

# Permit Fact Sheet

## General Information

Permit Number	WI-0049832-06-0
Permittee Name and Address	VILLAGE OF MASON P O Box 44, Mason, WI 54856
Permitted Facility Name and Address	Village of Mason 59790 Cemetery Road, Mason, Wisconsin
Permit Term	July 01, 2025 to June 30, 2030
Discharge Location	Via three spray fields located in NWQ, NEQ, Section 25 and NWQ, SEQ, Section 24 within T46N0R6W.
Receiving Water	Groundwater of the White River Watershed of Lake Superior drainage basin in Bayfield County
Discharge Type	Existing seasonal discharger
Annual Average Design Flow (MGD)	0.0107 MGD
Industrial or Commercial Contributors	None
Plant Classification	A4 - Ponds, Lagoons & Natural Systems; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

## Facility Description

The Village of Mason owns and operates a domestic wastewater treatment system. The plant designed to treat 10,700 gallons per day currently treats an average of 6,580 gallons per day (2020-2024 data). The treatment system consists of one stabilization lagoon, one storage lagoon and a 18.6-acre spray irrigation system consisting of a 10.2-acre area to the west (001 - original/old area) and an 8.4-acre area to the north (004 - expansion/new area). In the stabilization lagoon, naturally occurring bacteria already in the wastewater metabolize and reduce organic waste. The clean wastewater (effluent) is held in the storage lagoon until it is discharged seasonally (June through September) to groundwater via the spray irrigation system.

## Substantial Compliance Determination

Enforcement During Last Permit: An NON was issued 2/29/2024 for lack of annual calibrations in 2020-2022. An expansion project was substantially complete on 6/16/2023 which included 8.4 acres of additional irrigation area to the north consisting of a center pivot and three additional sprinkler heads (current system included 10.2 acres). The expansion project also included installation of a shutoff valve between the lagoon and effluent lift station such that pump testing can now be performed to address annual calibration requirements (NR 218.06(1)(c)). Pump testing of the influent meter was performed during the 6/6/2024 compliance inspection site visit; procedures explained during previous site visits were used and included both influent and effluent meters.

As identified above, there have been a few minor violations of late reporting. However, this is not a chronic issue and nothing further is required at this time.

After a desk top review of all DMRs, CMARs, and related data, and a site visit on 6/6/24, by Eric deVenecia, WDNR, the Village of Mason has been found to be in substantial compliance with their current permit.

## 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	<b>INFLUENT</b> An average of 0.00658 MGD (2020-2024 data)	Representative samples shall be collected from the main lift station.
001	<b>EFFLUENT</b> – Old Spray Field An average of 0.0829 MGD over an average of 50 days per year. (2020-2024)	Treated wastewater is authorized to discharge June through September to a spray irrigation field 001 (10.2 acres) located in the NWQ, NEQ, Section 25, T46N-R6W in Mason Township, Bayfield County.
003	<b>SLUDGE</b> Selective areas of sludge were removed in 2016.	Representative samples shall be collected from the accumulated sludge in the stabilization pond at various locations and depths that are composited for analysis.
004	<b>EFFLUENT</b> – New Spray Fields New sample point.	Treated wastewater is authorized to discharge June through September to spray irrigation fields 004 (8.4 acres) located in the NWQ, SEQ, Section 24, T46N-R6W in Mason Township, Bayfield County.
101	<b>IN PLANT</b> Flow is not a required parameter.	Representative samples shall be collected in the pump building wet well before discharge to the spray irrigation system.

## Permit Requirements

### 1 Influent – Monitoring Requirements

#### 1.1 Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total		mg/L	Monthly	Grab	
Suspended Solids, Total		mg/L	Monthly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Quarterly	Grab	
Nitrogen, Organic Total		mg/L	Quarterly	Calculated	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Quarterly	Grab	

### 1.1.1 Changes from Previous Permit:

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

### 1.1.2 Explanation of Limits and Monitoring Requirements

Influent monitoring is needed to assess loading to the facility and treatment performance. The required parameters and sampling frequency are appropriate for a land treatment system as outlined in ch NR 206, Wis. Adm. Code.

## 2 Inplant - Monitoring and Limitations

### 2.1 Sample Point Number: 101- IN PLANT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
BOD5, Total	Monthly Avg	50 mg/L	Monthly	Grab	
Suspended Solids, Total		mg/L	Monthly	Grab	
pH Field		su	Monthly	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	Total Nitrogen = Total Kjeldahl Nitrogen (mg/L) + (Nitrate + Nitrite) Nitrogen (mg/L)
Chloride		mg/L	Monthly	Grab	
Solids, Total Dissolved		mg/L	Monthly	Grab	

### 2.1.1 Changes from Previous Permit:

This in-plant sample point is new this permit term. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

### 2.1.2 Explanation of Limits and Monitoring Requirements

Mason has added a second land treatment system. A new in-plant sample point has been added to monitor the land treatment effluent prior to discharge to either the existing or new spray systems. The parameters listed above have been transferred from the “Old” spray field sample point 001.

## 3 Land Treatment – Monitoring and Limitations

### 3.1 Sample Point Number: 001- OLD SPRAY FIELD and 004- NEW SPRAY FIELDS

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Total Daily	
Hydraulic Application Rate	Monthly Avg	10,000 gal/ac/day	Monthly	Calculated	The limit is effective during the spray season of June through September.
Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly	Calculated	The limit is effective during the off-season of October through May.
Nitrogen, Max Applied On Any Zone	Annual Total	240 lbs/ac/yr	Annual	Total Annual	Use the total nitrogen concentration from the in plant sample point when calculating the annual total. See the Maximum Applied Nitrogen On Any Zone permit section.
Soil - Nitrogen, Available		mg/kg	Annual	Grab	
Soil - Phosphorus, Available		mg/kg	Annual	Grab	
Soil - Potassium, Available		mg/kg	Annual	Grab	
Soil - pH Lab		su	Annual	Grab	
Other Sources of Nitrogen		lbs/ac/yr	Annual	Measure	

#### 3.1.1 Changes from Previous Permit:

Effluent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

- A new effluent **sample point 004** has been added this permit term.

