Village of Bay City Public Noticed Permit Fact Sheet

General Information

Permit Number	WI-0061255-07-0
Permittee Name and Address	Village of Bay City, W6275 Main St., PO Box 9, Bay City WI 54723
Permitted Facility Name and Address	Village of Bay City, West STH 35, Bay City, WI
Permit Term	April 01, 2025 to March 31, 2030
Discharge Location	the groundwaters of the Trimbelle and Isabelle Creek Watershed located in the Lower Chippewa River Basin in Pierce County
Receiving Water	Mississippi River in Trimbelle River and Isabella Creek of Chippewa River (lower) in Pierce County
Discharge Type	Existing, continuous
Annual Average Design Flow	0.073 MGD
Industrial or Commercial Contributors	No
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Village of Bay City owns and operates a wastewater treatment plant that includes an aerated lagoon system, followed by four seepage cells. A groundwater monitoring system is onsite to assess impacts of the discharge of the treated effluent to groundwater. The annual average design flow is 0.073 million gallons per day (MGD). The actual annual average influent flow in 2023 was 0.0211 MGD and the actual annual average effluent flow in 2023 was 0.0244 MGD. Groundwater limits were calculated and included in the permit based on the data collected from the monitoring wells. Significant changes since the last permit term are as follows: 1) the sample frequency for influent flow has been changed from “continuous” to “daily” for eDMR reporting purposes, 2) the BOD monitoring frequency at the influent & effluent increased from weekly to 3/week, 3) the preventative action limit (PAL) for pH, nitrogen and total dissolved solids have decreased at the three groundwater monitoring wells, and 4) a conditional exemption has been given for the PAL and enforcement standard (ES) for nitrite + nitrate. Clarification language has been added notifying the permittee they must monitor sludge for List 2 nutrients and meet the requirements of List 3 (Pathogen Control) and List 4 (Vector Attraction Reduction) prior to landspreading if they remove sludge from the pond(s). Additionally, to quantitate the risk, PFAS sludge sampling has been included in the permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code. The sludge PCB monitoring requirement has been removed. A schedule is included that requires the permittee submit a sludge management plan prior to removal and land application of sludge from the pond(s). A schedule has also been included that requires submittal of updated Land Treatment Management plan.

Substantial Compliance Determination

Enforcement During Last Permit: No enforcement actions were taken during the last permit term.

After a desk top review of discharge monitoring reports, and a site visit on 6/04/2024, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Mike Change on 06/10/2024.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	**Influent**: 0.0211 MGD (2023)	Representative influent samples shall be collected from the 5th street final lift station at N1211 5th street Bay City, WI 54723.
003	**Effluent to Seepage Cell**: 0.0244 MGD (2023)	Representative effluent samples shall be collected prior to discharge to the seepage cells located in the NW1/4 NW1/4, Section 8, T24N-R17W, Town of Isabelle, Pierce County, WI
002	**Lagoon Sludge**: Sludge last removed in 2017 due to lagoon upgrades & a one-time removal of the sludge from the lagoon. Permittee is not planning to remove sludge in the next permit term.	Representative composite sludge samples shall be collected from the primary aeration pond once in 2026 and monitored for the parameters as listed in the table below. If the permittee plans to remove sludge, they shall monitor sludge for Lists 1, 2, 3 & 4 prior to land application. The Department shall be notified at least 30 days in advance of sludge removal so that appropriate monitoring forms can be provided. Approval of landspreading sites must be completed prior to sludge removal.

Groundwater Monitoring Wells

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
Seepage Cells	801	MW-1	Down-gradient, Non-Point of Standard
Seepage Cells	802	MW-2	Down-gradient, Non-Point of Standard
Seepage Cells	803	MW-3	Up-gradient, Background

Influent – Monitoring Requirements

1.1 Sample Point Number: 701- FORCEMAIN FINAL LIFT STATION

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	Weekly	24-Hr Flow Prop Comp	
Nitrogen, Total Kjeldahl		mg/L	Monthly	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	24-Hr Flow Prop Comp	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	Organic nitrogen = total Kjeldahl nitrogen (mg/L) - ammonia nitrogen (mg/L)
Nitrogen, Nitrite + Nitrate Total		mg/L	Monthly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Monthly	Calculated	

1.1.1 Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit: 1) the sample frequency for influent flow was changed from “continuous” to “daily” for eDMR reporting purposes, 2) the BOD monitoring frequency was increased from weekly to 3/week to match the effluent BOD monitoring frequency.

