

## Permit Fact Sheet

### General Information

Permit Number:	WI-0061191-08-0
Permittee Name:	Dodge Sanitary District No 1
Address:	PO Box 6
City/State/Zip:	Dodge WI 54625-0006
Discharge Location:	East bank of the Trempealeau River
Receiving Water:	Trempealeau River, located in the Lower Trempealeau River Watershed of the Buffalo-Trempealeau River Basin in Trempealeau County
StreamFlow (Q <sub>7,10</sub> ):	124 cfs
Stream Classification:	Warm water sport fish (WWSF) community, non-public water supply
Discharge Type:	Existing, seasonal (fill and draw 3-cell lagoon system)
Actual Average Flow	0.054 MGD
Significant Industrial Loading?	None
Plant Classification	Facility is basic will subclasses A4 – Ponds, Lagoons, and Natural System, SS – Sanitary Sewage Collection System.
Approved Pretreatment Program?	N/A

### Facility Description

The Dodge Sanitary District #1 treats domestic wastewater from the Dodge Sanitary District and the Pine Creek Sanitary District. The treatment plant is a gravity flow system which leads to a central lift station, then effluent is pumped to a three-cell lagoon system that is operated on a fill and draw basis. The annual average influent design flow of the facility is 0.019 million gallons per day (MGD).

### Substantial Compliance Determination

#### Enforcement During Last Permit:

A notice of noncompliance was issued on February 11, 2020 for effluent exceedances of phosphorus. A NOV was issued on October 28, 2021 with enforcement conference was held on November 10, 2021. An additional compliance meeting was held on December 1, 2021 which outlined next steps for the Sanitary District to achieve compliance with phosphorus limitations which included the requirement to apply for an individual phosphorus variance (IPV). The IPV application was received and formal enforcement was administratively closed in 2023. The facility has continued to violate phosphorus limits during discharge as they do not have the capabilities to treat phosphorus. Dodge Sanitary District will need to continue to explore compliance options under the variance in the next permit term.

After a desk top review of all discharge monitoring reports, CMARs, compliance schedule items, and a site visit on September 20, 2023 by Jenna Monahan, DNR Wastewater Engineer, and a desktop review on September 23, 2024 this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
701	0.019 MGD (influent design flow)	INFLUENT: Representative influent samples shall be collected either from the lift station manhole or at the influent manhole.
001	0.054 (September 2019 to December 2023)	EFFLUENT: Representative effluent samples shall be collected from the effluent manhole at the secondary cell prior to discharge.
002	N/A	SLUDGE: Representative samples shall be collected from the primary pond at various locations and depths that are composited for analysis.

## 1 Influent – Monitoring Requirements

### Sample Point Number: 701- INFLUENT TO STABILIZATION POND

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	2/Month	3-Hr Comp	
Suspended Solids, Total		mg/L	2/Month	3-Hr Comp	

#### Changes from Previous Permit:

Influent monitoring requirements were re-evaluated for the proposed permit term and flow rate sample frequency was changed to daily from continuous.

#### Explanation of Limits and Monitoring Requirements

**BOD<sub>5</sub> and Total Suspended Solids (TSS)** – Monitoring and reporting of BOD<sub>5</sub> and TSS is required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code.

## 2 Surface Water - Monitoring and Limitations

## Sample Point Number: 001- EFFLUENT TO SECONDARY CELL

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total	Weekly Avg	45 mg/L	Weekly	Grab	
BOD5, Total	Monthly Avg	30 mg/L	Weekly	Grab	
Suspended Solids, Total	Monthly Avg	60 mg/L	Weekly	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
pH Field	Daily Max	9.0 su	Daily	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	Weekly	Grab	Report the calculated variable ammonia limit the DMR year-round. See 'Daily Maximum Ammonia Limits' permit section.
Nitrogen, Ammonia Variable Limit		mg/L	Weekly	Grab	Report ammonia effluent value on the DMR year-round.
Phosphorus, Total	Monthly Avg	5.5 mg/L	Weekly	Grab	This is an interim limit effective through the permit term. See Phosphorus Variance permit section.
Phosphorus, Total		lbs/day	Weekly	Calculated	
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.

### Changes from Previous Permit

**Phosphorus:** The permittee has applied for an individual phosphorus variance (IPV) for this permit term. An IPV interim limit of 5.5 mg/L monthly average is included in this permit term.

**Total Nitrogen (TKN, Nitrite + Nitrate, and Total Nitrogen):** Addition of annual total nitrogen monitoring (TKN, NO<sub>2</sub>+NO<sub>3</sub> and Total N) in rotating quarters throughout the permit term.

## Explanation of Limits and Monitoring Requirements

**Monitoring Frequencies:** The “Monitoring Frequencies for Individual Wastewater Permits” guidance document (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state.

Taking into consideration guidance and requirements in administrative code, effluent monitoring frequencies for the Dodge Sanitary District No 1’s permit were determined to be appropriate for pollutants that have final effluent limits in effect during this permit term.

**BOD<sub>5</sub>, TSS, and pH:** Standard municipal wastewater requirements for BOD<sub>5</sub>, TSS, and pH are included based on ch. NR 210, Wis. Adm. Code, ‘Sewage Treatment Works’ requirements for discharges to fish and aquatic life streams. Tracking of BOD<sub>5</sub> 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. Chapter NR 102, Wis. Adm. Code, ‘Water Quality Standards for Surface Waters’ also specifies requirements for pH for fish and aquatic life streams.

### **Water Quality Based Limits and Disinfection:**

Refer to the “Water Quality-Based Effluent Limitations for Dodge Sanitary District No 1” dated September 3, 2024 prepared by Benjamin Hartenbower which was used for this reissuance.

**Phosphorus:** Phosphorus requirements are based on the Phosphorus Rules that became effective 12/1/2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. The code categorically limits municipal dischargers of more than 150 pounds of phosphorus per month to 1.0 mg/L unless an alternative limit is approved. NR 217 also specifies WQBELs (water quality based effluent limits) for discharges of phosphorus to surface waters of the state from publicly and privately owned wastewater facilities, noncontact cooling water discharges which contain phosphorus, concentrated animal feeding operations that discharge through alternative treatment facilities and a facility/site that is regulated under NR 216 where the standards in NR 151 and 216 are not sufficient to meet phosphorus criteria. WQBELs for phosphorus are needed whenever the discharge contains phosphorus at concentrations or loadings that will cause or contribute to an exceedance of the water quality standards.

The permittee has applied for an individual phosphorus variance in accordance with s. 283.15, Wis. Stats. Conditions for this variance include maintaining phosphorus effluent concentrations below the interim limit of 5.5 mg/L as a monthly average, implementing the Phosphorus Pollutant Minimization Program plan dated September 2023, continued optimization for control of phosphorus, and calculating, reporting and tracking phosphorus mass discharge. Since compliance with the phosphorus WQBELs has never been achieved by Dodge Sanitary District and the proposed interim limit of 5.5 mg/L represents the level currently achievable (LCA), removal of the monthly and six-month average phosphorus limits will not increase the concentration, level, or loading of phosphorus to the Trempealeau River. Therefore, antidegradation would not be applicable. If approved by EPA, compliance with state water quality standards would be met through this interim limit along with all additional phosphorus variance provisions. To be consistent with antibacksliding requirements, the current limit may be removed in accordance with s. NR 207.12(3)(b), Wis. Adm. Code.

**Total Nitrogen Monitoring (TKN, Nitrite + Nitrate, Total N):** The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under §§ 283.55(1)(e), Wis. Stats., which allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. More information on the justification to

include total nitrogen monitoring in wastewater permits can be found in the “Guidance for Total Nitrogen Monitoring in Wastewater Permits” dated October 1, 2019. Annual tests are scheduled in the following rotating quarters:

- *October – December 2025*
- *April – June 2026*
- *January – March 2027*
- *July – September 2028*
- *October – December 2029*

### 3 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	Class B	Liquid	No sludge removal has occurred.			
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						
Is a priority pollutant scan required? no						

### Sample Point Number: 002- 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	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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	Once	Composite	Once per land application.
Nitrogen, Ammonium (NH4-N) Total		Percent	Once	Composite	Once per land application.
Phosphorus, Total		Percent	Once	Composite	Once per land application.
Phosphorus, Water Extractable		% of Tot P	Once	Composite	Once per land application.
Potassium, Total Recoverable		Percent	Once	Composite	Once per land application.
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	
PCB Total Dry Wt	High Quality	10 mg/kg	Once	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.

### Changes from Previous Permit:

Sludge sampling added to the permit to comply with s. NR 204.06(2).

### Explanation of Limits and Monitoring Requirements

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

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

**Water Extractable Phosphorus-** Water extractable phosphorus (WEP) is the coefficient for determining plant available phosphorus from measured total phosphorus. In Wisconsin, the Penn State Method is utilized and is expressed in percent. While a total P may be significant, the WEP may show that only a small percentage of the P is available to plants because of factors such as treatment processes and chemical addition that “tie-up” phosphorus limiting the amount of phosphorus that is plant available. As part of the Wisconsin’s nutrient management plan (NMP) requirements, the accounting of all fertilizers must be included over the NMP cycle. The fertilizer value of the waste needs to be communicated to the farmer and accounted for in the NMP.

## 4 Schedules

### 4.1 Phosphorus Pollutant Minimization Program

As a condition of the variance to the water quality-based effluent limitation (WQBEL) for phosphorus granted in accordance with s. 283.15, Wis. Stats., the permittee shall implement the Phosphorus PMP including any subsequent updates.

Required Action	Due Date
<p><b>Annual Phosphorus Progress Report:</b> Submit an annual progress report that shall discuss which phosphorus pollutant minimization measures have been implemented during the prior calendar year. The report shall include an analysis of trends in weekly average, monthly average and annual total influent and effluent phosphorus concentrations and mass discharge of phosphorus based on phosphorus sampling and flow data.</p> <p>The report shall provide an update on the permittee's: (1) progress in implementing pollutant minimization measures, operational improvements, and minor facility modifications to optimize reductions in phosphorus discharges and, (2) status of evaluating feasible alternatives for meeting phosphorus WQBELs.</p> <p>Note that the monthly average interim limitation listed in the permit’s Surface Water section remains enforceable until new enforceable limits are established in the next permit reissuance.</p> <p>The first annual phosphorus progress report is to be submitted by the Date Due.</p>	09/30/2025
<p><b>Annual Phosphorus Progress Report #2:</b> Submit a phosphorus progress report as defined above for the previous calendar year.</p>	09/30/2026
<p><b>Annual Phosphorus Progress Report #3:</b> Submit a phosphorus progress report as defined above for the previous calendar year.</p>	09/30/2027
<p><b>Annual Phosphorus Progress Report #4:</b> Submit a phosphorus progress report as defined above for the previous calendar year.</p>	09/30/2028
<p><b>Final Phosphorus Report:</b> Submit a final report documenting the success in reducing phosphorus concentrations in the effluent, as well as the anticipated future reduction in phosphorus sources and phosphorus effluent concentrations. The report shall summarize phosphorus pollutant minimization activities that have been implemented during the current permit term and state which, if any, pollutant minimization activities from the approved pollutant minimization program plan were not pursued and</p>	09/30/2029

<p>why. The report shall include an analysis of trends in monthly and annual total influent and effluent phosphorus concentrations based on phosphorus sampling during the current permit term.</p> <p>The permittee shall also re-evaluate all available compliance options for meeting the final phosphorus WQBELs. If the report concludes Adaptive Management will be implemented, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 and an adaptive management plan. If the report concludes water quality trading will be used, the submittal shall include a Water Quality Trading Plan.</p> <p>Additionally, if the permittee intends to seek to re-apply for a phosphorus variance per s. 283.15, Wis. Stats for the reissued permit, a detailed pollutant minimization program plan outlining the pollutant minimization activities proposed for the upcoming permit term should be submitted along with the final report.</p>	
<p><b>Annual Phosphorus Progress Reports After Permit Expiration:</b> In the event that this permit is not reissued by the date the permit expires, the permittee shall continue to submit reports for the previous calendar year following the due date of annual phosphorus progress reports listed above. Annual phosphorus progress reports shall include information as defined above.</p>	

## 4.2 Sludge Management Plan

A sludge management plan is required 60 days prior to sludge removal.

