Permit Fact Sheet

General Information

Permit Number	WI-0022039-10-0
Permittee Name and Address	VILLAGE OF CLINTON PO Box 129, Clinton, WI 53525-0129
Permitted Facility Name and Address	Clinton Wastewater Treatment Facility 809 PUNZEL DRIVE, CLINTON, WISCONSIN
Permit Term	April 01, 2026 to March 31, 2031
Discharge Location	NW ¼ of NW ¼ of Section 17, T1N, R14E
Receiving Water	Drainage Ditch Tributary to Spring Brook in Turtle Creek Watershed of Lower Rock River Basin in Rock County
Stream Flow ($Q_{7,10}$)	0.04 cfs
Stream Classification	Limited Aquatic Life (LAL)
Discharge Type	Existing and Continuous
Annual Average Design Flow (MGD)	0.378 MGD
Industrial or Commercial Contributors	None
Plant Classification	A1 - Suspended Growth Processes; B - Solids Separation; C - Biological Solids/Sludges; P - Total Phosphorus; D - Disinfection; L - Laboratory; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

Clinton Wastewater Treatment Facility consists of rotary fine screens, grit removal, and package plant consisting of an aeration basin, covered final clarifier, and aerobic sludge digester. Chemical phosphorus removal (using alum), tertiary filters, and UV disinfection are also used. The design flow for the facility is 0.378 MGD. Sludge from the treatment process is aerobically digested and stored prior to being land applied seasonally on DNR-approved sites.

Substantial Compliance Determination

Enforcement During Last Permit:

The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on April 24, 2025, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Ashley Brechlin, Compliance Engineer on May 21, 2025.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	0.364 MGD (2024)	Influent: 24-Hr Flow Proportional Composite samples collected after fine screening and grit removal. Parshall flume with ultrasonic flow meter located in the Headworks building.
001	0.374 MGD (2024)	Effluent: 24-Hr Flow Proportional Composite samples collected at the UV/Reaeration tank prior to UV. Grab samples at final outfall after UV disinfection, prior to discharge to the drainage ditch tributary of Spring Brook. Parshall flume with ultrasonic flow meter located in Filter Building.
002	60 Tons (2024 Permit Application)	Aerobically digested, Thickened, Liquid, Class B. Representative sludge samples shall be collected from the storage tank.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT

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

Changes from Previous Permit:

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

Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit.

2 Surface Water - Monitoring and Limitations

2.1 Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	5.0 mg/L	3/Week	24-Hr Flow Prop Comp	May - October
BOD5, Total	Weekly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	November - April
BOD5, Total	Monthly Avg	5.0 mg/L	3/Week	24-Hr Flow Prop Comp	May - October
BOD5, Total	Monthly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	November - April
Suspended Solids, Total	Weekly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	42.7 lbs/day	3/Week	Calculated	January, March, May, July, August, October, December
Suspended Solids, Total	Weekly Avg	47.4 lbs/day	3/Week	Calculated	February
Suspended Solids, Total	Weekly Avg	47 lbs/day	3/Week	Calculated	April, June, September, November
Suspended Solids, Total	Monthly Avg	30.3 lbs/day	3/Week	Calculated	January, March, May, July, August, October, December
Suspended Solids, Total	Monthly Avg	33.6 lbs/day	3/Week	Calculated	February
Suspended Solids, Total	Monthly Avg	33.3 lbs/day	3/Week	Calculated	April, June, September, November
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	7.0 mg/L	5/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max	7.3 mg/L	3/Week	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	6.9 mg/L	3/Week	24-Hr Flow Prop Comp	April

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	2.9 mg/L	3/Week	24-Hr Flow Prop Comp	May - September
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	7.3 mg/L	3/Week	24-Hr Flow Prop Comp	October - March
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	3.0 mg/L	3/Week	24-Hr Flow Prop Comp	April
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	1.2 mg/L	3/Week	24-Hr Flow Prop Comp	May - September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.8 mg/L	3/Week	24-Hr Flow Prop Comp	October - March
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	May-September
E. coli	% Exceedance	10 Percent	Monthly	Calculated	May-September. See the E. coli Percent Limit section. Enter the result in the DMR on the last day of the month.
Chloride		mg/L	4/Month	24-Hr Flow Prop Comp	December – January 2029. Sampling shall be done on four consecutive days one week per month. See 4/Month Chloride collection sample section.
Phosphorus, Total	Monthly Avg	0.8 mg/L	3/Week	24-Hr Flow Prop Comp	This is an interim MDV limit effective through 03/31/2028. See the MDV/Phosphorus permit sections and phosphorus schedules.
Phosphorus, Total	Monthly Avg	0.6 mg/L	3/Week	24-Hr Flow Prop Comp	This is an interim MDV limit effective on 04/01/2028. See the MDV/Phosphorus permit sections and phosphorus schedules.
Phosphorus, Total	Monthly Avg	7.05 lbs/day	3/Week	Calculated	January
Phosphorus, Total	Monthly Avg	6.36 lbs/day	3/Week	Calculated	February
Phosphorus, Total	Monthly Avg	4.83 lbs/day	3/Week	Calculated	March

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Phosphorus, Total	Monthly Avg	3.3 lbs/day	3/Week	Calculated	April
Phosphorus, Total	Monthly Avg	2.7 lbs/day	3/Week	Calculated	May
Phosphorus, Total	Monthly Avg	3.1 lbs/day	3/Week	Calculated	June
Phosphorus, Total	Monthly Avg	3.69 lbs/day	3/Week	Calculated	July
Phosphorus, Total	Monthly Avg	4.58 lbs/day	3/Week	Calculated	August
Phosphorus, Total	Monthly Avg	5.58 lbs/day	3/Week	Calculated	September
Phosphorus, Total	Monthly Avg	5.54 lbs/day	3/Week	Calculated	October
Phosphorus, Total	Monthly Avg	6.85 lbs/day	3/Week	Calculated	November
Phosphorus, Total	Monthly Avg	6.96 lbs/day	3/Week	Calculated	December
Phosphorus, Total		lbs/month	Monthly	Calculated	Report the total monthly phosphorus discharged in lbs/month on the last day of the month on the DMR. See Standard Requirements for 'Appropriate Formulas' to calculate the Total Monthly Discharge in lbs/month.
Phosphorus, Total		lbs/yr	Annual	Calculated	Report the sum of the total monthly discharges (for the months that the MDV is in effect) for the calendar year on the Annual report form.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See Nitrogen Series Monitoring section.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See Nitrogen Series Monitoring section.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Annual in rotating quarters. See Nitrogen Series Monitoring section. Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Chronic WET		TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET Section