- The parameters, BOD, total suspended solids, pH, total Kjeldahl nitrogen, ammonia, organic nitrogen, nitrite + nitrate, total nitrogen, chloride and total dissolved solids that were listed under 001 have been transferred to new in-plant sample point 101.
- An off-season **hydraulic application rate** (HAR) of zero was added for the months of October through April.
- **Nitrogen max applied to any zone** has been moved from the Annual Report to the permit monitoring table.
- **Soil testing** (nitrogen, phosphorus, potassium and pH) and other sources of nitrogen applied (ie fertilizer or manure) has been moved from the Annual Report to the monitoring table.

### 3.1.2 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(2) Wis. Adm. Code. More information on the limitations can be found in the “Groundwater Evaluation Report for Village of Mason, 0049832” memo dated January 29, 2025.

**Nitrogen max applied to any zone** – This parameter previously found in the Annual Report has been moved to the monitoring table. This eliminates the additional report, allowing all data to be entered into eDMRs.

**Soil testing** (available nitrogen, available phosphorus, available potassium and pH) **and other sources of nitrogen** (ie fertilizer or manure) – Annual soil monitoring of the spray field(s) is required by NR 214.14(5)(c), Wis. Adm. Code and was previously submitted through the Annual Report. These parameters have been moved to the monitoring table. This eliminates the additional report, allowing all data to be entered into eDMRs. If multiple soil tests are completed for the fields used under Outfall 001 there is a feature within the eDMRs that allows additional data to be recorded. It is asked that the additional sample points’ zones are identified in the form’s general comments section.

## 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)
003	B	Liquid	Sludge was last removed in 2016 and removal is not anticipated this permit term. If removal is needed see the land application and schedule sections of the permit for more information.			
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? All water supply is provided by private wells but levels are not expected to exceed that level because a nearby community with a public water supply (Drummond) is well below 2 pCi/liter.						
Is a priority pollutant scan required? No						

#### 4.1 Sample Point Number: 003- LAGOON 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	
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.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

- Monitoring for **List 1** (metals) is required during the 2027 calendar year.
- Because it’s recommended that **List 2** (Nutrients) are monitored with the List 1 monitoring, they have been added to the table.
- **PFAS** monitoring is required once pursuant to NR 204.06(2)(b)9., Wis. Adm. Code.
- Due to changes within the land application forms, the 3400-049 (“Characteristics Report”), 3400-052 (“Other Methods of Disposal”) and 3400-055 (Annual Land Application”) will need to be submitted each year.

#### 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.

**List 2 Nutrient monitoring** – Monitoring for List 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) during 2027. Results will assist in the determination of the acres needed for land application of sludge should it be necessary. The number of acres needed is also required for the Sludge Management Schedule (see schedules for more information).

**PFAS** - The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The department is evaluating this new information. Until a decision is made, the “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS” will be followed.

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 the proposed WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

**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.

- Sludge analysis during the second year of the permit term has been included. There are check boxes available on the electronic forms to identify if desludging didn't occur.
- Sludge characteristics report (3400-049) – at the top of the form check “yes” or “no” in the box identifying if any land application occurred that year. Complete the form if required or identify the year samples will be or have been taken in the comments section.
- 3400-052 (“Other Methods of Disposal”) and 3400-055 (“Annual Land Application”) - The reports are technically 2 separate forms that are now combined in one location but separated onto two different tabs. If you answer “No” to both listed questions the forms are complete. If you need to answer “Yes” to either question the corresponding form tabs will go from gray to blue indicating information can be entered on the report.

## 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.	09/30/2025

#### 5.1.1 Explanation of Schedule

*Land Application Management Plan* - An up-to-date Land Application Management plan is a standard requirement in reissued municipal permits per s. NR 206, Wis. Adm. Code.

### 5.2 Sludge Mapping

Required Action	Due Date
<b>Map Sludge Depth:</b> Sludge depth measurements should be taken across the ponds. A map showing the sludge profile shall be prepared and submitted.	12/31/2027

#### 5.2.1 Explanation of Schedule

*Map Sludge Depth* – The depth and distribution of the sludge in the ponds is not currently known. This information is important to determine the effectiveness of the ponds and estimate when sludge removal is needed.

### 5.3 Sludge Management Plan

A management plan is required for the land application system.

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	
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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.

### 5.3.1 Explanation of Schedule

*Sludge Management Plan* - 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. There are outlines available to assist in plan development.

## Other Comments

The Village of Mason is not required to monitor groundwater through a monitoring well(s) system. In accordance with NR 206.10(3)(c) Wis. Adm. Code, if the design flow is less than 0.015 MGD, the Department may require groundwater monitoring if there is reason to believe contamination of groundwater is occurring, which is not the case here. The WWTF influent volumes are less than the effluent volumes. Based on a preliminary engineering report from Cedar Corporation (May 2020) the higher effluent volumes are believed to be the result of precipitation falling on the lagoons. Additionally, effluent concentrations for nitrogen, chloride and BOD5 are relatively low indicating discharges to the spray irrigation systems are not likely to cause adverse environmental impact.

## Attachments

Water Flow Schematic updated March 2025

“Groundwater Evaluation Report for Village of Mason, 0049832” memo dated January 29, 2025

## Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

**Prepared By:** Sheri A. Snowbank

Wastewater Specialist

**Date:** March 20, 2025