Required Action	Due Date
<p><b>Sludge Management Plan Submittal:</b> 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.</p> <p>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.</p> <p>The plan is due at least 60 days prior to desludging.</p>	<p>60 days prior to sludge removal</p>

## Explanation of Schedules

### 4.1 Phosphorus Pollutant Minimization Program

This Schedule is to be implemented as a condition of the permittee's variance to water quality standards for phosphorus.

Annual phosphorus progress reports update the Department on the progress made in implementing the Pollutant Minimization Program Plan as well as quantifying reductions achieved through plant optimization and from contributing sources within the collection system.



#### **4.2 Sludge Management Plan**

If the lagoons are to be de-sludged during this permit term, a management plan needs to be submitted 60 days prior to desludging. At minimum, the plan should address how the sludge will be sampled, removed, transported, and disposed of. An outline is available to assist in plan development.

### **Special Reporting Requirements**

NA

### **Other Comments:**

NA

### **Attachments:**

Water Quality-Based Effluent Limitations for Dodge Sanitary District No 1 WPDES Permit, Dated September 3, 2024  
Phosphorus Variance Documents  
    EPA Data Sheet  
    Phosphorus PMP dated September 18, 2023

### **Expiration Date:**

**March 31, 2030**

### **Justification Of Any Waivers From Permit Application Requirements**

No waivers were requested or granted.

**Prepared By: Victoria Ziegler Wastewater Specialist**

**Date: September 12, 2024**

**CORRESPONDENCE/MEMORANDUM**

DATE: September 3, 2024  
 TO: Victoria Ziegler – SER/Waukesha  
 FROM: Benjamin Hartenbower – WCR/Eau Claire  
 SUBJECT: Water Quality-Based Effluent Limitations for Dodge Sanitary District No 1  
 WPDES Permit No. WI-0061191

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable), for the discharge from Dodge Sanitary District No 1 in Trempealeau County. This municipal wastewater treatment facility (WWTF) discharges to the Trempealeau River, located in the Lower Trempealeau River Watershed in the Buffalo - Trempealeau River Basin. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD <sub>5</sub>			45 mg/L	30 mg/L		1
TSS				60 mg/L		1
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen	Variable					3
Phosphorus Interim Final WQBEL				5.5 mg/L 0.300 mg/L	0.100 mg/L	4
TKN, Nitrate+Nitrite, and Total Nitrogen						5

Footnotes:

1. No changes from the current permit.
2. Monitoring only.
3. The variable daily maximum ammonia nitrogen limit table corresponding to effluent pH values. These limits apply year-round.

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

4. Under the phosphorus variance, the interim limit of 5.5 mg/L should be effective upon permit reissuance. The final WQBELs remain at 0.300 mg/L as a monthly average and 0.100 mg/L as a six-month average.
5. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Total Nitrogen is the sum of nitrate (NO<sub>3</sub>), nitrite (NO<sub>2</sub>), and total kjeldahl nitrogen (TKN) (all expressed as N).

Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are not required due to the non-continuous nature of the discharge.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Benjamin Hartenbower at (715) 225-4705 or Benjamin.Hartenbower@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (2) – Narrative & Map

PREPARED BY:



Benjamin Hartenbower, PE,  
Water Resources Engineer

Date: 09/03/2024

E-cc:

Jenna Monahan, Wastewater Engineer – WCR/Eau Claire  
Geisa Thielen, Regional Wastewater Supervisor – WCR/Eau Claire  
Diane Figiel, Water Resources Engineer – WY/3  
Kurt Rasmussen, Water Quality Biologist – WCR/La Crosse  
Nate Willis, Wastewater Engineer – WY/3

**Water Quality-Based Effluent Limitations for  
Dodge Sanitary District No 1  
WPDES Permit No. WI-0061191**

Prepared by: Benjamin P. Hartenbower

**PART 1 – BACKGROUND INFORMATION**

**Facility Description:**

The Dodge Sanitary District Wastewater Treatment Facility consists of a collection system, a lift station and pond system, with a primary pond and two secondary ponds. Outfall 001 discharges to the east bank of the Trempealeau River.

Attachment #2 is a map of the area showing the approximate location of Outfall 001.

**Existing Permit Limitations**

The current permit, which expired on March 31, 2024, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD <sub>5</sub>			45 mg/L	30 mg/L		1
TSS				60 mg/L		1
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen	Variable					3
Phosphorus Final QBEL				0.300 mg/L	0.100 mg/L, 0.13 lbs/day	4

Footnotes:

1. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
2. Monitoring only.
3. The variable daily maximum ammonia nitrogen limit table corresponding to effluent pH values. These limits apply year-round.

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
7.4 < pH ≤ 7.5	>34	8.2 < pH ≤ 8.3	9.4
7.5 < pH ≤ 7.6	34	8.3 < pH ≤ 8.4	7.8
7.6 < pH ≤ 7.7	29	8.4 < pH ≤ 8.5	6.4
7.7 < pH ≤ 7.8	24	8.5 < pH ≤ 8.6	5.3
7.8 < pH ≤ 7.9	20	8.6 < pH ≤ 8.7	4.4
7.9 < pH ≤ 8.0	17	8.7 < pH ≤ 8.8	3.7
8.0 < pH ≤ 8.1	14	8.8 < pH ≤ 8.9	3.1
8.1 < pH ≤ 8.2	11	8.9 < pH ≤ 9.0	2.6

4. A compliance schedule is in the current permit to meet the final QBEL by January 1, 2022.

### Receiving Water Information

- Name: Trempealeau River
- Waterbody Identification Code (WBIC): 1769900
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply.  
Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: USGS for Station 05379500, in the Trempealeau River at Dodge
  - 7-Q<sub>10</sub> = 124 cfs (cubic feet per second)
  - 7-Q<sub>2</sub> = 179 cfs
  - Harmonic Mean Flow = 163 cfs
- Hardness = 63 mg/L as CaCO<sub>3</sub>. This value represents the geometric mean of 13 samples collected in the Trempealeau River from 10/04/1988 to 05/02/1989.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%
- Source of background concentration data: Chloride data is from the Trempealeau River. Metals data from the Chippewa River at Durand is used for this evaluation. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen are described later.
- Multiple dischargers: There are several other dischargers to the Trempealeau River, however they are not in the immediate vicinity and the mixing zones do not overlap. Therefore, the other dischargers do not impact this evaluation.
- Impaired water status: The Trempealeau River is listed as impaired upstream and downstream of the outfall location for Total Phosphorus from miles 0 to 81.51 and Mercury from miles 0 to 31.28.

### Effluent Information:

- Design Flow Rates(s):  
Maximum Annual Average (Excluding zero flow days) = 0.149 MGD (Million Gallons per Day)  
For reference, the actual average flow from September 2019 to December 2023 during discharge occurrences was 0.054 MGD.
- Hardness = 193 mg/L as CaCO<sub>3</sub>. This value represents the geometric mean of 4 effluent samples collected from 04/25/2023 to 10/10/2023.
- Acute dilution factor used in accordance with s. NR 106.06 (3) (c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Water Source: Domestic wastewater with water supply from wells.
- Additives: None
- Effluent characterization: This facility is categorized as a minor municipality, so the permit application required effluent sample analyses for a limited number of common pollutants, as specified in s. NR 200.065, Table 1, Wis. Adm. Code, primarily metal substances plus Chloride and Hardness. The permit-required monitoring for Ammonia Nitrogen and Phosphorus from September 2019 to December 2023 is used in this evaluation.

Attachment #1

**Chemical Specific Effluent Data at Outfall 001**

Sample Date	Copper µg/L	Sample Date	Chloride mg/L
04/20/2023	<0.718	04/20/2023	182
04/23/2023	<0.718	04/26/2023	176
04/26/2023	<0.718	04/29/2023	176
04/29/2023	<0.718	05/03/2023	177
05/03/2023	<0.718		
05/07/2023	1.18		
05/10/2023	0.97		
09/30/2023	<0.718		
10/07/2023	<0.718		
10/10/2023	<0.718		
11/22/2023	2.7		
11/26/2023	<0.718		
mean	0.40	mean	178

“<” means that the pollutant was not detected at the indicated level of detection. The mean concentration was calculated using zero in place of the non-detected results.

Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2 below, in the column titled “MEAN EFFL. CONC.”.

The following table presents the average concentrations and loadings at Outfall 001 from September 2019 to December 2023 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6):

**Parameter Averages with Limits**

	Average Measurement	Average Mass Discharged
BOD <sub>5</sub>	3.1 mg/L*	
TSS	10.6 mg/L*	
pH	7.65 s.u.	
Ammonia Nitrogen	2.59 mg/L*	
Phosphorus	3.66 mg/L	3.19 lbs/day

\*Results below the level of detection (LOD) were included as zeroes in calculation of average.

**PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS**

Attachment #1  
**FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN**

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99<sup>th</sup> percentile (or P<sub>99</sub>) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. If fewer than 11 detected results are available, the mean effluent concentration exceeds 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

**Acute Limits based on 1-Q<sub>10</sub>**

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q<sub>10</sub> receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(\text{WQC}) (Q_s + (1-f) Q_e) - (Q_s - f Q_e) (C_s)}{Q_e}$$

Where:

WQC = Acute toxicity criterion or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Q<sub>s</sub> = average minimum 1-day flow which occurs once in 10 years (1-day Q<sub>10</sub>)  
if the 1-day Q<sub>10</sub> flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q<sub>10</sub>).

Q<sub>e</sub> = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

C<sub>s</sub> = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q<sub>10</sub> method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is not the case for the Dodge Sanitary District No 1 and the limits are set based on two times the acute toxicity criteria.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling. All concentrations are expressed in terms of micrograms per Liter (µg/L), except for hardness and chloride (mg/L).

**Daily Maximum Limits based on Acute Toxicity Criteria (ATC)**

Attachment #1

RECEIVING WATER FLOW = 99 cfs, (1-Q<sub>10</sub> (estimated as 80% of 7-Q<sub>10</sub>)), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. mg/L	ATC	MEAN BACK-GRD.	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P <sub>99</sub>	1-day MAX. CONC.
Arsenic		340		680	136	2		
Cadmium	193	21.9	0.0103	43.8	8.8	<0.19		
Chromium (+3)	193	3089	1.955	6177	1235	<1.1		
Copper	193	28.8	7.635	57.7			3.4	2.7
Lead	193	202	4.475	404	81	<4.3		
Nickel	193	818	5.567	1636	327	<1.2		
Zinc	193	214	7.473	428	86			
Chloride		757	14.6	1514			185	182

\* \* The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q<sub>10</sub> flow rates per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016.

**Weekly Average Limits based on Chronic Toxicity Criteria (CTC)**

RECEIVING WATER FLOW = 31 cfs (¼ of the 7-Q<sub>10</sub>), as specified in s. NR 106.06(4)(c), Wis. Adm. Code.