Changes from Previous Permit

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

- **Total Suspended Solids –** Weekly Average limit added.
- **Dissolved Oxygen and pH:** Sample frequency updated.
- **E. coli-** Fecal coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits.
- **Phosphorus MDV-** The permittee has applied for a multi-discharger variance (MDV) for phosphorus for this permit term and the application has been approved by the Department. An MDV interim limit of **0.6 mg/L** has been added that goes into effect per a compliance schedule. The permittee is required to report the total amount of phosphorus discharged in lbs/month and lbs/year. By March 1 of each year the permittee shall make a payment(s) to participating county(s) of $68.40 per pound of phosphorus discharged during the previous year in excess of the target value of 0.2 mg/L.
- **Total Nitrogen Monitoring (TKN, N02+N03 and Total N)**- Annual monitoring in rotating quarters is required quarterly as outlined in the permit.

Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated **December 17, 2025**.

Monitoring Frequencies- The Monitoring Frequencies for Individual Wastewater Permits guidance (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 consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

Expression of Limits- In accordance with the federal regulation 40 CFR 122.45(d) and s. NR 205.065, Wis. Adm. Code, limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable.

E. Coli- Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying E. coli WPDES permit implementation procedures became effective May 1, 2020. The new rule requires that WPDES permits for facilities with required disinfection include monitoring for E. coli while facilities are disinfecting during the recreation period, and establish effluent limitations for E. coli established in s. NR 210.06 (2), Wis. Adm Code. The administrative code rule changes included the following actions: revised the bacteria water quality criteria from fecal coliform to E. coli to protect recreation in ch. NR 102, Wis. Adm. Code.; removed fecal coliform criteria for certain individual waters from ch. NR 104, Wis. Adm. Code.; revised permit requirements for publicly and privately owned sewage treatment works in ch. NR 210, Wis. Adm. Code.; and, updated approved analytical methods for bacteria in ch. NR 219, Wis. Adm. Code.

Phosphorus – Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorous. The final phosphorus WQBELs are 0.075 mg/L and were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has applied for the Multi-Discharger Variance (MDV) for phosphorus as provided for in s. 283.16, Wis. Stats., and approved by USEPA on September 3, 2025 for a 10-year duration. The permittee qualifies for the MDV because it is an existing source and a major facility upgrade is needed to comply with the applicable phosphorus WQBELs, thereby creating a financial burden. The interim effluent limit for total phosphorus is 0.8 mg/L as an average monthly limit, equivalent to the interim limit from the previous permit term. The interim limit of 0.6 mg/L becomes effective per the compliance schedule.

Conditions of the MDV require the permittee to optimize phosphorus removal throughout the proposed permit term, comply with interim limits and make annual payments to participating county(s) by March 1 of each year based on the pounds of phosphorus discharged during the previous year in excess of the specified target value.

The "price per pound" value is $50.00 adjusted for CPI annually as defined by s. 283.16(8)(a)2, Wis. Stats and takes effect for reissued permits with effective dates starting April 1. This may differ from the "price per pound" that is public noticed; however, the "price per pound" is set upon reissuance and is applicable for the entire permit term. The participating county(s) uses these payments to implement nonpoint source phosphorus control strategies at the watershed level.

PFOS and PFOA – NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites and other potential sources of PFOS or PFOA. Based on information available at the time the proposed permit was drafted, the department has determined the permittee does not need to sample for PFOS or PFOA in the effluent as part of this permit reissuance. The department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

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	B	Liquid	Fecal Coliform	Injection	Land Application	60
Does sludge management demonstrate compliance? **Yes**						
Is additional sludge storage required? **No**						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **No** If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						
Is a priority pollutant scan required? **No, design flow is less than 5 MGD** Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

3.1 Sample Point Number: 002- SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	January – December 2027
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	January – December 2027
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and

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

Changes from Previous Permit:

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

PCB – Sample year updated.

PFAS –Monitoring is required annually pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

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

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

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

4 Schedules

4.1 Phosphorus Schedule - Optimization and Compliance Planning

The permittee is required to optimize performance and undertake compliance planning to control phosphorus discharges per the following schedule.

Required Action	Due Date
Optimization and Compliance Alternatives: The permittee shall implement a phosphorus discharge optimization plan to control phosphorus discharges to the greatest extent practicable. Submit a progress report that summarizes the approach to phosphorus removal at the facility, the resulting concentration and mass loading for the last 12-month period, and any changes that were or are needed to optimize removal of phosphorus by the due date. The permittee shall also evaluate alternative phosphorus compliance options such as water quality trading and adaptive management. The progress report submitted on the date due shall also detail any outreach activities undertaken to evaluate these options, any communications with credit generators,	03/31/2027

brokers/clearinghouse, and any potential water quality trading or adaptive management projects that may lead to compliance with phosphorus WQBELs. Financial alternatives evaluation: If the permittee intends to seek a renewed variance at the end of this permit term, the permittee may complete a financial evaluation to support ongoing variance eligibility. The report must evaluate financial mechanisms that have the potential to make compliance with phosphorus WQBELs economically feasible. Include an assessment of the feasibility and financial outcomes of the following opportunities: variable rate structures, grants through USDA or other sources, and DNR's Clean Water Fund Program.The assessment of the DNR's Clean Water Fund program should take into account subsidized interest rate loans, principal forgiveness, and other options as outlined in EPA's March 2024 Financial Capabilities Assessment Guidance, Appendix C.	
Progress Report #2: Submit a progress report per the above for the prior calendar year.	03/31/2028
Progress Report #3: Submit a progress report per the above for the prior calendar year.	03/31/2029
Progress Report #4: Submit a progress report per the above for the prior calendar year.	03/31/2030
Final MDV Optimization and Compliance Alternatives Report: Submit a progress report per the above for the prior calendar year. If water quality trading or adaptive management will be used to comply with phosphorus limitations during the next permit term, submit a draft water quality trading plan, adaptive management plan, or executed clearinghouse credit purchase agreement. The financial alternatives evaluation as described above must be submitted by the date due if the facility chooses to seek renewal of the variance.	09/30/2030

Explanation of Schedule

Per s. 283.16(6)(a), Wis. Stats. the Department may include a requirement that the permittee optimize the performance of a point source in controlling phosphorus discharges, which may be necessary to achieve compliance with applicable effluent limits. This compliance schedule requires the permittee to prepare an optimization plan with a schedule for implementation and submit it for Department approval. The schedule also includes a compliance planning element focused on economically feasible solutions to low-level phosphorus effluent limits such as water quality trading or adaptive management. The permittee shall take the steps called for in the optimization plan and submit annual progress reports on optimizing the removal of phosphorus and establishing a water quality trade or adaptive management project. Should the permittee intend to reapply for a subsequent term of variance coverage, a financial alternatives analysis will need to be completed. Report elements are listed in the schedule, and more information can be found in EPA's March 2024 Financial Capabilities Assessment Guidance, Appendix C.

