includes plant recycle flows from the sludge holding tank and drying beds.
001	Flow 0.43 MGD; BOD 2.95 mg/L; TSS 3.83 mg/L; NH3-N 0.50 mg/L;	EFFLUENT: 24-hr flow proportional composite samples shall be collected at the effluent pump wet well. Grab samples shall be

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)
	TP 0.46 mg/L; Chloride 399 mg/L (May 2014-Sept 2018 avg)	collected at the post-aeration tank effluent channel immediately after UV disinfection.
004	88 Dry US tons generated annually (2018)	Class B, aerobically digested, liquid sludge. Representative sludge samples shall be collected prior to hauling and test results shall be reported on Form 3400-49 'Waste Characteristics'. Hauled sludge reports shall be submitted on Form 3400-52 'Other Methods of Disposal'.
005	60 U.S. Dry US tons landfilled (2018)	Class B, aerobically digested, bed dried cake sludge. Representative samples shall be collected prior to landfill disposal

1 Influent - Proposed Monitoring

1.1 Sample Point Number: 701- INFLUENT TO PLANT

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

1.1.1 Changes from Previous Permit:

Monitoring requirements for ammonia total nitrogen were initially included in reissued permits prior to 2000 to provide better characterization of influent wastewater. Review of the overall trends in influent and effluent data submitted from 2014 to 2018 shows that while influent loading is increasing, the treatment efficiency has remained consistent (92-99% removal). Therefore, monitoring of ammonia total nitrogen as an operational parameter is removed from the proposed permit and has been confirmed with the permittee.

1.1.2 Explanation of Monitoring Requirements

BOD5 and Total Suspended Solids: Tracking of BOD5 and Total Suspended Solids are required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code and in the Standard Requirements section of the permit.

2 Surface Water - Proposed Monitoring and Limitations

2.1 Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total	Weekly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective November through April.
BOD5, Total	Weekly Avg	5.0 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective May through October.
BOD5, Total	Monthly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective November through April.
BOD5, Total	Monthly Avg	5.0 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective May through October.
Suspended Solids, Total	Weekly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	
pH Field	Daily Min	6.0 su	5/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	7.0 mg/L	Daily	Grab	
Fecal Coliform	Geometric Mean - Wkly	656 #/100 ml	Weekly	Grab	Limit effective May through September.
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	Weekly	Grab	Limit effective May through September.
Nitrogen, Ammonia Variable Limit		mg/L	3/Week	Calculated	Report the calculated variable Ammonia limit on the DMR year round. See Maximum Ammonia limits table in section 2.2.1.2 of the permit.
Nitrogen, Ammonia (NH3-N) Total	Daily Max – Variable	mg/L	3/Week	24-Hr Flow Prop Comp	Report Ammonia effluent value on the DMR. Year-Round limit and monitoring.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	9.9 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective November through March.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	5.2 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective April through May.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	3.5 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective June through September.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	8.7 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective for October.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.0 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective November through March.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.1 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective April through May.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	1.4 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective June through September.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	3.5 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective for October.
Phosphorus, Total	Monthly Avg	0.7 mg/L	3/Week	24-Hr Flow Prop Comp	This is an interim MDV limit effective through the permit term. See the MDV/Phosphorus and Schedules sections.
Phosphorus, Total		lbs/month	Monthly	Calculated	Report the total monthly phosphorus discharged in lbs/month on the last day of the month on the DMR. See Standard Requirements for 'Appropriate Formulas' to calculate the Total Monthly Discharge in lbs/month.
Phosphorus, Total		lbs/yr	Annual	Calculated	Report the sum of the total monthly discharges (for the months that the MDV is in effect) for the calendar year on the Annual report form.
Chloride	Weekly Avg	510 mg/L	4/Month	24-Hr Flow Prop Comp	This is an interim limit. Sampling shall be done on four consecutive days one week per month. See Chloride Variance and Schedules sections for applicable target value.
Chloride		lbs/day	4/Month	Calculated	Chloride mass = daily concentration (mg/L) x daily flow (MGD) x 8.34
Temperature Maximum		deg F	Weekly	Continuous	Monitoring required in calendar year 2023. (January 1, 2023 through

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					December 31, 2023.)