SUBSTANCE	REF. HARD.* mg/L	CTC	MEAN BACK-GRD.	MAX. EFFL. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P <sub>99</sub>
Arsenic		152		20679	4136	2	
Cadmium	63	1.7	0.0103	232.5	46.5	<0.19	
Chromium (+3)	63	91	1.955	12093	2419	<1.1	
Copper	63	7.0	7.635	7.0			1.7
Lead	63	18	4.475	1846	369	<4.3	
Nickel	63	35	5.567	4071	814	<1.2	
Zinc	63	81	7.473	9970	1994		
Chloride		395	14.6	51703			181

**Monthly Average Limits based on Wildlife Criteria (WC)**

The effluent characterization did not include any effluent sampling results for substances for which Wildlife Criteria exist.

**Monthly Average Limits based on Human Threshold Criteria (HTC)**

RECEIVING WATER FLOW = 41 cfs (¼ of the Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MAX. EFFL. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P <sub>99</sub>
Cadmium	370.0	0.0103	65962.3	13192.5	<0.19	
Chromium (+3)	3818000	1.955	680678605	136135721	<1.1	
Lead	140	4.475	24166	4833	<4.3	
Nickel	43000	5.567	7665120	1533024	<1.2	

**Monthly Average Limits based on Human Cancer Criteria (HCC)**



Attachment #1

RECEIVING WATER FLOW = 41 cfs (1/4 of the Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P <sub>99</sub>
Arsenic	13.3		2371.1	474.2	2	

In addition to evaluating the need for limits for each individual substance for which HCC exist, s. NR 106.06(8), Wis. Adm. Code, requires the evaluation of the cumulative cancer risk. Because no effluent limits are needed based on HCC, determination of the cumulative cancer risk is not needed per s. NR 106.06(8), Wis. Adm. Code.

**Conclusions and Recommendations:** Based on a comparison of the effluent data and calculated effluent limitations, limits are not required for toxic substances.

PFOS and PFOA

The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98, Wis. Adm. Code. PFOS and PFOA were not detected in the water supply. Based on the annual design flow and lack of nondomestic contributions, it is unlikely that the effluent will contain PFOS or PFOA. **Therefore, monitoring is not recommended.** If information becomes available that indicates PFOS or PFOA may be present in the effluent, the monitoring requirements may change.

Mercury – The permit application did not require monitoring for mercury because Dodge Sanitary District No 1 is categorized as a minor facility as defined in s. NR 200.02(8), Wis. Adm. Code. In accordance with s. NR 106.145(3)(a)3., Wis. Adm. Code, a minor municipal discharger shall monitor, and report results of influent and effluent mercury monitoring once every three months if, there are two or more exceedances in the last five years of the high-quality sludge mercury concentration of 17 mg/kg specified in s. NR 204.07(5). However, since Dodge Sanitary District No 1 is a lagoon system that has not had sludge removed and sampling is not available. It is not expected that there are exceedances of the high-quality mercury concentration based on similar municipal treatment plants and the lack of industries. **No monitoring is recommended.**

**PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN**

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. The current permit has daily maximum limits. These limits are re-evaluated at this time due to the following changes:

- Subchapter IV of ch. NR 106, Wis. Adm. Code allows limits based on available dilution instead of limits set to twice the acute criteria.
- The maximum expected effluent pH has changed

**Daily Maximum Limits based on Acute Toxicity Criteria (ATC):**

Daily maximum limitations are based on acute toxicity criteria in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The acute toxicity criterion (ATC) for ammonia is calculated using the following equation.

$$ATC \text{ in mg/L} = [A \div (1 + 10^{(7.204 - pH)})] + [B \div (1 + 10^{(pH - 7.204)})]$$

Where:

A = 0.411 and B = 58.4 for a Warm Water Sport fishery, and  
 pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 183 sample results were reported from September 2019 to October 2023. The maximum reported value was 9.00 s.u. (Standard pH Units). The effluent pH was 9.00 s.u. or less 99% of the time. The 1-day P<sub>99</sub>, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 9.81 s.u. The mean plus the standard deviation multiplied by a factor of 2.33, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 9.61 s.u. Therefore, a value of 9.81 s.u. is believed to represent the maximum reasonably expected pH, and therefore most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 9.81 s.u. into the equation above yields an ATC = 0.55 mg/L.

**Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method**

In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are calculated using the 1-Q<sub>10</sub> receiving water low flow if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q<sub>10</sub> (estimated as 80 % of 7-Q<sub>10</sub>) and the 2×ATC approach are shown below.

**Daily Maximum Ammonia Nitrogen Determination**

	Ammonia Nitrogen Limit mg/L
2×ATC	1.11
1-Q <sub>10</sub>	210

The 2×ATC method yields the most stringent limits for Dodge Sanitary District No 1.

The current permit has variable daily maximum effluent limits based on effluent pH. Presented below is a table of daily maximum limitations corresponding to various effluent pH values. The table has been

expanded from the table in the current permit to included ammonia nitrogen limits throughout the pH range.

**Daily Maximum Ammonia Nitrogen Limits – WWSF**

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

**Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)**

The ammonia limit calculation also warrants evaluation of weekly and monthly average limits based on chronic toxicity criteria for ammonia, since those limits relate to the assimilative capacity of the receiving water.

Weekly average and monthly average limits for ammonia nitrogen are based on chronic toxicity criteria in ch. NR 105, Wis. Adm. Code.

The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as Warm Water Sport Fish Community is calculated by the following equation, according to subchapter IV of NR 106, Wis. Adm. Code.

$$CTC = E \times \{ [0.0676 \div (1 + 10^{(7.688 - pH)})] + [2.912 \div (1 + 10^{(pH - 7.688)})] \} \times C$$

Where:

pH = the pH (s.u.) of the receiving water,

E = 0.854,

C = the minimum of 2.85 or  $1.45 \times 10^{(0.028 \times (25 - T))}$  – (Early Life Stages Present), or

C =  $1.45 \times 10^{(0.028 \times (25 - T))}$  – (Early Life Stages Absent), and

T = the temperature (°C) of the receiving water – (Early Life Stages Present), or

T = the maximum of the actual temperature (°C) and 7 - (Early Life Stages Absent)

The 4-day criterion is equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q<sub>10</sub> (4-Q<sub>3</sub>, if available) to derive weekly average limitations. And the 30-day criteria are used with the 30-Q<sub>5</sub> (estimated as 85% of the 7-Q<sub>2</sub> if the 30-Q<sub>5</sub> is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature; 100% of the flow is used if the Temperature ≥ 16 °C, 25% of the flow is used if the Temperature < 11 °C, and 50% of the flow is used if the Temperature ≥ 11 °C but < 16 °C.

The “default” basin assumed values are used for temperature and background ammonia concentrations, because minimum ambient data is available. The values for pH are based on data collected from the

Trempealeau River. These values are shown in the table below, with the resulting criteria and effluent limitations.

**Weekly and Monthly Ammonia Nitrogen Limits – WWSF**

		<b>April &amp; May</b>	<b>June-September</b>	<b>October-December</b>
<b>Effluent Flow</b>	Qe (MGD)	0.149	0.149	0.149
<b>Background Information</b>	7-Q <sub>10</sub> (cfs)	124	124	124
	7-Q <sub>2</sub> (cfs)	179	179	179
	Ammonia (mg/L)	0.07	0.07	0.06
	Temperature (°C)	14.4	20.6	10.0
	pH (s.u.)	7.84	7.81	7.93
	% of Flow used	50	100	25
	Reference Weekly Flow (cfs)	62	124	31
	Reference Monthly Flow (cfs)	76	152	38
<b>Criteria mg/L</b>	4-day Chronic			
	Early Life Stages Present	7.57	5.33	6.69
	Early Life Stages Absent	7.60	5.33	8.96
	30-day Chronic			
	Early Life Stages Present	3.03	2.13	2.68
	Early Life Stages Absent	3.04	2.13	3.58
<b>Effluent Limitations mg/L</b>	Weekly Average			
	Early Life Stages Present	2029	2842	
	Early Life Stages Absent			1209
	Monthly Average			
	Early Life Stages Present	981	1367	
	Early Life Stages Absent			587

**Effluent Data**

The following table evaluates the statistics based upon ammonia data reported from September 2019 to October 2023, with those results being compared to the calculated limits to determine the need to include ammonia limits in the Dodge Sanitary District No 1 permit for the respective month ranges.

**Ammonia Nitrogen Effluent Data**

<b>Ammonia Nitrogen mg/L</b>	<b>April &amp; May</b>	<b>June-September</b>	<b>October-December</b>
1-day P <sub>99</sub>	N/A	N/A	12.62
4-day P <sub>99</sub>	N/A	N/A	6.91
30-day P <sub>99</sub>	N/A	N/A	3.73
Mean*	3.93	2.29	2.41
Std	1.73	2.51	2.62
Sample size	4	6	20
Range	2.086 - 5.823	<0.07 - 7.126	<0.13 - 9.89

\*Values lower than the level of detection were substituted with a zero.

Based on this comparison, daily limits are required year-round.

**Conclusions and Recommendations**

In summary, the recommendation is to expand the variable daily maximum ammonia nitrogen limit table throughout the pH range. These limits apply year-round. No mass limitations are recommended in accordance with s. NR 106.32(5), Wis. Adm Code.

**Final Ammonia Nitrogen Limits**

Daily Maximum mg/L	Weekly Average mg/L	Monthly Average mg/L
Variable		

**PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA**

Section NR 102.04(5), Wis. Adm. Code, states that all surface waters shall be suitable for supporting recreational use and shall meet *E. coli* criteria during the recreation season. Section NR 102.04(5)(b), Wis. Adm. Code, allows the Department to make exceptions when it determines, in accordance with s. NR 210.06(3), Wis. Adm. Code, that wastewater disinfection is not required to meet *E. coli* limits and protect the recreational use. Section NR 210.06(3), Wis. Adm. Code, tasks the Department with determining the need for disinfection using a site-specific analysis based on potential risk to human or animal health. It sets out the factors that must be considered in determining the necessity to disinfect municipal wastewater or to change the length of the disinfection season.

1. The geometric mean of *E. coli* bacteria in effluent samples collected in any calendar month may not exceed 126 counts/100 mL.
2. No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 counts/100 mL.

The last permit term’s flow data shows that, as a rolling average, > 180-d detention time was provided at all times during the permit term. The greatest 180 day rolling average at Outfall 001 was 0.0205 MGD (April to October 2023). Using a total pond volume of 5,333,240 gallons, the minimum detention time was 260 days. Since data shows that the facility provides > 180-d detention time, **disinfection is not required and effluent limits and monitoring are not needed in the permit.**

**PART 5 – PHOSPHORUS**

**Technology-Based Effluent Limit**

Subchapter II of Chapter NR 217, Wis. Adm. Code, requires municipal wastewater treatment facilities that discharge greater than 150 pounds of Total Phosphorus per month to comply with a monthly average limit of 1.0 mg/L, or an approved alternative concentration limit.

Because Dodge Sanitary District No 1 does not currently have an existing technology-based limit, the need for this limit in the reissued permit is evaluated. The data demonstrates that the annual monthly average phosphorus loading is less than 150 lbs/month, which is the threshold for municipalities in accordance to s. NR 217.04(1)(a)1, Wis. Adm. Code, and therefore a technology-based limit is not required.