4.2 Phosphorus Payment per Pound to County

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

Required Action	Due Date
Annual Verification of Phosphorus Payment to County: The permittee shall make a total payment to the participating county or counties approved by the Department by March 1 of each calendar year. The amount due is equal to the following: [(lbs of phosphorus discharged minus the permittee's target value) times ($[68.40 per pound)] or $640,000, whichever is less. See the payment calculation steps in the Surface Water section. The permittee shall submit Form 3200-151 to the Department by March 1 of each calendar year	03/01/2027

indicating total amount remitted to the participating counties to verify that the correct payment was made. The first payment verification form is due by the specified Due Date. Note: The applicable Target Value is 0.2 mg/L as defined by s. 283.16(1)(h), Wis. Stats. The "per pound" value is $50.00 adjusted for CPI.	
Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2028
Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2029
Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2030
Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2031
Continued Coverage: If the permittee intends to seek a renewed variance, an application for the MDV (Multi Discharger Variance) shall be submitted as part of the application for permit reissuance in accordance with s. 283.16(4)(b), Wis. Stats.	
Annual Verification of Payment After Permit Expiration: In the event that this permit is not reissued prior to the expiration date, the permittee shall continue to submit Form 3200-151 to the Department indicating total amount remitted to the participating counties by March 1 each year.	

Explanation of Schedule

Subsection 283.16(6)(b), Wis. Stats., requires permittees that have received approval for the multi-discharger variance (MDV) to implement a watershed project that is designed to reduce nonpoint sources of phosphorus within the HUC 8 watershed in which the permittee is located. The permittee has selected the “Payment to Counties” watershed option described in s. 283.16(8), Wis. Stats. Under this option the permittee shall make annual payment(s) to participating county(s) that are calculated based on the amount of phosphorus actually discharged during a calendar year in pounds per year less the amount of phosphorus that would have been discharged had the permittee discharged phosphorus at a target value 0.2 mg/L. The pounds of phosphorus discharged in excess of the target value is multiplied by a per pound phosphorus charge that will equal $68.40 per pound. This schedule requires the permittee to submit Form 3200-151 to the Department indicating the total amount remitted to the participating county(s).

4.3 Phosphorus Multi-Discharger Variance Interim Limit (0.6 mg/L)

This compliance schedule requires the permittee to achieve compliance with the specified MDV interim effluent limit in accordance with s. 283.16(6), Wis. Stats., by the due date.

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent discharges of phosphorus with conclusions regarding compliance.	09/30/2026
Action Plan: Submit an action plan for complying with the specified interim effluent limit. If construction is required, include plans and specifications with the submittal.	03/31/2027
Initiate Actions: Initiate actions identified in the plan.	09/30/2027
Complete Actions: Complete actions identified in the plan and achieve compliance with the specified interim effluent limit.	03/31/2028

Explanation of Schedule

Subsection 283.16(6), Wis. Stats., establishes required interim phosphorus effluent limits that must be met for multi-discharger variance (MDV) eligibility. The schedule above provides the permittee with two years to comply with that limit.

4.4 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan Submittal: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with ch. NR 204, Wis. Adm. Code, by the Due Date. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading 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.	03/31/2027

Explanation of Schedule

Land Application Management Plan- An up-to-date Land Application Management Plan is required that documents how the permittee will manage the land application of biosolids consistent with ch. NR 204, Wis. Adm. Code

Attachments

Water Quality Based Effluent Limit Memo dated 12/17/2025

Multi Discharge Variance Evaluation Checklist dated 11/10/2025

Multi Discharge Variance Approval Letter dated 11/10/2025

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By:

Marissa Fleege, Wastewater Specialist

Date: 1/26/2026

Date amended post Fact Check:

Date amended post Public Notice:

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: December 17, 2025

TO: Marissa Fleege – SCR/Fitchburg

FROM: Sarah Luck – SCR/Fitchburg

SUBJECT: Water Quality-Based Effluent Limitations for Clinton Wastewater Treatment Facility
WPDES Permit No. WI-0022039-10-0

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 the Clinton Wastewater Treatment Facility in Rock County. This municipal wastewater treatment facility (WWTF) discharges to an effluent ditch which feeds into Spring Brook, located in the Turtle Creek Watershed (LR1) in the Lower Rock River Basin. This discharge is included in the Rock River TMDL as approved by EPA on 09/28/2011. 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_5 May – October November – April			 5.0 mg/L 10 mg/L	 5.0 mg/L 10 mg/L		1
TSS			**10 mg/L**	10 mg/L		3,4
pH	9.0 s.u.	6.0 s.u.				1
Dissolved Oxygen		7.0 mg/L				1
Ammonia Nitrogen April May – September October – March	 7.3 mg/L 7.3 mg/L 7.3 mg/L		 6.9 mg/L 2.9 mg/L **7.3 mg/L**	 3.0 mg/L 1.2 mg/L 4.8 mg/L		1,3
E. coli May – September				126 #/100 mL geometric mean		5
Chloride						6
Phosphorus LCA Interim Limit HAC Interim Limit Final WQBELs Final Mass Limits				 0.80 mg/L 0.60 mg/L 0.225 mg/L TMDL	 0.075 mg/L	4,7
TKN, Nitrate+Nitrite, and Total Nitrogen						8
Chronic WET						9

Footnotes:

1. No changes from the current permit.
2. Monitoring only.
3. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code, are included in bold.