2.1.1 Changes from Previous Permit

Fecal Coliform: A weekly geometric mean of 656 #/100mL was added to the proposed permit to comply with expression of limits requirements in ss. NR 106.07 and NR 205.065 (7), Wis. Adm. Code.

Ammonia Nitrogen: The existing daily maximum limit of 17 mg/L was removed and replaced with a pH-variable daily maximum limit applicable year-round.

Dissolved Oxygen: The daily minimum increased from 6.0 mg/L to a daily minimum of 7.0 mg/L. For zero dilution conditions, a daily minimum dissolved oxygen limit of 7.0 mg/L is needed to arrive at the 5 mg/L summer (May-Oct) and 10 mg/L winter (Nov -Apr) BOD5 limits using the 26-lb method.

Chloride: The weekly average limits of 612 mg/L (May-Nov) and 685 mg/L (Dec-April) were decreased to a year-round interim limit of 510 mg/L. The sample frequency was updated from “See Permit Note” to “4/Month”.

Chronic WET Test: WET testing requirements were removed from the proposed permit.

Phosphorus MDV: The permittee has applied for a multi-discharger variance (MDV) for phosphorus for this permit term and the application has been approved by the Department. An MDV interim limit of 0.7 mg/l has been added and is effective immediately. The permittee is now required to report the total amount of phosphorus discharged in lbs/month and lbs/year. By March 1 of each year, the permittee shall make a payment(s) to participating county(s) of \$53.01 per pound of phosphorus discharged during the previous year in excess of the target value 0.2 mg/L.

2.1.2 Explanation of Limits and Monitoring Requirements

Categorical Limits

- **BOD5, Total Suspended Solids, pH, and Fecal Coliforms-** Standard municipal wastewater requirements for BOD5, total suspended solids, pH, and fecal coliforms are included based on ch. NR 210, Wis. Adm. Code, ‘Sewage Treatment Works’ requirements for discharges to fish and aquatic life streams. Chapter NR 102, Wis. Adm. Code, ‘Water Quality Standards for Surface Waters’ also specifies requirements for pH for fish and aquatic life streams.

Regulatory changes to s. NR 205.065, Wis. Adm. Code, became effective September 1, 2016 and require limits in this permit to be expressed as weekly average and monthly average limits whenever practicable. These changes are based on 40 CFR 122.45 (d). Minor changes have been made to fecal coliform limitations from the previous permit in order to comply with this regulation.

Water Quality Based Limits

Refer to the Water Quality-Based Effluent Limitations (WQBELs) memo for Paddock Lake Wastewater Treatment Facility prepared by Nick Lent dated November 19, 2018 and used for this reissuance.

- **Ammonia Nitrogen-** Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Table 2C and Table 4B of ch. NR 105, Wis. Adm. Code (effective March 1, 2004). Subchapter IV of ch. NR 106 establishes procedures for calculating water quality-based effluent limitations (WQBELs) for ammonia (effective March 1, 2004). Daily maximum, weekly average, and monthly average ammonia limits are

included in the proposed permit. In accordance with s. NR 106.32(5), Wis. Adm. Code, mass limits for ammonia are not included.

Regulatory changes to s. NR 205.065, Wis. Adm. Code, became effective September 1, 2016 and require limits in this permit to be expressed as weekly average and monthly average limits whenever practicable. A daily maximum pH dependent variable ammonia limit is included in the proposed permit in place of a single value. The calculation of a single daily maximum limit based on the upper 99th percentile of data collected (May 2014 – September 2018) would have resulted in a restrictive 5.7 mg/L daily maximum limit. Therefore, a daily maximum pH dependent variable ammonia limit is included in the proposed permit. See table below for pH variable daily maximum ammonia limits.