1.1.2 Explanation of Limits and Monitoring Requirements

Requirements for land treatment of municipal wastewater are determined in accordance with sch. NR 206.09(2), Wis. Adm. Code. Influent flow, BOD5, organic nitrogen and ammonia nitrogen are required by s. NR 206.09(2), Wis. Adm. Code. Influent monitoring for total suspended solids (TSS) and total Kjeldahl nitrogen (TKN) is authorized by s. NR 206.09(3), Wis. Adm. Code. TSS is routinely required as an overall indicator of water quality and TKN is included to facilitate the calculation of total organic nitrogen.

2 Land Treatment – Monitoring and Limitations

2.1 Sample Point Number: 003- DISCHARGE to SEEPAGE CELLS

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total	Monthly Avg	50 mg/L	3/Week	Grab	
Suspended Solids, Total		mg/L	2/Month	Grab	
pH Field		su	Weekly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	
Nitrogen, Organic Total		mg/L	Monthly	Calculated	Organic nitrogen = total Kjeldahl nitrogen (mg/L) - ammonia nitrogen (mg/L)
Nitrogen, Nitrite + Nitrate Total		mg/L	Monthly	Grab	
Nitrogen, Total		mg/L	Monthly	Calculated	
Solids, Total Dissolved		mg/L	Quarterly	Grab	
Chloride		mg/L	Quarterly	Grab	

2.1.1 Changes from Previous Permit:

Effluent limitations and monitoring requirements were evaluated for this permit term and the only change is an increase in the BOD monitoring frequency.

2.1.2 Explanation of Limits and Monitoring Requirements

All requirements for land treatment of municipal wastewater are determined in accordance with ch. NR 206, Wis. Adm. Code. All categorical limits are based on s. NR 206.08(1) Wis. Adm. Code. More information on the limitations can be found in the Woody Myers' November 11, 2024 report titled "Village of Bay City - Groundwater Evaluation Report, WPDES Permit # WI-0061255".

The effluent monitoring frequency for all parameters with limits were considered. Monitoring frequencies are based on the size and type of the facility and are established to best characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Requirements in administrative code (NR 108, 205, 210 and 214 Wis. Adm. Code) and Section 283.55, Wis. Stats. were considered, where applicable, when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. For more information see the March 22, 2021 version of the Bureau of Water Quality Program Guidance

Document "Monitoring Frequencies for Individual Wastewater Permits". After consideration of the above factors, the BOD monitoring frequency was increased from weekly to 3/week.

3 Groundwater – Monitoring and Limitations

3.1 Groundwater Monitoring System for Seepage Cells

Location of Monitoring system: NW1/4 NW1/4, Section 8, T24N-R17W, Town of Isabelle, Pierce County, WI

Groundwater Monitoring Well(s) to be Sampled: 801 (MW-1), 802 (MW-2), 803 (MW-3)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: 803 (MW-3)

Groundwater Monitoring Well(s) Used for Point of Standards Application: None

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	N/A	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
pH Field	su	8.4	N/A	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.1	N/A	Quarterly
Solids, Total Dissolved	mg/L	580	N/A	Quarterly
Phosphorus, Total	mg/L	N/A	N/A	Quarterly

3.1.1 Changes from Previous Permit:

Groundwater limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit: 1) the preventative action limit (PAL) for pH, nitrogen and total dissolved solids have decreased at the three groundwater monitoring wells, and 2) a conditional exemption has been given for the PAL and enforcement standard (ES) for nitrite + nitrate per s. NR 140.28 Wis. Adm. Code.

3.1.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20, Wis. Adm. Code. More information on the limitations can be found in the November 11, 2024 report titled "Village of Bay City - Groundwater Evaluation Report, WPDES Permit # WI-0061255", written by Woody Myers.

4 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
002		Liquid	Lagoon sludge has not been removed from the pond(s) since 2017. Permittee does not plan to remove sludge this permit term.			
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?						
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.						