4. Additional TSS and phosphorus mass limitations are required in accordance with the wasteload allocations specified in the Rock River TMDL.

Month	Monthly Ave TSS Effluent Limit (lbs/day)	Weekly Ave TSS Effluent Limit (lbs/day)	Monthly Ave Total P Effluent Limit (lbs/day)
January	30.3	42.7	7.05
February	33.6	47.4	6.36
March	30.3	42.7	4.83
April	33.3	47.0	3.30
May	30.3	42.7	2.70
June	33.3	47.0	3.10
July	30.3	42.7	3.69
August	30.3	42.7	4.58
September	33.3	47.0	5.58
October	30.3	42.7	5.54
November	33.3	47.0	6.85
December	30.3	42.7	6.96

5. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
6. Monitoring in the fourth year of the permit term at a frequency to ensure that a minimum 11 samples are available at the next permit issuance.
7. Under the phosphorus MDV, a level currently achievable (LCA) interim limit of 0.80 mg/L should be effective upon permit reissuance. A compliance schedule may be included in the permit until the highest attainable condition (HAC) limit of 0.60 mg/L can be met. The final WQBELs remain at 0.225 mg/L as a monthly average and 0.075 mg/L as a six-month average, as well as the TMDL mass limits.
8. 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. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Code, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).
9. Two chronic WET tests are recommended. The Instream Waste Concentration (IWC) to assess chronic test results is 98%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 75%, 50%, 25% & 12.5%. The primary control water used in chronic WET tests conducted on Outfall 001 shall be a standard laboratory water since there is no flow upstream of the discharge. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Sarah Luck (Sarah.Luck@wisconsin.gov) or Diane Figiel (Diane.Figiel@wisconsin.gov).

Attachments (3) – Narrative, Site Map, and Ammonia Nitrogen Calculations

PREPARED BY: Sarah Luck Date: December 17, 2025

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Attachment #1

Water Quality-Based Effluent Limitations for
Clinton Wastewater Treatment Facility

WPDES Permit No. WI-0022039-10-0

PART 1 – BACKGROUND INFORMATION

Facility Description
Clinton Wastewater Treatment Facility consists of rotary fine screens, grit removal, and package plant consisting of an aeration basin, covered final clarifier, and aerobic sludge digester. Chemical phosphorus removal (using alum), tertiary filters, and UV disinfection are also used. The design flow for the facility is 0.378 MGD. Sludge from the treatment process is aerobically digested and stored prior to being land applied seasonally on DNR-approved sites.

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

Existing Permit Limitations
The current permit, which expired on June 30, 2025, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
BOD_5 May – September November – April			 5.0 mg/L 10 mg/L	 5.0 mg/L 10 mg/L		2
TSS				10 mg/L		3
pH	9.0 s.u.	6.0 s.u.				2
Dissolved Oxygen		7.0 mg/L				2
Ammonia Nitrogen April May – September October – March	 7.3 mg/L 7.3 mg/L 7.3 mg/L		 6.9 mg/L 2.9 mg/L **7.3 mg/L**	 3.0 mg/L 1.2 mg/L 4.8 mg/L		4
Bacteria Interim Limit Fecal Coliform				 400 #/100 mL geometric mean		5
Final Limit *E. coli*				126 #/100 mL geometric mean		
Chloride						1
Phosphorus MDV Interim Final				 0.8 mg/L 0.225 mg/L	 0.075 mg/L	3,6

Attachment #1

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
TKN, Nitrate+Nitrite, and Total Nitrogen						1
Chronic WET						7

Footnotes:

1. Monitoring only.
2. These limitations are not being evaluated as part of this review since the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed.
3. Additional TSS and phosphorus mass limitations are required in accordance with the wasteload allocations specified in the Rock River TMDL.

Month	Monthly Ave TSS Effluent Limit (lbs/day)	Weekly Ave TSS Effluent Limit (lbs/day)	Monthly Ave Total P Effluent Limit (lbs/day)
January	30.3	42.7	7.05
February	33.6	47.4	6.36
March	30.3	42.7	4.83
April	33.3	47.0	3.30
May	30.3	42.7	2.70
June	33.3	47.0	3.10
July	30.3	42.7	3.69
August	30.3	42.7	4.58
September	33.3	47.0	5.58
October	30.3	42.7	5.54
November	33.3	47.0	6.85
December	30.3	42.7	6.96

4. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code, are included in bold.
5. A compliance schedule was included in the permit to meet *E. coli* limits by April 30, 2025. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
6. The facility complied with phosphorus under the multi-discharger variance (MDV).
7. Two chronic WET tests required. The IWC for chronic WET was 98%.

Receiving Water Information

- Name: Effluent Ditch/Tributary to Spring Brook
- Waterbody Identification Code (WBIC): Effluent Ditch (none), 790500 (Spring Brook)
- Classifications used in accordance with chs. NR 102 and 104, Wis. Adm. Code:
    - Tributary ("Effluent Ditch") to Spring Brook is classified in ch. NR 104, Wis. Adm. Code, as limited aquatic life (LAL) "tributary from the Clinton STP to Spring Brook" (approximately 0.39 miles downstream). The Tributary to Spring Brook is not classified as a public water supply.
    - Spring Brook (unknown distance downstream of the confluence) is classified in ch. NR 104, Wis. Adm. Code, as limited forage fish (LFF) (described in code as "Spring Brook in Clinton Township"). It then transitions to warm water forage fish (WWFF) community. At one point a classification change was proposed and it may change in the future. It might be helpful to

have a Department biologist perform a stream assessment to clarify conditions and distances.

- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code:
  - Effluent ditch/Tributary to Spring Brook
    The following 7-Q_{10} and 7-Q_2 values are from USGS LR 69 which is in the SW1/4 of SW 1/4 of Section 18, T1N- R14 E, Rock County, at a culvert on Clinton Corners Road, 1.7 miles SW of Clinton Village.
    7-Q_{10} = 0.04 cubic feet per second (cfs)
    7-Q_2 = 0.11 cfs
    Harmonic Mean Flow = 0.34 cfs using a drainage area of 2.79 mi^2
    The Harmonic Mean has been estimated based on average flow and the 7-Q_{10} using an equation from U.S. EPA's *Technical Support Document for Water Quality-Based Toxics Control* (March 1991, EPA/505/2-90-001, pgs. 88-89).
  - Spring Brook:
    Low flows are estimated by USGS at the NE 1/4, NW 1/4, SEC. 32, T1N-R13E, Rock County, 2.6 miles NE of Beloit post office.
    7-Q_{10} = 0.04 cfs
    7-Q_2 = 0.19 cfs
- Hardness = 392 mg/L as $CaCO_3$. This value is from a 2021 WET test conducted by Hormel Foods. Hormel Foods is located downstream of Clinton Wastewater Treatment Facility and discharges to Spring Brook.
- % 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: No data is available for Spring Brook, and 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: Hormel Foods Inc. discharges to Spring Brook approximately seven miles downstream of Outfall 001. However, the mixing zones do not overlap so this discharge is not considered in this evaluation.
- Impaired water status: Spring Brook is listed (4/1/2022) as impaired for total phosphorus approximately 0.39 miles downstream of the outfall.

Effluent Information

- Flow rate:
  Design annual average = 0.378 million gallons per day (MGD)
  For reference, the actual average flow from July 2020 through September 2025 was 0.22 MGD.
- Hardness = 332 mg/L as $CaCO_3$. This value represents the geometric mean of four samples collected in December 2024 which were reported on the permit application.
- Wastewater source: Domestic wastewater with no industrial contributors.
- Water supply: Municipality waterworks.
- Additives: Aluminum sulfate (phosphorus removal)
- 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 nitrogen and hardness.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2, in the column titled “MEAN EFFL. CONC.”. Otherwise, substances with multiple effluent data are shown in the tables below or in their respective parts in this evaluation.

Attachment #1

Copper Effluent Data

Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)
12/11/24	8.2	12/22/24	10	01/03/25	14
12/13/24	11	12/25/24	12	01/06/25	13
12/16/24	10	12/28/24	13	01/09/25	14
12/19/24	8.9	12/31/24	14		
1-day P_{99} = 17 µg/L					
4-day P_{99} = 14 µg/L					

Chloride Effluent Data

	Chloride (mg/L)
1-day P_{99}	436
4-day P_{99}	381
30-day P_{99}	349
Mean	332
Std	40
Sample size	51
Range	190 - 390

The following table presents the average concentrations and loadings at Outfall 001 from July 2020 through September 2025 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameters with Effluent Limits

	Average Measurement	Average Mass Discharged
BOD_5	0.54 mg/L*	
TSS	0.58 mg/L*	1.5 lbs/day
pH field	7.5 s.u.	
Dissolved Oxygen	9.0 mg/L	
Ammonia Nitrogen	0.03 mg/L*	
Fecal Coliform	17#/100 mL**	
E. coli	8.4#/100 mL**	
Phosphorus	0.45 mg/L	0.82 lbs/day

*Results below the limit of detection (LOD) were included as zeroes in calculation of average.
** The average measurement for bacteria is calculated as a geometric mean. Values reported below the LOD are replaced with a value of 1 for the calculation of the geometric mean.

PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS 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 99th percentile (or P_{99}) 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_{10}

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. Adm. 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_{10} 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.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{Qe}$$

Where:

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

Qs = average minimum 1-day flow which occurs once in 10 years (1-day Q_{10}) if the 1-day Q_{10} flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q_{10}).

Qe = 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

Cs = 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_{10} method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations.

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 (mg/L) and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 0.03 cfs, (1-Q_{10} (estimated as 80% of 7-Q_{10})), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD.* (mg/L)	ATC	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Arsenic		340	358.4	71.7	<1.1		
Cadmium	332	114.5	120.8	24.2	0.2		
Chromium	301	4446	4689.1	938	<3.3		
Copper	332	48.2	50.8			17	14
Lead	332	341	360.0	72.0	<5.4		
Nickel	268	1080	1139.4	228	9.5		
Zinc	332	344	363.0	72.6	57		

SUBSTANCE	REF. HARD.* (mg/L)	ATC	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Chloride (mg/L)		757	798.4			436	390

* The indicated hardness may differ from the effluent hardness because the effluent hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the acute criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.
* * Per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016 consideration of ambient concentrations and 1-Q_{10} flow rates yields a more restrictive limit than the 2 × ATC method of limit calculation.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)
RECEIVING WATER FLOW = 0.01 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD.* (mg/L)	CTC	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Arsenic		152.2	155	31.0	<1.1	
Cadmium	175	3.82	3.89	0.8	0.2	
Chromium	301	325.75	331	66.3	<3.3	
Copper	392	33.32	33.9			14
Lead	356	95.51	97.1	19.4	<5.4	
Nickel	268	169.08	172	34.4	9.5	
Zinc	333	344.68	351	70.1	57	
Chloride (mg/L)		395	402			381

* The indicated hardness may differ from the receiving water hardness because the receiving water hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the chronic criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.

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 = 0.084 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	880	1006	201.2	0.2
Chromium (+3)	8400000	9604270	1920854	<3.3
Lead	2240	2561	512.2	<5.4
Nickel	110000	125770	25154	9.5

Monthly Average Limits based on Human Cancer Criteria (HCC)
RECEIVING WATER FLOW = 0.084 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	40	45.7	9.15	<1.1

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, **no effluent limitations are required**; monitoring recommendations are made in the paragraphs below.

Chloride – Considering available effluent data from the current permit term (January 2023 through December 2023), the 1-day P_{99} chloride concentration is 436 mg/L, and the 4-day P_{99} of effluent data is 381 mg/L. These effluent concentrations are below the calculated WQBELs for chloride; therefore, **no effluent limits are needed. Chloride monitoring is recommended to ensure that a minimum of 11 sample results are available at the next permit issuance** to meet the data requirements of s. NR 106.85, Wis. Adm. Code.