Effluent pH (s.u.)	NH ₃ -N Limit (mg/L)	Effluent pH (s.u.)	NH ₃ -N Limit (mg/L)	Effluent pH (s.u.)	NH ₃ -N Limit (mg/L)
6.0 < pH ≤ 6.1	54	7.0 < pH ≤ 7.1	33	8.0 < pH ≤ 8.1	6.9
6.1 < pH ≤ 6.2	53	7.1 < pH ≤ 7.2	30	8.1 < pH ≤ 8.2	5.7
6.2 < pH ≤ 6.3	52	7.2 < pH ≤ 7.3	26	8.2 < pH ≤ 8.3	4.7
6.3 < pH ≤ 6.4	51	7.3 < pH ≤ 7.4	23	8.3 < pH ≤ 8.4	3.9
6.4 < pH ≤ 6.5	49	7.4 < pH ≤ 7.5	20	8.4 < pH ≤ 8.5	3.2
6.5 < pH ≤ 6.6	47	7.5 < pH ≤ 7.6	17	8.5 < pH ≤ 8.6	2.7
6.6 < pH ≤ 6.7	45	7.6 < pH ≤ 7.7	14	8.6 < pH ≤ 8.7	2.2
6.7 < pH ≤ 6.8	42	7.7 < pH ≤ 7.8	12	8.7 < pH ≤ 8.8	1.8
6.8 < pH ≤ 6.9	39	7.8 < pH ≤ 7.9	10	8.8 < pH ≤ 8.9	1.6
6.9 < pH ≤ 7.0	36	7.9 < pH ≤ 8.0	8.4	8.9 < pH ≤ 9.0	1.3

- Phosphorus-** Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorus. The final phosphorus WQBELs are 0.225 mg/L (expressed as a monthly average) and 0.075 mg/L and 0.5 lbs/day (expressed as a six-month average) and were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has applied for the Multi-Discharger Variance (MDV) for phosphorus as provided in s. 283.16, Wis. Stats., and approved by USEPA on February 6, 2017 until February 5, 2027. The permittee qualifies for the MDV because it is an existing source and a major facility upgrade is needed to comply with the applicable phosphorus WQBELs, thereby creating a financial burden. The interim effluent limit for total phosphorus is 0.7 mg/L as monthly average. The limit was derived using DMR data from May 2014 through September 2018.

Conditions of the MDV require the permittee to optimize phosphorus removal throughout the proposed permit term, comply with interim limits and make annual payments to participating county(s) by March 1 of each year based on the pounds of phosphorus discharged during the previous year in excess of the specified monthly average target value of 0.2 mg/L. The “price per pound” value is \$50.00 adjusted for CPI annually during the first quarter as defined by s. 283.16(8)(a)2, Wis. Stats and takes effect for reissued permits with effective dates starting April 1. This may differ from the “price per pound” that is public noticed; however, the “price per pound” is set upon reissuance and is applicable for the entire permit term. The participating county(s) uses these payments to implement non-point source (agricultural and urban) phosphorus control strategies at the watershed level.

- Chloride-** Because the upper ninety-ninth percentile of the 4-day concentration (the 4-day P99) exceeds the calculated weekly average WQBEL, weekly average calculated limitations of 400 mg/L and 2,600 lbs/day are needed in accordance with s. NR 106.05(4) (b), Wis. Adm. Code. However, the permittee has re-applied for a variance from the chronic chloride water quality criterion, which requires EPA approval. Therefore, an interim limit of 510 mg/L as a weekly average is included. As a condition of this variance, implementation of chloride

source reduction measures are required to achieve compliance with the weekly average target value of 460 mg/L by the end of the permit term. Calculated chloride daily mass (4 times per month) is included in the permit as an additional measure to evaluate the effectiveness of implemented source reduction measures.

Chloride Source Reduction Measures:

1. Continue to provide education to residents and businesses on the effects of excessive chloride use and the role of water softeners and road salt application by providing information on the Village website, in the Village newsletter, and at the lake district's annual meeting.
 2. Bring awareness to residents on the effects of excessive chloride use by hosting an open house at the wastewater treatment facility annually and presenting information to attendees.
 3. Explore adoption of a local regulation to require Demand Initiated Regeneration (DIR) water softeners for new installations and replacements and present to Village Board.
 4. Explore adoption of a local regulation to require bypass of water softener systems for outside hose-bib use such as for landscape irrigation and present to Village Board.
 5. Explore adoption of a local regulation to require new businesses to provide chloride reduction plans through executed developer agreements.
 6. Complete a chloride source investigation. Continue to collect samples from the system, including schools and businesses. Collect samples twice per year from 8 system zones and gather information on groundwater infiltration, inflow volumes, and chloride loading.
 7. Use chloride source investigation data to identify the zones, neighborhoods, or occupancy class with the greatest concentration of chloride loading. Implement a village survey of residents to obtain feedback and collect information regarding water softening use and motivation for softening.
 8. Develop a residential water softener inspection and optimization program. Include incentives for residents, encourage participation of area plumbers and water softener contractors, and notify residents of the new program.
 9. Develop a commercial water softening optimization program. Collaborate with commercial water system customers that connect to public water supply to adjust and optimize their use of existing water softeners.
 10. Continue to take actions that prevent chloride from reaching the sewer system. Find and correct inflow and infiltration issues by televising systems and making repairs in a timely manner. Reduce road salt application by 10-15% on a comparable conditions per event basis. Prevent exposure of salt to direct precipitation and runoff from salt storage areas
 11. Identify proper placement for snow piles to prevent snowmelt and runoff from draining to sewer system.
- **Temperature Maximum** - Available temperature data indicated the apparent need for sub-lethal weekly average temperature limitations for the months of October - April pursuant to the procedures in ch. NR 106, Wis. Adm. Code. Therefore, sub lethal weekly average effluent limitations should be included in the proposed permit. However, ch. NR 106.59(4), Wis. Adm. Code, allows publicly operated treatment works to perform a dissipative