**Annual Average Mass Total Phosphorus Loading**

Month	Monthly Avg. mg/L	Total Flow MG/month	Total Phosphorus lb./mo.
Sep 2020	4.58	0.49	18.56
Oct 2020	3.00	1.67	41.81
Nov 2020	1.55	0.40	5.13
Oct 2021	4.39	1.19	43.53
Nov 2021	3.32	0.66	18.32
Oct 2022	3.77	0.51	16.01
Nov 2022	4.42	0.01	0.25
Apr 2023	3.39	0.44	12.45
May 2023	3.24	0.01	0.16
Jun 2023	8.70	0.11	7.62
Sep 2023	5.39	0.50	22.53
Oct 2023	2.76	3.06	70.41
Average =			<b>21.40</b>

Total P (lbs/month) = Monthly average (mg/L) × total flow (MG/month) × 8.34 (lbs/gallon)  
 Where total flow is the sum of the actual (not design) flow (in MGD) for that month

In addition, the need for a WQBEL for phosphorus must be considered.

**Water Quality-Based Effluent Limits (WQBEL)**

Revisions to administrative rules regulating phosphorus took effect on December 1, 2010. These rule revisions include additions to s. NR 102.06, Wis. Adm. Code, which establish phosphorus standards for surface waters. Subchapter III of NR 217, Wis. Adm. Code, establishes procedures for determining WQBELs for phosphorus, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.100 mg/L applies for the Trempealeau River.

The conservation of mass equation is described in s. NR 217.13(2)(a), Wis. Adm. Code, for phosphorus WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs),

effluent flow rate (Qe), and upstream phosphorus concentrations (Cs) provided below.

$$\text{Limitation} = [(WQC)(Q_s + (1-f) Q_e) - (Q_s - f Q_e) (C_s)] / Q_e$$

Where:

WQC = 0.100 mg/L for the Trempealeau River.

Qs = 100% of the 7-Q2 of 179 cfs

Cs = background concentration of phosphorus in the receiving water pursuant to s. NR 217.13(2)(d), Wis. Adm. Code

Qe = effluent flow rate = 0.019 MGD = 0.029 cfs

f = the fraction of effluent withdrawn from the receiving water = 0

Section NR 217.13(2)(d), Wis. Adm. Code, specifies that the background phosphorus concentration used in the limit calculation formula shall be calculated using the procedures specified in s. NR 102.07(1)(b) to (c), Wis. Adm. Code. The median shall be calculated with at least one year of data using samples collected once per month during the period of May through October. All representative data from the most recent 5 years shall be used, but data from the most recent 10 years may be used if representative of current conditions.

The following data were considered in estimating the background phosphorus concentration:

SWIMS ID	623039
Station Name	Monitoring station at Trempealeau River at Cth P
Waterbody	Trempealeau River
Sample Count	33
First Sample	09/16/2019
Last Sample	07/15/2024
Mean	0.388 mg/L
Median	0.319 mg/L

Substituting a background concentration above criteria into the limit calculation equation above would result in a calculated limit that is less than the applicable criterion of 0.100 mg/L. However, s. NR 217.13(7), Wis. Adm. Code, specifies that “if the water quality-based effluent limitation calculated pursuant to the procedures in this section is less than the phosphorus criterion specified in s. NR 102.06, Wis. Adm. Code, for the water body, the effluent limit shall be set equal to the criterion.”

The impaired water listing of the Trempealeau River also points towards the notion that effluent phosphorus limits equal to the water quality criterion are needed to prevent the discharge from contributing to further impairment of the receiving water. The Guidance for Implementing Wisconsin’s Phosphorus Water Quality Standards for Point Source Discharges (2020) suggests setting effluent limits equal to the criterion in the absence of an EPA approved total maximum daily load for discharges of phosphorus to phosphorus impaired waters.

**Effluent Data**

The following table summarizes effluent total phosphorus monitoring data from September 2019 to July

2024.

**Phosphorus Effluent Data**

	<b>Phosphorus mg/L</b>
1-day P <sub>99</sub>	7.70
4-day P <sub>99</sub>	5.45
30-day P <sub>99</sub>	4.28
Mean	3.69
Std	1.30
Sample size	31
Range	1.55 - 8.7

**Reasonable Potential Determination**

Since the 30-day P<sub>99</sub> of reported effluent total phosphorus data is greater than the calculated WQBEL, the discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion. Therefore, a WQBEL is required.

In accordance with s. NR 217.15(2), Wis. Adm. Code, there is reasonable potential for the discharge to cause or contribute to an exceedance of the water quality criteria. The data suggest that a compliance schedule will be necessary for the facility to meet the given phosphorus limits.

**Limit Expression**

According to s. NR 217.14 (2), Wis. Adm. Code, because the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of 0.100 mg/L may be expressed as a six-month average. If a concentration limitation expressed as a six-month average is included in the permit, a monthly average concentration limitation of 0.300 mg/L, equal to three times the WQBEL calculated under s. NR 217.13, Wis. Adm. Code shall also be included in the permit. The six-month average should be averaged during the months of May – October and November – April.

**Mass Limits**

Because the discharge is to a surface water that is to or upstream of a phosphorus impaired water, a mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code. This final mass limit shall be  $0.100 \text{ mg/L} \times 8.34 \times 0.149 \text{ MGD} = 0.124 \text{ lbs/day}$  expressed as a six-month average.

**Variance Request**

The facility has applied for an individual variance under s. 283.15, Wis. Stats. Eligibility for the variance is not included as part of this review. An interim limit, calculated using the 4-day P<sub>99</sub>, represents the Level Currently Achievable at Dodge Sanitary District. If a variance is granted and approved by US Environmental Protection Agency, **an interim limit of 5.5 mg/L may be included in the permit.**

**Antidegradation & Antibacksliding**



Attachment #1

Since compliance with the phosphorus WQBELs has never been achieved by Dodge Sanitary District and the proposed interim limit of 5.5 mg/L represents the level currently achievable (LCA), removal of the monthly and six-month average phosphorus limits will not increase the concentration, level, or loading of phosphorus to the Trempealeau River. Therefore, antidegradation would not be applicable. If approved by EPA, compliance with state water quality standards would be met through this interim limit along with all additional phosphorus variance provisions. To be consistent with antidegradation requirements, the current limit may be removed in accordance with s. NR 207.12(3)(b), Wis. Adm. Code.

## **PART 6 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL**

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

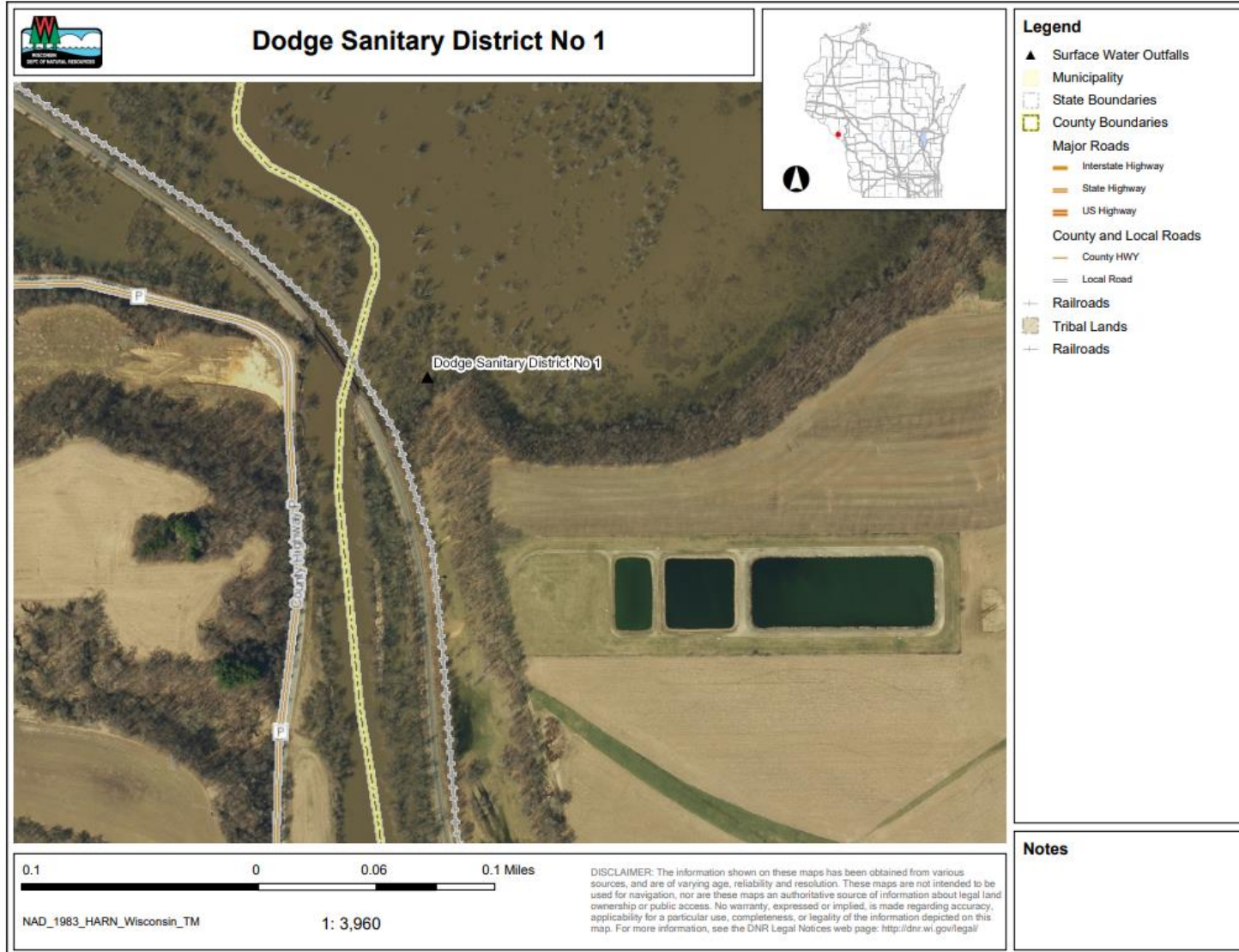
Due to the amount of upstream flow available for dilution in the limit calculation ( $Q_s:Q_e > 20:1$ ), the lowest calculated limitation is 120° F (s. NR 106.55(6)(a), Wis. Adm. Code). For lagoon treatment systems of domestic waste, there is no reasonable potential for the discharge to exceed this limit.

**Therefore, no temperature limits or monitoring are recommended.**

## **PART 7 – WHOLE EFFLUENT TOXICITY (WET)**

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the *Whole Effluent Toxicity (WET) Program Guidance Document (2022)*.

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC50 (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm. Code.
- Chronic testing is usually not recommended where the ratio of the 7-Q<sub>10</sub> to the effluent flow exceeds 100:1 and acute testing is not typically recommended if the ratio exceeds 1000:1. For Dodge Sanitary District No 1, that ratio is approximately 4309:1. With this amount of dilution, there is believed to be little potential for acute or chronic toxicity effects in the Trempealeau River associated with the discharge from Dodge Sanitary District No 1, so the need for acute and chronic WET testing will not be considered further.



# Facility Specific Phosphorus Variance Data Sheet

**Directions:** Please complete this form electronically. Record information in the space provided. Select checkboxes by double clicking on them. Do not delete or alter any fields. For citations, include page number and section if applicable. Please ensure that all data requested are included and as complete as possible. Attach additional sheets if needed.