Mercury – The permit application did not require monitoring for mercury because the Clinton Wastewater Treatment Facility 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), Wis. Adm. Code." A review of the past five years of sludge characteristics data reveals that all three sample results are within expected analytical ranges and well below the 17 mg/kg level (all three samples were below the level of detection of 1.7 mg/kg). Therefore, **no mercury monitoring is recommended at Outfall 001.**

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Based on the type of discharge, the effluent flow rate, and lack of indirect dischargers, **PFOS and PFOA monitoring is not recommended.** The Department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BOD, TSS, AND DO

BOD
When Clinton Wastewater Treatment Facility underwent facility planning in 1998, a study was conducted on Spring Brook by the Department. In a memo written by Dave Marshall (WDNR), dated February 27, 1998, it was concluded that "geological and hydrological features…suggest that limited aquatic life (LAL) effluent limits will not protect downstream uses" in Spring Brook nor Turtle Creek, which is an Exceptional Resource Water. Therefore, given the minimal assimilative capacity in Spring Brook, the biological oxygen demand (BOD) limits were calculated using the 26-lb method to be the lowest that the Department typically gives to facilities: **5.0 mg/L as a weekly average from May through October and 10 mg/L as a weekly average from November through April** (rounded to two significant digits). BOD_5 mass limits are typically not included when the stream is effluent dominated/when the minimum BOD_5 limits are given.

TSS

Concentration Limit

Total suspended solids (TSS) effluent limits are regulated via narrative standards described in NR 102.04(1), Wis. Adm. Code. TSS effluent limits are included whenever BOD_5 limits are needed and are often set equal to the BOD_5 limits but are not given below 10 mg/L. The current permit has a monthly average TSS concentration limit of 10 mg/L. In order to satisfy the expression of limits requirements in s. NR 106.07(4), Wis. Adm. Code, **a weekly average limit of 10 mg/L is also recommended in addition to the monthly average limit of 10 mg/L currently in effect.** These are the minimum limits given to facilities where there is little to no dilution in the receiving water.

TMDL Limits

The Rock River TMDL has wasteload allocations (WLA) for total suspended solids (TSS).

Total Suspended Solids (TSS) Effluent Limitations

Month	Monthly TSS WLA[1] (tons/month)	Days Per Month	Monthly Ave TSS Effluent Limit from WLA[2] (lbs/day)	Weekly Ave TSS Effluent Limit from WLA[3] (lbs/day)
January	0.47	31	30.3	42.7
February	0.46	28	33.6	47.4
March	0.47	31	30.3	42.7
April	0.50	30	33.3	47.0
May	0.47	31	30.3	42.7
June	0.50	30	33.3	47.0
July	0.47	31	30.3	42.7
August	0.47	31	30.3	42.7
September	0.50	30	33.3	47.0
October	0.47	31	30.3	42.7
November	0.50	30	33.3	47.0
December	0.47	31	30.3	42.7

Footnotes:
1- Appendix Q. Monthly Total Suspended Solids Allocations by Wastewater Treatment Facility (p. 149)
2- Monthly average TSS effluent limit (lbs/day) = maximum monthly TSS WLA (tons/month) ÷ days per month x 2,000 lbs/ton
3- Weekly average effluent limit (lbs/day) = monthly average limit (lbs/day) x 1.41 multiplier

Weekly average mass limits were calculated in 2013. At that time, the coefficient of variation (CV) (the standard deviation divided by the mean) was assumed to be 0.6, and the monitoring frequency was 3x/week. Given these two factors, a multiplier of 1.41 was used. **Since Clinton Wastewater Treatment Facility is meeting the wasteload allocation, the limits are not recalculated.**

Effluent Data

Limits based on the WLA should be given in a permit regardless of reasonable potential. However, for informational purposes, the following table lists the statistics for TSS discharge, as both a concentration and a mass, from July 2020 through September 2025.

Attachment #1

Overall TSS Effluent Data

	Concentration (mg/L)	Mass (lbs/day)
1-day P_{99}	6.3	17.8
4-day P_{99}	2.9	12.0
30-day P_{99}	1.4	5.1
Mean	0.58*	1.5
Std	1.7	5.4
Sample Size	822 (682 ND)	822
Range	<2.0 - 11.2	0 - 66.32

*"<" 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 (ND) result.

DO

As there is little dilution available under low flow conditions, **the dissolved oxygen limit of 7.0 mg/L as a daily minimum is recommended to continue.**

PART 4 – 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, weekly average, and monthly average limits. These limits are re-evaluated at this time due to the following change:

- 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:

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

Where:

A = 0.633 and B = 90.0 for Limited Aquatic Life, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 822 sample results were reported from July 2020 through September 2025. The maximum reported value was 8.2 s.u. (Standard pH Units). The effluent pH was 8.1 s.u. or less 99% of the time. The 1-day P_{99}, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 8.1 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 8.0 s.u. Therefore, a value of 8.1 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 8.1 s.u. into the equation above yields an ATC = 10.71 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 the 1-Q_{10} 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_{10} (estimated as 80 % of 7-Q_{10}) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit (mg/L)
2×ATC	21
1-Q_{10}	11

The 1-Q_{10} method yields the most stringent limits for Clinton Wastewater Treatment Facility.

The limit of 11 mg/L, calculated above, is greater than the current daily maximum limit of 7.3 mg/L. If Clinton Wastewater Treatment Facility would like to request an increase to the existing permit limits, an assessment of their effluent data consistent with the requirements of ss. NR 207.04(1)(a) and (c), Wis. Adm. Code, must be provided. This evaluation is on a parameter-by-parameter basis and includes consideration of operations, maintenance, and temporary upsets. **Without a demonstration of need for a higher limit in accordance with s. NR 207.04, Wis. Adm. Code, the current daily maximum limit of 7.3 mg/L must be continued in the reissued permit.**

Presented below is a table of daily maximum limitations corresponding to various effluent pH values. Use of this table is not necessarily recommended in the permit, but it is presented herein for informational purposes.

Daily Maximum Ammonia Nitrogen Limits – LAL

Effluent pH (s.u.)	Limit (mg/L)	Effluent pH (s.u.)	Limit (mg/L)	Effluent pH (s.u.)	Limit (mg/L)
$6.0 \leq pH \leq 6.1$	89	$7.0 < pH \leq 7.1$	53	$8.0 < pH \leq 8.1$	11
$6.1 < pH \leq 6.2$	86	$7.1 < pH \leq 7.2$	48	$8.1 < pH \leq 8.2$	9.3
$6.2 < pH \leq 6.3$	84	$7.2 < pH \leq 7.3$	43	$8.2 < pH \leq 8.3$	7.7
$6.3 < pH \leq 6.4$	82	$7.3 < pH \leq 7.4$	37	$8.3 < pH \leq 8.4$	6.3
$6.4 < pH \leq 6.5$	79	$7.4 < pH \leq 7.5$	32	$8.4 < pH \leq 8.5$	5.2
$6.5 < pH \leq 6.6$	76	$7.5 < pH \leq 7.6$	28	$8.5 < pH \leq 8.6$	4.3
$6.6 < pH \leq 6.7$	72	$7.6 < pH \leq 7.7$	23	$8.6 < pH \leq 8.7$	3.6
$6.7 < pH \leq 6.8$	68	$7.7 < pH \leq 7.8$	20	$8.7 < pH \leq 8.8$	3.0
$6.8 < pH \leq 6.9$	64	$7.8 < pH \leq 7.9$	16	$8.8 < pH \leq 8.9$	2.5
$6.9 < pH \leq 7.0$	59	$7.9 < pH \leq 8.0$	14	$8.9 < pH \leq 9.0$	2.1

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)
The weekly and monthly average ammonia nitrogen limits calculation from the previous memo do not change because there have been no changes in the effluent and receiving water flow rates. The calculations from the 2006 WQBEL memo are shown in Attachment #3.