cooling (DC) demonstration, which if successful, justifies exclusion of sub-lethal weekly average effluent temperature limits in municipal discharge permits. Paddock Lake has submitted a successful DC demonstration which was approved by the Department in 2015 and the permittee has stated that there haven't been any significant changes in the expected effluent temperatures and industrial loading has recently decreased.

The proposed permit includes daily temperature maximum monitoring in the fourth year of the permit, calendar year 2023, and will be used for the next permit reissuance. In addition, dissipative cooling requests must be re-evaluated every permit reissuance. The permittee is responsible to submit an updated DC request as part of the permit application. Such a request must either include:

a) A statement by the permittee that there have been no substantial changes in operation of, or thermal loadings to, the treatment facility and the receiving water; or

b) New information demonstrating DC to supplement the information used in the previous DC determination. If significant changes in operation or thermal loads have occurred, additional DC data must be submitted to the Department.

3 Land Application - Proposed Monitoring and Limitations

Municipal Sludge Description						
Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
004	B	Liquid	Do not land apply. Sludge is hauled to another permitted facility.			88
005	B	Cake	Do not land apply. Sludge is landfilled.			60
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						
Is a priority pollutant scan required? No Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

3.1 Sample Point Number: 004- Liquid sludge

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Annual	Composite	See permit section 3.2.1.1
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	See permit section 3.2.1.1

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	See permit section 3.2.1.1
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	See permit section 3.2.1.1
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	See permit section 3.2.1.1
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	See permit section 3.2.1.1
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	See permit section 3.2.1.1
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	See permit section 3.2.1.1
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	See permit section 3.2.1.1
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	See permit section 3.2.1.1
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	See permit section 3.2.1.1
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	See permit section 3.2.1.1
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	See permit section 3.2.1.1
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	See permit section 3.2.1.1
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	See permit section 3.2.1.1
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	See permit section 3.2.1.1
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	See permit section 3.2.1.1
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	See permit section 3.2.1.1
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	See permit section 3.2.1.1
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Annual	Composite	See permit section 3.2.1.1
Phosphorus, Total		Percent	Annual	Composite	See permit section 3.2.1.1
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	See permit section 3.2.1.1
Potassium, Total Recoverable		Percent	Annual	Composite	See permit section 3.2.1.1
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	See permit section 3.2.1.1
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	See permit section 3.2.1.1

3.1.1 Changes from Previous Permit:

Specific language regarding the requirements for hauled sludge was added.

3.1.2 Explanation of Limits and Monitoring Requirements

The permittee is not required to analyze for Total Kjeldahl Nitrogen, Ammonium, Total Phosphorus, Water Extractable Phosphorus, Total Recoverable Potassium, pathogens, and vector attraction parameters unless land application of sludge is initiated. As long as hauling to another facility is the sole disposal method, only List 1 analysis is required. The metals limits in the table above do not apply to hauled sludge. If sludge is land applied, the sample frequency may increase based on the amount of sludge generated in accordance with Table A in s. NR 204.06, Wis. Adm. Code, and all limits and monitoring requirements listed in the table apply.