## Section I: General Information

<b>A. Name of Permittee:</b> Dodge Sanitary District No 1			
<b>B. Facility Name:</b> Dodge Sanitary District No 1			
<b>C. Submitted by:</b> Wisconsin Department of Natural Resources			
<b>D. State:</b> Wisconsin	<b>Substance:</b> Phosphorus	<b>Date completed:</b> October 2, 2024	
<b>E. Permit #:</b> Wi-0061191-08-0	<b>WQSTS #:</b>	(EPA USE ONLY)	
<b>F. Duration of Variance</b>	<b>Start Date:</b> April 1, 2025	<b>End Date:</b> March 31, 2030	
<b>G. Date of Variance Application:</b> December 29, 2022			
<b>H. Is this permit a:</b>			
<input checked="" type="checkbox"/> First time submittal for variance <input type="checkbox"/> Renewal of a previous submittal for variance <i>(Complete Section X)</i>			

### I. Description of proposed variance:

Dodge Sanitary District No 1 has applied for a variance from the total phosphorus water quality standard found in s NR 102.06, Wis. Adm. Code, of 0.100 mg/L for the Trempealeau River. The water quality based effluent limits (WQBELs) calculated pursuant to s. NR 217.13, Wis. Adm. Code, are 0.300 mg/L as a monthly average and 0.100 mg/L as six-month averages.

The effluent phosphorus concentration for this discharge is 4.28 mg/L (30-day 99th percentile) from September 2019 – July 2024.

### J. List of all who assisted in the compilation of data for this form

Name	Email	Phone	Contribution
Victoria Ziegler	<a href="mailto:Victoria.Ziegler@wisconsin.gov">Victoria.Ziegler@wisconsin.gov</a>	414-391-8946	Permit Drafter
Jenna Monahan	<a href="mailto:Jenna.monahan@wisconsin.gov">Jenna.monahan@wisconsin.gov</a>	715-492-4323	Compliance Engineer
Ben Hartenbower	<a href="mailto:Benjamin.Hartenbower@wisconsin.gov">Benjamin.Hartenbower@wisconsin.gov</a>	715-225-4705	Parts II D-H and K-N, III G-H

## Section II: Criteria and Variance Information

<b>A. Water Quality Standard from which variance is sought:</b> Phosphorus 0.100 mg/L			
<b>B. List other criteria likely to be affected by variance:</b> none			
<b>C. Source of Substance:</b>			
<p>Dodge Sanitary District No 1 discharges to the Trempealeau River in the Trempealeau Rive Watershed. According to the Pollutant Load Road Estimation Tool (PRESTO) model, 98% of the phosphorus in the 648 square mile watershed entering the Trempealeau River is attributed from nonpoint sources. That total annual average nonpoint phosphorus loading is 390,280 lbs/ year. The Dodge Sanitary District No 1's average annual phosphorus between 2010 and 2012 was 100 lbs/year. (See PRESTO report).</p> <p><b>Citation:</b> PRESTO is a statewide GIS-based tool that compares the average annual phosphorus loads originating from point and nonpoint sources within a watershed. More information about this model is available at <a href="http://dnr.wi.gov/topic/surfacewater/presto.html">http://dnr.wi.gov/topic/surfacewater/presto.html</a>.</p>			
<b>D. Ambient Substance Concentration:</b> 0.319 mg/L		<input checked="" type="checkbox"/> Measured	<input type="checkbox"/> Estimated
		<input type="checkbox"/> Default	<input type="checkbox"/> Unknown
<b>E. If measured or estimated, what was the basis? Include citation.</b>			
<p>The ambient concentration of 0.319 mg/L is the median phosphorus concentration for 33 samples collected during May and October from 9/16/2019 to 7/15/2024 in the Trempealeau River at Station 623039 (Cth P)</p>			

<b>F. Average effluent discharge rate:</b> 0.054 MGD (09/17/2019 to 10/23/2023, excluding zero flow days)		<b>Maximum effluent discharge rate:</b> 0.501 (09/30//2023)	
<b>G. Effluent Substance Concentration:</b>		<input checked="" type="checkbox"/> <b>Measured</b>	<input type="checkbox"/> <b>Estimated</b>
Mean = 3.69 mg/L,		<input type="checkbox"/> <b>Default</b>	<input type="checkbox"/> <b>Unknown</b>
1-day P99 = 7.70 mg/L,			
4-day P99 = 5.45 mg/L,			
30-day P99 = 4.28 mg/L			
<b>H. If measured or estimated, what was the basis? Include Citation.</b> Effluent data reported during September 2019 – July 2024 (n = 31).			
<b>I. Type of HAC:</b>		<input type="checkbox"/> <b>Type 1: HAC reflects waterbody/receiving water conditions</b>	
		<input type="checkbox"/> <b>Type 2: HAC reflects achievable effluent conditions</b>	
		<input checked="" type="checkbox"/> <b>Type 3: HAC reflects current effluent conditions</b>	
<b>J. Statement of HAC:</b>			
<p>The Department has determined the highest attainable condition of the receiving water is achieved through the application of the variance limit in the permit, combined with a permit requirement that the permittee implement its phosphorus PMP. Thus, the HAC at the commencement of this variance is 5.5 mg/L, which reflects the greatest phosphorus reduction achievable with the current treatment process, in conjunction with the implementation of the permittee’s phosphorus PMP. The current effluent condition is reflective of on-site optimization measures that have already occurred.</p> <p>This HAC determination is based on the economic feasibility of available compliance options for Dodge at this time (See Economic Section below). The permittee may seek to renew this variance in the subsequent reissuance of this permit; the Department will reevaluate the HAC in its review of such a request. A subsequent HAC cannot be defined as less stringent than this HAC.</p>			
<b>K. Variance Limit :</b> 5.5 mg/L monthly average			
<b>L. Level currently achievable (LCA):</b> 5.5 mg/L monthly average			
<b>M. What data were used to calculate the LCA, and how was the LCA derived? (Immediate compliance with LCA is required.)</b>			
The LCA was based on best professional judgment after reviewing effluent data from September 2019 – July 2024. The 4-day P99 during that period was 5.45 mg/L.			
<b>N. Explain the basis used to determine the variance limit (which must be ≤ LCA). Include citation.</b>			
Data from September 2019 – July 2024 were evaluated as the basis for determining the interim limit. The 30-day P99 of this data was 4.28 mg/L. This value was not chosen as an interim limit because the monthly average exceeded this value 42% of the time. As an alternate approach, 4-day P99 was evaluated. This analysis resulted in a value of 5.45 mg/L. Therefore a rounded interim limit of 5.5 mg/L was recommended.			
<b>O. Select all factors applicable as the basis for the variance provided under 40 CFR 131.10(g). Summarize justification below:</b>		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input checked="" type="checkbox"/> 6	
The permittee evaluated compliance options and determined that all options will cause economic hardship on the community.			
<b>Citation:</b> Final Phosphorus Compliance Alternatives Evaluation Dodge Sanitary District, April 20, 2022			
<b>Section III: Location Information</b>			
<b>A. Counties in which water quality is potentially impacted:</b>		Trempealeau County	
<b>B. Receiving waterbody at discharge point:</b>		Trempealeau River	
<b>C. Flows into which stream/river?</b>		<b>How many miles downstream?</b>	~7.65 miles
Mississippi River			
<b>D. Coordinates of discharge point (UTM or Lat/Long):</b>		Lat: 44.14074 N ; Long: 91.55784 W	
<b>E. What are the designated uses associated with this waterbody?</b>			
Fish and aquatic life (default)			
<b>F. Describe downstream waters:</b>			

The Trempealeau River is a warm water sport fish community and is a non-public water supply. The Trempealeau River empties into the Mississippi River. The Trempealeau River is listed as impaired upstream and downstream of the outland location for total phosphorus and mercury.

**G. What is the distance from the point of discharge to the point downstream where the concentration of the substance falls to less than or equal to the applicable criterion of the substance?**

N/A: The Trempealeau River is above the phosphorus criterion at the discharge location and is impaired for total phosphorus from River Mile 0.0 through 81.51 as well as the Mississippi River.

**H. Provide the equation used to calculate that distance.**

N/A: Direct measurement of distance.

**I. Identify all other variance permittees for the same substance which discharge to the same stream, river, or waterbody in a location where the effects of the combined variances would have an additive effect on the waterbody:**

There are several other dischargers to the Trempealeau River, however they are not in the immediate vicinity, none with phosphorus variances, and the mixing zones do not overlap.

**Please attach a map, photographs, or a simple schematic showing the location of the discharge point as well as all variances for the substance currently draining to this waterbody on a separate sheet.**

**J. Is the receiving waterbody on the CWA 303(d) list? If yes, please list the impairments below.**  Yes  No  Unknown

River Mile	Pollutant	Impairment
0 – 31.28	Total phosphorus; mercury	High phosphorus levels, mercury contaminated fish tissue
31.28 – 51.72	Total phosphorus, E. coli	High phosphorus levels, recreational restrictions
51.72 – 81.51	Total phosphorus	High phosphorus levels

**Section IV: Pretreatment** (complete this section only for POTWs with DNR-Approved Pretreatment Programs. See w:\Variances\Templates and Guidance\Pretreatment Programs.docx)

**A. Are there any industrial users contributing phosphorus to the POTW? If so, please list.**

None.

**B. Are all industrial users in compliance with local pretreatment limits for phosphorus? If not, please include a list of industrial users that are not complying with local limits and include any relevant correspondence between the POTW and the industry (NOVs, industrial SRM updates and timeframe, etc)**

NA

**C. When were local pretreatment limits for phosphorus last calculated?**

NA

**D. Please provide information on specific SRM activities that will be implemented during the permit term to reduce the industry's discharge of the variance pollutant to the POTW**

NA

**Section V: Public Notice**

**A. Has a public notice been given for this proposed variance?**

Yes  No

**B. If yes, was a public hearing held as well?**

Yes  No  N/A

**C. What type of notice was given?**

Notice of variance included in notice for permit  Separate notice of variance

**D. Date of public notice: \_\_\_\_\_ Date of hearing: \_\_\_\_\_**

**E. Were comments received from the public in regards to this notice or hearing?**

*(If yes, please attach on a separate sheet)*

Yes  No

**Section VI: Human Health**

**A. Is the receiving water designated as a Public Water Supply?**

Yes  No

<b>B. Applicable criteria affected by variance:</b> NA
<b>C. Identify any expected impacts that the variance may have upon human health, and include any citations:</b> None.
<b>Section VII: Aquatic Life and Environmental Impact</b>
<b>A. Aquatic life use designation of receiving water:</b> Fish and aquatic life (default)
<b>B. Applicable criteria affected by variance:</b> phosphorus 0.100 mg/L
<b>C. Identify any environmental impacts to aquatic life expected to occur with this variance, and include any citations:</b> none
<b>D. List any Endangered or Threatened species known or likely to occur within the affected area, and include any citations:</b> Higgins Eye ( <i>Lampsilis hagginsii</i> ) – federally listed endangered Regal Fritillary ( <i>Speyeria idalia</i> ) – federally proposed threatened
<b>Section VIII: Economic Impact and Feasibility</b>
<b>A. Describe the permittee's current pollutant control technologies (treatment processes):</b>  Dodge Sanitary District is a gravity flow system that leads to a central lift station where effluent is then pumped to a three-cell lagoon system. The facility is operated as a fill and draw system with discharge typically in the spring and fall.
<b>B. What modifications would be necessary to comply with the current limits? List additional treatment processes and/or technologies available. Include any citations.</b> Significant upgrades to the plant would be needed to comply with the phosphorus WQBELs. This may include addition of tertiary treatment or replacement of the lagoon system with a mechanical treatment plant.  Citation: Dodge PMP dated September, 2023
<b>C. Identify any expected environmental impacts that would result from further treatment, and include any citations:</b> NA
<b>D. Is it technically and economically feasible for this permittee to modify the treatment process to comply with the water quality-based limits?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>E. If treatment is possible, is it possible to comply with the limits on the substance?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Tertiary treatment at municipal treatment plants has proven performance across the state in meeting the 0.100 mg/L water quality based effluent limit.
<b>F. If yes, what prevents this from being done? Include any citations.</b> All evaluated compliance options are economically infeasible at this time because the cost and the small existing user base would result in a user rate above the 2% primary screener threshold.  Citation: Final Phosphorus Compliance Alternatives Evaluation Report, April 20, 2022
<b>G. List any alternatives to current practices that have been considered, and why they have been rejected as a course of action, including any citations:</b> - Existing WWTP Modifications  Fine bubble aeration and chemical treatment to the lagoons – would only bring the effluent concentration to 0.8mg/L

Plant upgrade to mechanical treatment plant and tertiary treatment (disc filter solids removal) – current operator does not have the required license to operate a mechanical plant or tertiary treatment and would cause a higher than 2% increase to MHI (4.99% per ‘Final Primary Screener Calculation’ spreadsheet).