Effluent Data

The table on the following table presents the statistics based upon ammonia data reported from July 2020 through September 2025.

Ammonia Nitrogen Effluent Data

Ammonia Nitrogen (mg/L)	April	May – September	October – March
1-day P_{99}	-	0.38	0.81
4-day P_{99}	-	0.17	0.68
30-day P_{99}	-	0.07	0.37
Mean*	0.11	0.02	0.04
Std	1.41	0.16	1.86
Sample size	64 (54 ND)	368 (335 ND)	390 (362 ND)
Range	<0.115 - 4.7	<0.07 - 0.85	<0.039 - 10

*"<" 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 (ND) result.

Reasonable Potential

The need to include ammonia limits in the Clinton Wastewater Treatment Facility permit is determined by calculating the 99th upper percentile (or P_{99}) values for ammonia for May through September and October through March and comparing those to the calculated limits; for April, the mean effluent concentration is compared to 1/5th of the calculated limit (s. NR 106.05(6), Wis. Adm. Code). Based on these comparisons, there is no reasonable potential for the discharge to exceed any of the calculated ammonia nitrogen limits. However, since the permit currently has daily, weekly, and monthly average limits year-round, **the limits must be retained regardless of reasonable potential**, consistent with s. NR 106.33(1)(b), Wis. Adm. Code:

> (b) If a permittee is subject to an ammonia limitation in an existing permit, the limitation shall be included in any reissued permit. Ammonia limitations shall be included in the permit if the permitted facility will be providing treatment for ammonia discharges.

Conclusions and Recommendations

In summary, after rounding to two significant figures, the following ammonia nitrogen limitations are recommended. 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)
April	7.3	6.9	3.0
May – September	7.3	2.9	1.2
October – March	7.3	**7.3**	4.8

Additional limits to meet the requirements in s. NR 106.07, Wis. Adm Code, are denoted in bold text.

Attachment #1

PART 5 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

On May 1, 2020, revisions to chs. NR 102 and NR 210, Wis. Adm. Code, became effective which replace fecal coliform limits with new *Escherichia coli* (*E. coli*) limits for protection of recreational uses. Section NR 210.06(2)(a)1, Wis. Adm. Code, includes two limits which must be included in permits for facilities which are required to disinfect:

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 *E. coli* limits above went into effect April 30, 2025. These limits are required during May through September; **no changes are recommended for any of the limits nor the current recreational period and the required disinfection season.** Any additional monitoring beyond what is required by the permit must also be reported on the DMR as required in the standard requirements section of the permit.

PART 6 – 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.

Since Clinton Wastewater Treatment Facility has phosphorus limits in effect that are more stringent than 1.0 mg/L, the need for a TBEL will not be considered further.

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.

Phosphorus criteria in s. NR 102.06, Wis. Adm. Code, do not apply to limited aquatic life waters as described in s. NR 102.06(6)(d), Wis. Adm. Code. These waters were not included in the USGS/WDNR stream and river studies and, therefore, the Department lacked the technical basis to determine and propose applicable criteria. At some time in the future, the Department may adopt phosphorus criteria based on new studies focusing on limited aquatic life waters. *The Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges* (2020) suggests that during the interim, WQBELs should be based on the criteria and flow conditions for the next stream segment downstream (or downstream lake or reservoir, if appropriate), because ss. NR 217.12 and 217.13, Wis. Adm. Code, state that the Department must set WQBELs to protect downstream waters. The discharge location of the wastewater from Clinton Wastewater Treatment Facility is classified as limited aquatic life at the point of discharge downstream to where the classification changes to warm water forage fishery. There is conflicting information on distances and classifications that may require a Department site assessment and a code update to clearly identify where the classification change is.

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.

$$\text{Limitation} = [(WQC)(Qs+(1-f)\ Qe) - (Qs-f\ Qe)\ (Cs)]/Qe$$

Where:

WQC = 0.075 mg/L for Spring Brook
Qs = 100% of the 7-Q_2 of 0.19 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 = 0.378 MGD = 0.585 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 as a median using the procedures specified in s. NR 102.07(1)(b) to (c), Wis. Adm. Code. 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.

A previous evaluation resulted in a WQBEL of 0.075 mg/L using a background concentration of 0.166 mg/L based on downstream data. Section NR 217.13(2)(d), Wis. Adm. Code, states that the determination of upstream concentrations shall be evaluated at each permit reissuance. There is no upstream data available, and new phosphorus sample data downstream of the outfall overwhelmingly exceeded 2022 WisCALM listing criteria for aquatic life use, and Spring Brook was 303(d) listed as impaired for total phosphorus. Therefore, the impaired water listing of Spring Brook downstream of the outfall points towards the notion that effluent phosphorus limits equal to the water quality criterion should continue.

Reasonable Potential Determination
The discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion because the 30-day P_{99} of reported effluent total phosphorus data is greater than the calculated WQBEL**.** Therefore, **a WQBEL is required.**

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 0.075 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 0.225 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
Since the discharge is to a surface water that is upstream of a phosphorus-impaired water that has an approved TMDL, a mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code. **It is recommended that the mass limits from the TMDL wasteload allocation be given.**

TMDL Limits
The Department has developed a TMDL for the Upper and Lower Rock River Basins. The US EPA

approved the Rock River TMDL on September 28, 2011. The document, along with the referenced appendices, can be found at: https://dnr.wisconsin.gov/topic/TMDLs/RockRiver/index.html.