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

3.2 Sample Point Number: 005- Cake sludge - LANDFILLED

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Annual	Composite	See permit section 3.2.2.1
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	See permit section 3.2.2.1
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	See permit section 3.2.2.1
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	See permit section 3.2.2.1
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	See permit section 3.2.2.1
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	See permit section 3.2.2.1
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	See permit section 3.2.2.1
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	See permit section 3.2.2.1
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	See permit section 3.2.2.1
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	See permit section 3.2.2.1
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	See permit section 3.2.2.1
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	See permit section 3.2.2.1
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	See permit section 3.2.2.1
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	See permit section 3.2.2.1
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	See permit section 3.2.2.1
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	See permit section 3.2.2.1
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	See permit section 3.2.2.1
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	See permit section 3.2.2.1
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	See permit section 3.2.2.1
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	See permit section 3.2.2.1

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Phosphorus, Total		Percent	Annual	Composite	See permit section 3.2.2.1
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	See permit section 3.2.2.1
Potassium, Total Recoverable		Percent	Annual	Composite	See permit section 3.2.2.1
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	See permit section 3.2.2.1
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	See permit section 3.2.2.1

3.2.1 Changes from Previous Permit:

Specific language regarding the requirements for landfilled sludge was added.

3.2.2 Explanation of Limits and Monitoring Requirements

The permittee is not required to analyze for Total Kjeldahl Nitrogen, Ammonium, Total Phosphorus, Water Extractable Phosphorus, Total Recoverable Potassium, pathogens, and vector attraction parameters unless land application of sludge is initiated. As long as landfilling is the sole disposal method, only List 1 analysis is required. The metals limits in the table above do not apply to landfilled sludge. Monitoring for landfilled sludge may remain at Annual as long as that is the sole method of disposal. If sludge is land applied the sample frequency may increase based on the amount of sludge generated in accordance with Table A in s. NR 204.06, Wis. Adm. Code, and all limits and monitoring requirements listed in the table apply.

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

4 Schedules

4.1 Phosphorus Schedule - Continued Optimization

The permittee is required to optimize performance to control phosphorus discharges per the following schedule.

Required Action	Due Date
Optimization: The permittee shall continue to implement the optimization plan as previously approved to optimize performance to control phosphorus discharges. Submit a progress report on optimizing removal of phosphorus by the Due Date.	09/30/2020
Progress Report #2: Submit a progress report on optimizing removal of phosphorus.	09/30/2021
Progress Report #3: Submit a progress report on optimizing removal of phosphorus.	09/30/2022
Progress Report #4: Submit a progress report on optimizing removal of phosphorus.	09/30/2023
Progress Report #5: Submit a progress report on optimizing removal of phosphorus.	09/30/2024

4.1.1 Explanation of Schedule

Per s. 283.16(6)(a), Wis. Stats., the Department may include a requirement that the permittee optimize the performance of a point source in controlling phosphorus discharges, which may be necessary to achieve compliance with multi-discharger variance interim limits. This compliance schedule requires the permittee to continue to implement the optimization plan that was approved during the previous permit term.

4.2 Phosphorus Payment per Pound to County

The permittee is required to make annual payments for phosphorus reductions to the participating county or counties in accordance with s. 283.16(8), Wis. Stats, and the following schedule. The price per pound will be set at the time of permit reissuance and will apply for the duration of the permit.

Required Action	Due Date
<p>Annual Verification of Phosphorus Payment to County: The permittee shall make a total payment to the participating county or counties approved by the Department by March 1 of each calendar year. The amount due is equal to the following: [(lbs of phosphorus discharged minus the permittee’s target value) times (\$53.01 per pound)] or \$640,000, whichever is less. See the payment calculation steps in the Surface Water section.</p> <p>The permittee shall submit Form 3200-151 to the Department by March 1 of each calendar year indicating total amount remitted to the participating counties to verify that the correct payment was made. The first payment verification form is due by the specified Due Date.</p>	03/31/2020
<p>Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.</p>	03/31/2021
<p>Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.</p>	03/31/2022
<p>Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.</p>	03/31/2023
<p>Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.</p>	03/31/2024
<p>Continued Coverage: If the permittee intends to seek a renewed variance, an application for the MDV (Multi Discharger Variance) shall be submitted as part of the application for permit reissuance in accordance with s. 283.16(4)(b), Wis. Stats.</p>	
<p>Annual Verification of Payment After Permit Expiration: In the event that this permit is not reissued prior to the expiration date, the permittee shall continue to submit Form 3200-151 to the Department indicating total amount remitted to the participating counties by March 1 each year.</p>	