Citation: Final Phosphorus Compliance Alternatives Evaluation Report, April 20, 2022

**H. Describe the economic impacts of compliance: {applies only to municipalities; include other cost estimates for industries}**

Dodge and Pine Creek are composed of 74 households. The cost of the tertiary mechanical treatment upgrade would cost \$1,614,479 and the annual operational costs would be \$25,000. Current residential sewer user rates are \$599.95 annually. The increase in costs to install and operate a tertiary sand filter system would increase the average sewer utility fee to \$2,190.93 per year. The District is unable to absorb the additional financial burden of an upgrade at this time. The economic impact of construction and maintained compliance for the tertiary sand filter system would result in a user rate charge of 4.99% (number adjusted by DNR) which would be higher than 2% of the MHI.

Note: The numbers submitted by SEH were adjusted by the DNR.

Economic Factor		Source
MHI	43,890.00	IPV Application and <a href="#">DNR Loan Website</a> (note this is a weighted MHI for Dodge CDP and Pine Creek)
Calculated preliminary screener	4.99%	Final Phosphorus Compliance Alternatives Evaluation Report, April 20, 2022 (note DNR adjusted numbers)
Secondary score value		

**Section IX: Multi-Discharger Variance Feasibility (this assumes MDV approval)**

**A. Does the facility meet the economic indicators to qualify for the MDV?**  Yes  No  Unknown

**MDV secondary indicator score:** 6

**B. Is it technically and economically feasible for this permittee to comply with a phosphorus WQBEL of 1 mg/L or lower?**  Yes  No  Unknown

**C. Justification for considering an individual variance in lieu of the MDV:**

Adding chemical phosphorus treatment to achieve a phosphorus interim limit of 1.0 mg/L as a monthly average was shown to be economically infeasible. Costs associated with chemical treatment and MDV watershed offset provisions would raise sewer rates to at least 2.36% of the community’s median household income.

**Section X: Compliance with Water Quality Standards**

**A. Describe all activities that have been, and are being, conducted to reduce the discharge of the substance into the receiving stream. This may include existing treatments and controls, consumer education, promising centralized or remote treatment technologies, planned research, etc. Include any citations.**

The sanitary district is an aging community with a decline in population annually. The treatment system is a simple three-cell lagoon system that is not equipped to treat phosphorus. The system is optimized for what exists and without a cost investment in improvements further reduction of phosphorus cannot be achieved.

**B. Describe all actions that the permit requires the permittee to complete during the variance period to ensure reasonable progress towards attainment of the water quality standard. Include any citations.**

The facility will be required to follow the proposed phosphorus minimization plan which includes public education and non-point source trading. In addition, they are to improve their financial standing by increasing sewer rates and setting aside a fund specifically for phosphorus treatment upgrades at the plant.



PMP Action Items:

- Implement education efforts to help residential users understand ways to reduce phosphorus pollution.
- Educational outreach to local farmers in the surrounding areas.
- Meet with the County LCD on non-point source trading.
- Continually explore new phosphorus reduction opportunities

**Section XI: Compliance with Previous Permit (Variance Reissuances Only) NA**

<b>A. Date of previous submittal:</b> <u>NA</u>	<b>Date of EPA Approval:</b> <u>NA</u>
<b>B. Previous Permit #:</b> <u>NA</u>	<b>Previous WQSTS #:</b> _____ (EPA USE ONLY)
<b>C. Effluent substance concentration:</b> <u>NA</u>	<b>Variance Limit:</b> <u>NA</u>
<b>D. Target Value(s):</b> NA	<b>Achieved?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partial

**E. For renewals, list previous steps that were to be completed. Show whether these steps have been completed in compliance with the terms of the previous variance permit. Attach additional sheets if necessary.**

Condition of Previous Variance	Compliance
N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No



Phosphorus Minimization Plan

# Dodge Sanitary District Phosphorus Mitigation

Dodge, WI

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DODSD 167326 | September 11, 2023



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Engineers | Architects | Planners | Scientists

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September 11, 2023

RE: Dodge Sanitary District Phosphorus  
Mitigation  
Phosphorus Minimization Plan  
Dodge, WI  
SEH No. DODSD 167326 4.00

To Whom It May Concern,

Within this report, please find the Phosphorus Minimization Plan for Dodge Sanitary District. The intent of this report is to satisfy the requirements set forth by WDNR for the Individual Variance (see correspondence appended to this document.) This report outlines the steps Dodge Sanitary District will take while in their variance period to help minimize phosphorus in their effluent as well as in the receiving watershed. These steps include:

- Collection System Reduction
- Watershed Reduction
- Financial Goals

The application for the Individual Variance will be submitted separately from this report. If you have any questions regarding this report as you review, please do not hesitate to reach out to me via email at [jwendt@sehinc.com](mailto:jwendt@sehinc.com), or call me at 715.531.8063

Sincerely,

Jeremiah Wendt, PE  
Senior Engineer II  
Lic: (WI, SD, NE, VA)

BA/hbh

Engineers | Architects | Planners | Scientists

**Short Elliott Hendrickson Inc.**, 156 High Street, Suite 300, New Richmond, WI 54017-1128

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# Phosphorus Minimization Plan

Dodge Sanitary District Phosphorus Mitigation  
Dodge, WI

Prepared for:  
Dodge Sanitary District  
Dodge, WI

Prepared by:  
Short Elliott Hendrickson Inc.  
156 High Street #300  
New Richmond, WI 54017-1128  
715.246.9906

I, Jeremiah Wendt, PE, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



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Jeremiah Wendt, PE (WI, SD, NE, VA) Senior Engineer II	E40472 PE Number	9/08/2023 Date
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# Contents

Letter of Transmittal  
Certification Page  
Contents

Introduction.....	1
Background .....	1
Existing Conditions.....	1
Previous Evaluations.....	2
IEV Eligibility .....	2
Phosphorus Mitigation Strategies .....	2
Collection System Reduction .....	3
Watershed Reduction.....	4
Financial Goals .....	5

## List of Appendices

Appendix A	WDNR Correspondence
Appendix B	Lower Trempealeau Watershed
Appendix C	Secondary Score Calculation

# Phosphorus Minimization Plan

## Dodge Sanitary District Phosphorus Mitigation

Prepared for Dodge Sanitary District

### Introduction

The purpose of this plan is to outline strategies the Dodge Sanitary District will employ to reduce levels of phosphorus in both the effluent from their Wastewater Treatment Plant (WWTP) and overall phosphorus in the surrounding watershed. This plan serves as the Pollutant Minimization Plan requested by Wisconsin Department of Natural Resources (WDNR) as a part of the Dodge Sanitary District's application for an Individual Economic Variance (IEV) for total phosphorus (TP) discharge requirements. Records of correspondence with the WDNR on the IEV for Dodge Sanitary District are included in Appendix A.

In this plan, the following TP mitigation strategies are presented:

- Collection System Reduction
- Watershed Reduction
- Financial Goals

### Background

#### Existing Conditions

Dodge Sanitary District's WWTP is a three-cell stabilization lagoon system and discharges to the Trempealeau River. The WWTP also accepts wastewater from Pine Creek Sanitary District. There have been no changes to the WWTP since it was expanded in 1999. There is no power to the existing WWTP site. A lift station pumps all flow to the WWTP.

The average daily influent flow was 0.064 mgd for 2021. Average influent phosphorus is assumed to be 7 mg/L and average effluent phosphorus is around 0.21 lbs/day or 3.9 mg/L. Effluent phosphorus sampling data is limited, so there is potential for skewed data. To obtain a better representation of effluent phosphorus concentrations, it is recommended that more sampling be performed. For the purpose of this report, the current achievable phosphorus limit is 4.78 mg/L, the highest recorded value. There is no treatment targeting phosphorus at the WWTP, so this value will fluctuate with influent values. Recent influent phosphorus samples were reported as 6.39 mg/L and 4.73 mg/L, but without more sample points, 7 mg/L is used. 7 mg/L is a typical value for residential wastewater.

The area around the WWTP is dominated by undeveloped rural areas, agriculture, and residential developments. Previous PRESTO modeling showed that phosphorus contributions to the watershed are nonpoint source dominated (99 percent nonpoint, 1 percent point). The Lower Trempealeau Watershed is shown in Appendix B.

## Previous Evaluations

In the Final Phosphorus Compliance Alternatives Evaluation, submitted in April 2022, it was determined that the Dodge Sanitary District as currently arranged would not be able to meet the final calculated water quality-based effluent limits set at 0.3 mg/L weekly and 0.1 mg/L for a 6-month average. Significant upgrades to the plant, addition of tertiary treatment, or even wholesale replacement of the lagoon system with a mechanical treatment plant would be necessary to meet these limits. Other alternatives examined in this evaluation included adaptive management, water quality trading, alternative discharge locations, land disposal of effluent, multi-discharger variance (MDV), and the IEV. Due to financial concerns for the Dodge Sanitary District, the IEV was determined to be the only feasible option. The DNR, SEH, and Dodge Sanitary District have had multiple conversations regarding the community's compliance option and agreed that the IEV is the appropriate compliance option.

## IEV Eligibility

An economic variance to water quality standards may be granted if the impact of complying with the standard causes "widespread adverse social and economic impacts". EPA guidance documents for economic variances identify preliminary and secondary screeners in assessing "widespread adverse social and economic impacts" of complying with the standard. The preliminary screener for public entities is the impact complying with the water quality standard will have on sewer user charges, using the post-compliance user charge expressed as a percent of median household income (MHI). For user charges between 1 and 2 percent of the MHI, the impacts are expected to be "mid-range". EPA guidance indicates that user charges that exceed 2 percent of the MHI "may place an unreasonable financial burden on many of the households". Secondary indicators related to debt, socioeconomic and financial management data are also assessed to determine overall impact.

The individual economic variance has to be approved by both DNR and EPA. The largest determining factor is the EPA economic worksheets to determine if the community may be eligible for an individual variance. EPA's Interim Economic Guidance for Water Quality Standards Secondary Score Calculation (Appendix C) is used to indicate whether a community may be eligible or not.

Dodge Sanitary District raised rates in July 2022 and plans to do so again in 2024 to be above 2 percent. The increased rates will be used to maintain the collection system and WWTP, as well as set aside some funds for phosphorus mitigation. More information is included in **Section 3.4 Financial Goals**. Another sanitary district (Pine Creek) that discharges to Dodge Sanitary District is already over 2 percent of their MHI. In this case, even though the community is eligible for the MDV, the costs required for compliance and payments to the County would result in even further hardship.