4.1 Sample Point Number: 002- POND SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Zinc Dry Wt	Ceiling	7,500 mg/kg	Once	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
Nitrogen, Total Kjeldahl		Percent	Per Application	Composite	
Nitrogen, Ammonia (NH3-N) Total		Percent	Per Application	Composite	
Phosphorus, Total		Percent	Per Application	Composite	
Phosphorus, Water Extractable		% of Tot P	Per Application	Composite	
Potassium, Total Recoverable		Percent	Per Application	Composite	
PFOA + PFOS		ug/kg	Once	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Once	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

4.1.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit:

List 2 Nutrient monitoring – Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in year 2 of the permit. Results will assist in the determination of the acres needed for land application of sludge should it be necessary.

Change in form submittal – In prior permit reissuances when it has been noted in the application that sludge would not be removed during the permit term, the department required sampling during the second year of the permit term and the sludge characteristic report (3400-049) would be generated only during that year. Due to moving to electronic submittal of forms via Switchboard, forms 3400-049 ("Characteristics Report"), 3400-052 ("Other Methods of Disposal") and 3400-055 ("Annual Land Application") will now be generated by the department and the permittee will be required to submit all three reports each year of the permit term. This change was adopted to provide the permittee flexibility because many lagoon desludging projects can be unexpected, are delayed or staggered over multiple years. Additionally, it is used to officially report that no land application of sludge has occurred, and annual submittal of the forms is required per the standard requirements section.

PFAS – Monitoring for PFAS has been added once during the permit term pursuant s. NR 204.06(2)(b)9., Wis. Adm. Code.

PCB sludge sampling has been waived this permit term because Bay City is a lagoon facility with a design flow under 0.25 MGD, they have no industrial contributors, and they sampled their sludge for PCBs during the previous permit term.

4.1.2 Explanation of Limits and Monitoring Requirements

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

PFAS- The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA is currently developing a risk assessment to determine future land application rates and expects to release this risk assessment by the end of 2024. In the interim, the department has developed the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS."

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department's implementation of EPA's recommendations. To quantitate this risk, PFAS sampling has been included in this WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

5 Schedules

5.1 Land Treatment Management Plan

A management plan is required for the land treatment system.

Required Action	Due Date
Land Treatment Management Plan Submittal: Submit an update to the management plan to optimize the land treatment system performance and demonstrate compliance with ch. NR 206, Wis. Adm. Code. The land treatment system shall be operated in accordance with the approved management plan.	06/30/2026

Explanation of Schedule: The permittee is required to have an updated and approved management plan per NR 206.07(2)(h)1 Wis. Adm. Code.

5.2 Sludge Management Plan

Required Action	Due Date
Submit a Sludge Management Plan: The permittee shall submit a management plan for approval if removal of sludge will occur during this permit term. The plan shall demonstrate compliance with ch. NR 204, Wis. Adm. Code and at minimum address 1) How and where is sludge sampled; 2) Available sludge storage details and location(s); 3) How will the sludge be removed with details on volume, characterization and how will the treatment plant continue to function during the drawdown; 4) Describe the type of transportation and spreading vehicles and loading and unloading practices; 5) Identify approved land application sites, apply for needed sites, site limitations, total acres needed and vegetative cover management; 6) Specify record keeping procedures including site loading; 7) Address contingency plans for adverse weather and odor/nuisance abatement; and 8) Include any other pertinent information such as other disposal options that may be used or specifications of any pretreatment processes Once approved, all sludge management activities shall be conducted in accordance with the plan.	

Any changes to the plan must be approved by the Department prior to implementing the changes. No desludging may occur unless approval from the Department is obtained. Daily logs shall be kept that record where the sludge has been disposed. The plan is due at least 60 days prior to desludging.	

Explanation of Sludge Management Plan Schedule: If the lagoons are to be de-sludged during this permit term, a management plan is needed to show compliance with ch NR 204, Wis. Adm. Code that clearly explains how the sludge will be safely removed, what contingencies are in place, the type of equipment that will be used and how the sludge will be land applied to ensure the proper precautions are in place to prevent any negative impacts to surface water or groundwater.

Other Comments

Publishing newspaper: Pierce County Journal, 311 Dakota Street S, PO Box 4, Prescott, WI, 54021-0004

Attachments

NR 140 Groundwater Evaluation Report: November 11, 2024 report titled "Village of Bay City - Groundwater Evaluation Report, WPDES Permit # WI-0061255", written by Woody Myers.

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Holly Heldstab, Wastewater Specialist **Date:** January 3, 2025