4.2.1 Explanation of Schedule

Subsection 283.16(6)(b), Wis. Stats., requires permittees that have received approval for the multi-discharger variance (MDV) to implement a watershed project that is designed to reduce non-point sources of phosphorus within the HUC 8 watershed in which a permittee is located. The permittee has selected the “Payment to Counties” watershed option described in s. 283.16 (8), Wis. Stats. Under this option the permittee shall make annual payment(s) to participating county(s) that are calculated based on the amount of phosphorus actually discharged during a calendar year in pounds per year less the amount of phosphorus that would have been discharged had the permittee discharged phosphorus at a target value concentration of 0.2 mg/L. The pounds of phosphorus discharge in excess of the target value is multiplied by a per pound phosphorus charge that will equal \$53.01 per pound. This schedule requires the permittee to submit Form 3200-151 to the Department indicating the total amount remitted to the participating county(s).

4.3 Chloride Target Value

As a condition of the variance to the water quality based effluent limitation(s) for chloride granted in accordance with s. NR 106.83(2), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
<p>Annual Chloride Progress Report: Submit an annual chloride progress report. The annual chloride progress report shall:</p> <p>Indicate which chloride source reduction measures or activities in the approved Source Reduction Plan have been implemented;</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 influent and effluent chloride varies with time and with significant loadings of chloride such as loads from industries or road salt intrusion into the collection system.</p> <p>Note that the interim limitation of 510 mg/L, expressed as a weekly average, remains enforceable until new enforceable limits are established in the next permit issuance. The first annual chloride progress report is to be submitted by the Date Due.</p>	09/30/2020
<p>Annual Chloride Progress Report #2: Submit the chloride progress report as defined above.</p>	09/30/2021
<p>Annual Chloride Progress Report #3: Submit the chloride progress report as defined above.</p>	09/30/2022
<p>Annual Chloride Progress Report #4: Submit the chloride progress report as defined above.</p>	09/30/2023
<p>Final Chloride Report: Submit the final chloride report documenting the success in meeting the chloride target value of 460 mg/L, expressed as a weekly average, as well as the anticipated future reduction in chloride sources and chloride effluent concentrations. The report shall summarize chloride source reduction measures that have been implemented during the current permit term and state which, if any, source reduction measures from the approved Source Reduction Plan were not pursued and why. The report shall 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 covering the current permit term. The report shall also include an analysis of how influent and effluent chloride varies with time and with significant loadings of chloride such as loads from industries or road salt intrusion into the collection system.</p> <p>Additionally, the report shall include a proposed target value and source reduction measures for negotiations with the department if the permittee intends to seek a renewed chloride variance per s. NR 106.83, Wis. Adm. Code, for the reissued permit.</p> <p>Note that the target value is the benchmark for evaluating the effectiveness of the chloride source reduction measures but is not an enforceable limitation under the terms of this permit.</p>	03/31/2024
<p>Annual Chloride Reports After Permit Expiration: In the event that this permit is not reissued on time, the permittee shall continue to submit annual chloride reports each year covering source reduction measures implemented and chloride concentration and mass discharge trends.</p>	

4.3.1 Explanation of Schedule

This schedule is a condition of receiving a variance from the chronic water quality-based chloride limit of 400 mg/L, expressed as a weekly and monthly average, and 2,600 lbs/day, expressed as a weekly average. The schedule requires that annual reports shall indicate which source reduction measures Paddock Lake has implemented during each calendar year to meet the target value of 460 mg/L as a year-round weekly average, and an analysis of chloride concentration and mass

discharge data based on chloride sampling and flow data. The annual reports shall document progress made towards meeting the chloride target value by the end of the permit term.

Attachments:

Substantial Compliance Determination dated 2/27/2019 and prepared by Bryan Hartsook.

Water Quality Based Effluent Limits dated 11/19/2018 and prepared by Nick Lent.

Proposed Expiration Date:

September 30, 2024

Justification Of Any Waivers From Permit Application Requirements

No waivers were given from permit application requirements.

Prepared By: Lisa Creegan, Wastewater Specialist

Date: 4/29/2019

Revised Date post Fact Check: N/A

Revised Date post Public Notice: 9/30/2019