## Phosphorus Mitigation Strategies

After engaging WDNR on the variance issue, it was determined that the IEV would be pursued. As a part of this application, WDNR requested that a Pollutant Minimization Plan be submitted for TP, detailing various mitigation strategies that Dodge Sanitary District can engage in to reduce phosphorus in their receiving stream and watershed. These strategies are described in the following sections.

## Collection System Reduction

A major source of phosphorus entering the WWTP is from the collection system. If high loadings are observed in the influent to the WWTP, it is typically due to large industrial or commercial sources. As described previously, the influent to the WWTP has not tested for higher than typical concentrations of TP and the system also has no significant industrial or commercial users. However, there still is opportunity to reduce incoming phosphorus from the residential users in the collection system through education on in-home best practices.

In an effort to reduce influent phosphorus loadings, the Dodge Sanitary District will implement an educational effort to help residential users and others in the area reduce phosphorus pollution. Through outreach (flyers, informational sessions, mailers, newsletters, etc.), Dodge Sanitary District will work to educate its users and other area residents on the following topics:

- Lawn and landscaping waste management
  - Keep leaves, grass clippings and other organic matter off the streets. Avoid blowing leaves or clippings into areas where they can wash into storm sewers. Once in the water, phosphorus from clippings and leaves can grow algae. Blow or bag your leaves, keep your clippings on the grass and use other organic matter as fertilizer.
- Low P Fertilizers
  - Use no-phosphorus or low-phosphorus fertilizer on lawns and gardens to avoid over-fertilizing. Look for package formulas of nitrate-phosphorus-potassium with a middle number (which represents phosphorus) of zero. For example, 22-0-15 indicates no phosphorus. Lower phosphorus fertilizers are also an option; look for numbers like 13-2-13 or 20-3-19.
- Choose Deep-Rooted Plantings
  - Plant buffers of deep-rooted plants in landscaping and along water body boundaries. Natural plantings or using plants with deep roots do a better job of absorbing and filtering runoff during rain events and can provide habitat for wildlife.
- Control Pet Pollution
  - Pick up pet waste from yards, parks and water body boundaries whenever possible. Pet waste contains phosphorus (and other nutrients and bacteria) that can pollute water when it rains and create runoff pollution when it is not disposed of properly.
- Drain Management
  - Direct downspouts to lawns and plant beds and use landscaping practices that stop or slow runoff from your property. By aiming your downspouts into landscapes, versus hard surfaces like sidewalks and driveways, you can reduce runoff to storm drains. Water will be better able to soak into the ground.
- Soap Choices
  - While the ban on phosphates in automatic dishwasher detergents has been in effect in Wisconsin since 2017, and a national ban on phosphates in laundry detergent has been in effect since 1994, there are still commercially available cleaning products that contain these chemicals. Use low- or no-phosphate cleaning products. Some soaps, detergents and household cleaners contain a form of phosphorus called phosphates. Choosing phosphate-free products can help minimize pollution.



- Septic Tank Inspections
  - Many rural residents in the area not tied into the Dodge Sanitary District collection system are likely utilizing septic systems. When a septic system fails or is not managed properly, phosphorus and nitrogen can be released into local water bodies or groundwater. According to the EPA, about 10 percent to 20 percent of septic systems fail during their operational lifetimes.

The topics and practices outlined above were adapted from guidance issued by the Madison Metropolitan Sewer District, and can be found here: <https://www.madsewer.org/news-resources/blog/simple-ways-to-reduce-phosphorus-pollution/>

## Watershed Reduction

As previously stated, the surrounding area is dominated by agriculture. These types of non-point sources are typically large contributors of phosphorus in the watershed through runoff. While Dodge Sanitary District has no control over the activities of the farmers in the surrounding area, they still can perform educational outreach to these potential contributors to raise awareness of phosphorus mitigation efforts they can take part in. Additionally, many of these reduction efforts can garner tax incentives from both the state and federal government.

Some educational strategies include:

- Crop and Tilling Practices
  - Runoff of sediment and phosphorus can be significantly reduced by altering certain operational practices. Some examples are introducing winter cover crops such as rye or switching to minimal till or no-till practices. These measures have been shown to either maintain or increase yields and save farmers money in the long term on nutrient applications. A more permanent and significant move for farmers would be converting low value/low production fields to natural prairie. The USDA as well as numerous nonprofit organizations such as Pheasants Forever have programs to incentives such practices.
- Nutrient Management Planning
  - The WDNR and UW-Madison have published extensive guidance on proper nutrient management for small to large farming operations. By putting together a nutrient management plan, farmers can both reduce phosphorus and nutrient runoff into the water shed, as well as save money while maintaining or increasing yields.
- Filter Strips and Tiling Removal
  - Installing filter strips per WDNR and USDA recommendations can trap sediment and runoff before it reaches a receiving water. These filter strips should be placed at or near the low elevation edge of the field, or the outlet of the field. They do not usually significantly impact the productive area of a field.
  - Removal of tiling in fields can also reduce phosphorus sent into the watershed. Tiling reduces the prevalence of naturally occurring wetlands, which serve as an important buffer for nutrients and sediment in the watershed.

An economic incentive:

- Annual meeting with County LCD
  - Conducting an annual meeting with the County LCD to discuss and facilitate trading with non-point sources in the watershed. This gives non-point sources, the ability to generate and sell credits. This may provide motivation for the sources to implement

or increase their best management practices for reducing pollutant loadings to receiving waters for an economic benefit.

## Financial Goals

Given that more robust phosphorus reduction efforts at the WWTP were determined unfeasible due to financial hardships that would be induced, it is a long-term goal for the Dodge Sanitary District to improve its financial footing. As stated previously, rates for users are set to increase in the coming years to better match operating costs. This will serve to increase the operational revenue and resources available for maintenance and improvements.

In addition to increasing rates, Dodge will begin to set aside money into a fund specifically for phosphorus treatment improvements. This will give Dodge the capability in the future to pursue funding for more robust treatment upgrades for its WWTP.

## Action Items Summary

Below is a table that summarizes the action items that will be implemented to help mitigate the potential for phosphorus pollutants in the Dodge Sanitary District. The table show what actions should be taken each year once execution of these methods begins.

Action Items	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6-10
<b>Collection System Reduction</b>						
Implement educational efforts to help residential users understand ways to reduce phosphorus pollution.	X	X	X	X	X	X
<b>Watershed Reduction</b>						
Educational outreach to local farmers in the surrounding areas	X	X	X	X	X	X
Meet with the County LCD on non-point source trading	X	X	X	X	X	X
<b>Miscellaneous</b>						
Continually explore new phosphorus reduction opportunities	X	X	X	X	X	X

BA

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# Appendix A

WDNR Correspondence

**State of Wisconsin**  
**DEPARTMENT OF NATURAL RESOURCES**  
**EAU CLAIRE SERVICE CENTER**  
**1300 W. CLAIREMONT AVE.**  
**EAU CLAIRE, WI 54701**

**Tony Evers, Governor**  
**Preston D. Cole, Secretary**  
Telephone 608-266-2621  
Toll Free 1-888-936-7463  
TTY Access via relay - 711



December 3, 2021

Email: [ntuschner@tuschner.com](mailto:ntuschner@tuschner.com)

Dodge Sanitary District No. 1  
Mr. Victor Tuschner, President  
PO Box 6  
Dodge, WI 54625

**Sent Electronically**  
WPDES Permit No. WI-0061191-07-0  
PWS ID 66201652  
Trempealeau County

Subject: December 1, 2021 Meeting Summary

Dear Mr. Tuschner:

The purpose of this letter is to provide a brief summary of the meeting held on December 1, 2021, to discuss potential phosphorous compliance options for Dodge Sanitary District No. 1 (Dodge). We began the meeting with a brief update from representatives from Dodge.

The department then provided an overview of potential options for Dodge to achieve compliance with phosphorous laws. First, the department discussed construction of seepage cells and/or ridge-and-furrow. The requirements for land treatment systems such as seepage cells are outlined in ch. NR 110, Wis. Adm. Code. Land treatment of Dodge's wastewater would eliminate the need for Dodge to monitor for phosphorous. Katie Jo Jerzak of SEH, Inc. explained that Dodge's primary concern with seepage cells is the financial aspect. Ms. Jerzak explained that if Dodge was eligible for a variance, they could use that time to explore whether seepage cells would be feasible.

The department explained that after further discussions with the United States Environmental Protection Agency (EPA), Dodge would be eligible to apply for a variance. The department provided an overview of the variance options and application process. Ms. Jerzak stated SEH, Inc. would require a signed contract from Dodge prior to beginning any work to submit a variance application on behalf of Dodge. Representatives of Dodge stated the next board meeting will be December 16, 2021. Ms. Jerzak said she would prepare a proposal for board review which would include deliverables and associated timelines. This proposal would include completion of a final compliance alternatives plan, which will help Dodge determine an appropriate course of action. Submittal of a variance would also require the department to revoke and reissue Dodge's permit. As a reminder, as long as Dodge continues to discharge at values above their phosphorous limit, Dodge will remain in violation until either a variance is approved or Dodge is able to discharge phosphorus at a level below the limit established in their current permit.

Representatives of Dodge stated they would provide the department with a copy of the signed contract after board review. This contract will then be used to establish a schedule for completion of action items to bring Dodge into compliance with phosphorous regulations. Dodge should provide a copy of this contract to the department no later than December 20, 2021. Please provide this information via email to [Emily.Pedersen@Wisconsin.gov](mailto:Emily.Pedersen@Wisconsin.gov).

If you have any questions regarding this summary, please contact me at 715-215-2669 or via email at Emily.Pedersen@Wisconsin.gov.

Sincerely,

A handwritten signature in cursive script that reads "Emily Pedersen".

Emily Pedersen  
Environmental Enforcement Specialist

- c:
- J. Nelson, DNR – Eau Claire
  - B. Pietz, DNR – Black River Falls
  - S. Wiczorek, Dodge -- sawsews@hotmail.com
  - D. Kiral, Dodge – davekiral@usa.com
  - K. Jereczek, Dodge -- Keithmj1@netzero.net
  - D. Lilla, Town of Dodge – lillaroad@aol.com
  - K. Jerzak, SEH, Inc. – kjerzak@sehinc.com



June 13, 2022

Dodge Sanitary District No. 1  
Mr. Victor Tuschner, President  
PO Box 6  
Dodge, WI 54625  
Email: ntuschner@tuschner.com

**Sent Electronically**  
WPDES Permit No. WI-0061191-07-0  
PWS ID 66201652  
Trempealeau County

Subject: June 8, 2022 Meeting Summary

Dear Mr. Tuschner:

The purpose of this letter is to provide a brief summary of the meeting held on June 8, 2022, to discuss potential phosphorous compliance options for Dodge Sanitary District No. 1 (Dodge). We began the meeting with introductions, and the Department of Natural Resources (department) then provided an overview of different compliance options for Dodge based on information submitted in Dodge's April 20, 2022 Final Phosphorous Compliance Report (Report).

Based on information provided in the Report, it appears Dodge will be pursuing an Individual Economic Variance. The department reviewed variance eligibility, potential requirements during the permit term, and the process and timeline for submittal of an application. Representatives of Dodge stated they would submit a variance application and Pollutant Minimization Program plan to the department no later than September 30, 2022.

Additionally, the department reminded Dodge of the past deadline for completing the cross connection inspections as required by the January 3, 2022 Consent Order. Condition 2b of the Consent Order required Dodge to complete all required residential and non-residential cross connection inspections by April 15, 2022. Dodge is required to notify the department in writing and submit documentation that it has completed all required cross connection inspections. The non-residential inspections were completed, but the residential inspections were not completed according to the schedule sent to the department by Dodge. Representatives of Dodge stated they have been working on completing the inspections and would provide the department with an updated timeline for completion.

If you have any questions regarding this summary, please contact me at 715-215-2669 or via email at [Emily.Pedersen@Wisconsin.gov](mailto:Emily.Pedersen@Wisconsin.gov).

Sincerely,

Emily Pedersen  
Environmental Enforcement Specialist

c: G. Thielen  
A. Garbe  
M. Claucherty  
B. Pietz  
S. Wiczorek, Dodge -- sawsews@hotmail.com  
K. Jerzak, SEH, Inc. -- kjerzak@sehinc.com

State of Wisconsin  
DEPARTMENT OF NATURAL RESOURCES  
EAU CLAIRE SERVICE CENTER  
1300 W. CLAIREMONT AVE.  
EAU CLAIRE, WI 54701

Tony Evers, Governor  
Preston D. Cole, Secretary  
Telephone 608-266-2621  
Toll Free 1-888-936-7463  
TTY Access via relay - 711



August 3, 2022

Email: [ntuschner@tuschner.com](mailto:ntuschner@tuschner.com)

Dodge Sanitary District No. 1  
Mr. Victor Tuschner, President  
PO Box 6  
Dodge, WI 54625

**Sent Electronically**  
WPDES Permit No. WI-0061191-07-0  
PWS ID 66201652  
Trempealeau County

**Subject:** Status Update

Dear Mr. Tuschner:

The purpose of this letter is to provide an update on the status of the violations alleged in the October 28, 2021 Notice of Violation and the January 3, 2022 Consent Order (Order) issued to the Dodge Sanitary District No. 1 (Dodge). Since issuance of the Order, the department has been in routine contact with you regarding the compliance-related issues at Dodge. On June 29, 2022, Dodge's acting operator Dean Collett emailed the department that the residential cross connection inspections have not been completed. Mr. Collett indicated the remaining cross connection inspections, which were due by April 15, 2022 under Condition 2b of the Order, will likely not be completed until the end of September 2022. Condition 2d of the Order also requires Dodge to notify the department in writing and provide documentation that it has completed all required cross connection inspections within 30 days of completing the action.

Additionally, Dodge remains in noncompliance of sections 2.2.1 and 4.1 of their Wisconsin Pollutant Discharge Elimination System Permit No. WI-0061191-07-0. During the June 13, 2022 meeting between the department and Dodge, representatives of Dodge stated they would submit a phosphorus variance application and Pollutant Minimization Program plan to comply with wastewater effluent discharge regulations to the department no later than September 30, 2022.

Please send an update on your progress addressing the cross connection control program and the phosphorus variance to the department **before the end of September 2022**.

The department emphasizes the importance of your immediate action toward a return to compliance, meeting all conditions of the Order, and communicating those actions to the department. Further delay and failure to meet the dates detailed above will leave the department little choice but to consider referral to the Wisconsin Department of Justice for resolution.



If you have any questions regarding this letter, please contact me at 715-215-2669 or via email at Emily.Pedersen@Wisconsin.gov.

Sincerely,

A handwritten signature in cursive script that reads "Emily Pedersen".

Emily Pedersen  
Environmental Enforcement Specialist

c: G. Thielen, DNR  
B. Pietz, DNR  
A. Garbe, DNR  
B. Goldowitz, DNR  
T. Stapelmann, DNR  
S. Wiczorek, Dodge -- sawsews@hotmail.com  
D. Collett, Dodge – glen-dean@hotmail.com  
D. Glenzinski, Dodge -- dglenzinski76@yahoo.com  
K. Jerzak, SEH, Inc. – kjerzak@sehinc.com  
T. Peterson, Dodge – tcpeterson@cityofgalesville.com

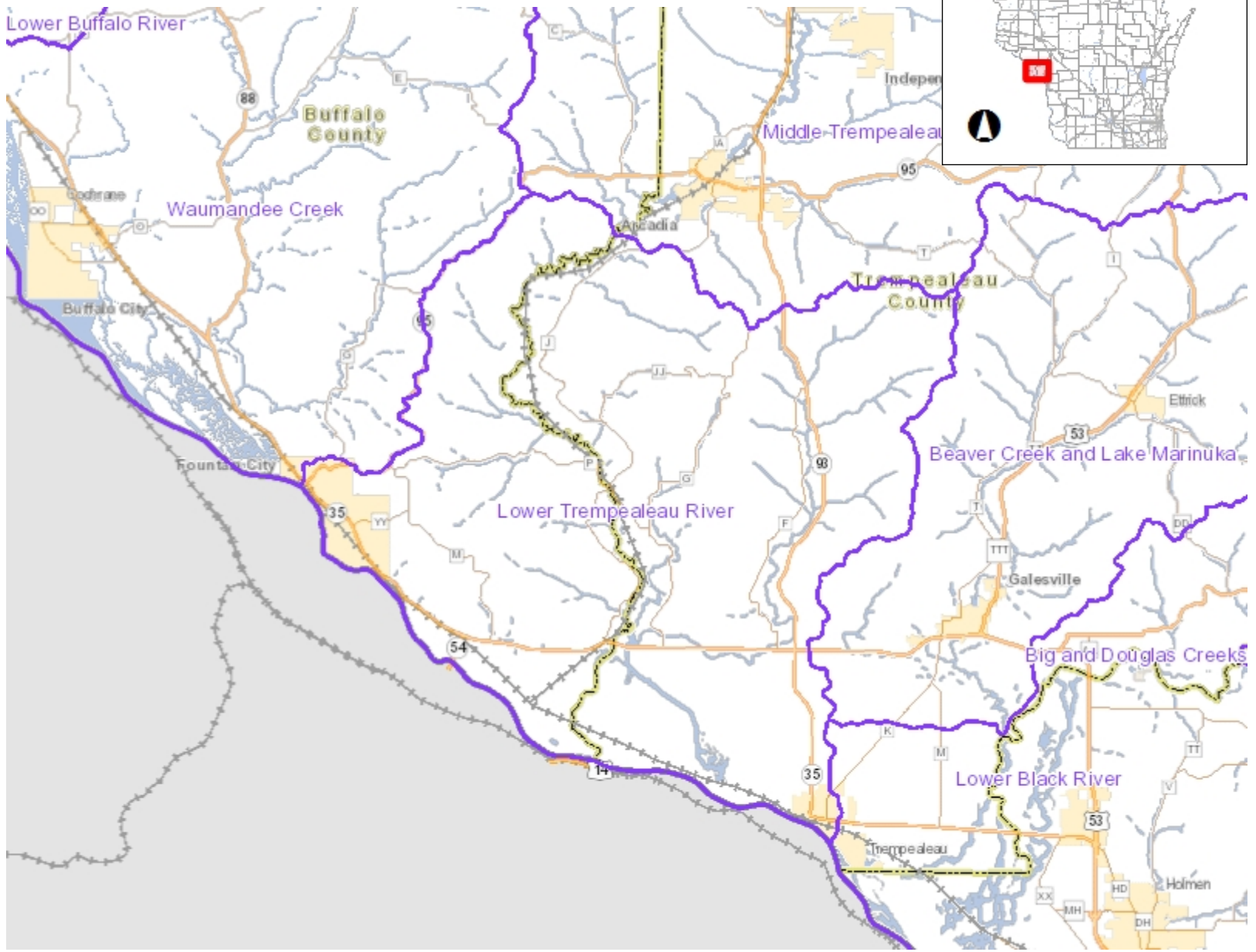
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# Appendix B

Lower Trempealeau Watershed



# Surface Water Data Viewer Map



- Legend**
- DNR Priority Watersheds
  - Municipality
  - State Boundaries
  - County Boundaries
  - Major Roads**
    - Interstate Highway
    - State Highway
    - US Highway
  - County and Local Roads**
    - County HWY
    - Local Road
  - Railroads
  - Tribal Lands
  - Rivers and Streams
  - Intermittent Streams
  - Lakes and Open water



NAD\_1983\_HARN\_Wisconsin\_TM

1: 253,440

**DISCLAIMER:** The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>

## Notes

# Appendix C

## Secondary Score Calculation

## Worksheet E

### Data Used in the Secondary Test

Please list the following values used in determining the Secondary Score. Potential sources of the data are indicated.

#### A. Data Collection

<b>Data</b>	<b>Potential Source</b>	<b>Value</b>
Direct Net Debt	Community Financial Statements Town, County or State Assessor's Office	\$ _____ (1)
Overlapping Debt	Community Financial Statements Town, County or State Assessor's Office	\$ _____ (2)
Market Value of Property	Community Financial Statements Town, County or State Assessor's Office	\$ _____ (3)
Bond Rating	Standard and Poors or Moody's	_____ (4)
Community Unemployment Rate	1990 Census of Population Regional Data Centers	_____ % (5)
National Unemployment Rate	Bureau of Labor Statistics (202) 606-6392	_____ % (6)
Community Median Household Income	1990 Census of Population	\$ _____ (7)
State Median Household Income	1990 Census of Population	\$ _____ (8)
Property Tax Collection Rate	Community Financial Statements Town, County or State Assessor's Office	_____ % (9)
Property Tax Revenues	Community Financial Statements Town, County or State Assessor's Office	\$ _____ (10)

## Worksheet E, Continued

### B. Calculation of Indicators

#### 1. Overall Net Debt as a Percent of Full Market Value of Taxable Property

Overall Net Debt (Calculate: (1) + (2) )

\$ \_\_\_\_\_ (11)

Overall Net Debt as a Percent of Full Market Value of Taxable Property (Calculate: [(11)/(3)] x 100)

\_\_\_\_\_ % (12)

#### 2. Property Tax Revenues as a Percent of Full Market Value of Taxable Property

Property Tax Revenues as a Percent of Full Market Value of Taxable Property (Calculate: [(10)/(3)] x 100)

\_\_\_\_\_ % (13)

## Worksheet F

### Calculating The Secondary Score

Please check the appropriate box in each row, and record the corresponding score in the final column. Then, sum the scores and compute the average. Remember, if one of the debt or socioeconomic indicators is not available, average the two financial management indicators and use this averaged value as a single indicator with the remaining indicators.

Indicator	Secondary Indicators			Score
	Weak*	Mid-Range**	Strong***	
Bond Rating Worksheet E, (4)	Below BBB (S&P) Below Baa (Moody's) <input type="checkbox"/>	BBB (S&P) Baa (Moody's) <input type="checkbox"/>	Above BBB (S&P) or Baa (Moody's) <input type="checkbox"/>	
Overall Net Debt as Percent of Full Market Value of Taxable Property Worksheet E, (12)	Above 5% <input type="checkbox"/>	2%-5% <input type="checkbox"/>	Below 2% <input type="checkbox"/>	
Unemployment Worksheet E, (5)& (6)	Above National Average <input type="checkbox"/>	National Average <input type="checkbox"/>	Below National Average <input type="checkbox"/>	
Median Household Income Worksheet E, (7) & (8)	Below State Median <input type="checkbox"/>	State Median <input type="checkbox"/>	Above State Median <input type="checkbox"/>	
Property Tax Revenues as a Percent of Full Market Value of Taxable Property Worksheet E, (13)	Above 4% <input type="checkbox"/>	2%-4% <input type="checkbox"/>	Below 2% <input type="checkbox"/>	
Property Tax Collection Rate Worksheet E, (9)	< 94% <input type="checkbox"/>	94% - 98% <input type="checkbox"/>	> 98% <input type="checkbox"/>	

\* Weak is a score of 1 point

**SUM**

\*\* Mid-Range is a score of 2 points

\*\*\* Strong is a score of 3 points

**AVERAGE**



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