The monthly average total phosphorus effluent limits in pounds per day (lbs/day) are calculated based on the monthly phosphorus wasteload allocation (WLA) given in pounds per month as suggested in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs* dated April 15, 2013. The WLA for this facility is found in the *Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Rock River Basin* report dated July 2011. The limits are equivalent to concentrations ranging from 0.86 mg/L to 2.24 mg/L at the facility design flow of 0.378 MGD. **Monthly average mass effluent limits in accordance with the following table are recommended for this discharge.**

Total Phosphorus Effluent Limitations

Month	Monthly Total P WLA[1] (lbs/month)	Days Per Month	Monthly Ave Total P Effluent Limit[2] (lbs/day)
January	218.51	31	7.05
February	177.97	28	6.36
March	149.79	31	4.83
April	98.86	30	3.30
May	83.70	31	2.70
June	92.95	30	3.10
July	114.27	31	3.69
August	141.99	31	4.58
September	167.37	30	5.58
October	171.72	31	5.54
November	205.63	30	6.85
December	215.73	31	6.96

Footnotes:
1- Appendix P. Monthly Total Phosphorus Allocations by Wastewater Treatment Facility (p. 147)
2- Monthly Average Total P effluent limit (lbs/day) = monthly Total P WLA (lbs/month) ÷ days per month

Effluent Data
The tables below summarize effluent total phosphorus monitoring data from July 2020 through September 2025.

Overall Total Phosphorus Effluent Data

	Concentration (mg/L)	Mass (lbs/day)
1-day P_{99}	1.40	3.65
4-day P_{99}	0.87	2.02
30-day P_{99}	0.58	1.18
Mean	0.45	0.82
Std	0.27	0.74
Sample size	822 (26 ND)	822
Range	<0.133 - 1.95	0 - 8.05

"<" means that the pollutant was not detected at the indicated level of detection. The average concentration was calculated using zero in place of the non-detected (ND) results.

Attachment #1

Total Phosphorus Effluent Mass Data by Month

Data in lbs/day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1-day P_{99}	1.68	1.97	3.86	4.42	2.43	4.32	6.45	2.96	2.85	2.65	2.11	1.70
4-day P_{99}	1.00	1.16	2.21	2.51	1.53	2.34	3.53	1.85	1.70	1.48	1.24	0.96
30-day P_{99}	0.65	0.74	1.37	1.53	1.07	1.21	1.98	1.28	1.12	0.88	0.80	0.59
Mean	0.50	0.56	1.00	1.10	0.86	0.75	1.32	1.02	0.86	0.62	0.60	0.43
Std	0.33	0.39	0.77	0.88	0.46	0.90	1.32	0.56	0.56	0.53	0.41	0.34
Sample size	67	60	67	64	67	64	78	81	78	64	67	65
Range	0 - 1.40	0 - 2.78	0 - 4.02	0 - 5.22	0.29 - 2.23	0 - 6.90	0 - 8.05	0.52 - 4.41	0.31 - 4.07	0.18 - 2.77	0.20 – 2.00	0 - 1.60

Multi-Discharge Variance Interim Limit

Clinton Wastewater Treatment Facility has reapplied for the phosphorus multi-discharger variance (MDV). Conditions of the phosphorus MDV require the facility to comply with an interim phosphorus limit in lieu of meeting the final WQBELs. **The recommended interim limit during the second permit under MDV approval, pursuant to s. 283.16 (6) (a), Wis. Stats., is 0.60 mg/L as a monthly average.** A compliance schedule may be appropriate to meet this interim limit, but compliance with 0.60 mg/L shall be no later than the end of the reissued permit. The previous interim limit of 0.80 mg/L should not be exceeded during the compliance schedule.

PART 7 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in Chapters NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. The daily maximum effluent temperature limitation shall be 86 °F for discharges to surface waters classified as Limited Aquatic Life according to s. NR 104.02(3)(b)1, Wis. Adm. Code, except for those classified as wastewater effluent channels and wetlands regulated under ch. NR 103 and described in s. NR 106.55(2), Wis. Adm. Code, which has a daily maximum effluent temperature limitation of 120°F. Although the immediate receiving water is listed in ch. NR 104, Wis. Adm. Code, as an effluent channel and would receive the 120°F limit, a limit of 86°F has been applied historically due to concerns that a limit of 120°F would cause downstream impacts.

Reasonable Potential

Temperature data was last sampled from January 2018 through December 2018, shown on the next page, and believed to still be representative. The maximum daily effluent temperature reported was 72°F; therefore, no reasonable potential for exceeding the daily maximum limit exists, and **no limits or monitoring are recommended**.

Attachment #1

Monthly Temperature Effluent Data & Limits

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	48	48	-	86
FEB	45	48	-	86
MAR	48	49	-	86
APR	53	54	-	86
MAY	59	65	-	86
JUN	67	69	-	86
JUL	68	68	-	86
AUG	71	72	-	86
SEP	68	69	-	86
OCT	65	66	-	86
NOV	59	59	-	86
DEC	53	53	-	86

PART 8 – 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 LC_{50} (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.

- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC_{25} (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The **IWC of 98%,** shown in the WET Checklist summary below, was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

$$IWC\ (as\ \%) = Q_e \div \{(1 - f)\ Q_e + Q_s\} \times 100$$

Where:

Q_e = annual average flow = 0.378 MGD = 0.585 cfs

f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = ¼ of the 7-Q_{10} = 0.04 cfs ÷ 4 = 0.01 cfs

- The new IWC of 98% is higher than the previous IWC of 94%. This change is because the immediate receiving water is classified as LAL, and the location for calculating the IWC should consider aquatic populations downstream where the classification changes to support those aquatic populations. For this calculation, the default mixing of 25% of the downstream flow is used since there is no other reason, such as a mixing zone study, to use a different percentage (100% mixing was used previously).

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. **The dilution water used in chronic WET tests conducted on Outfall 001 shall be standard laboratory water since there is no flow upstream of the discharge.**

- Shown below is a tabulation of all available WET data for Outfall 001. Efforts are made to ensure that decisions about WET monitoring and limits are made based on representative data, as specified in s. NR 106.08(3), Wis. Adm Code. Data which is not believed to be representative of the discharge was not included in reasonable potential calculations. The table below differentiates between tests used and not used when making WET determinations.

  Tests conducted prior to July 1, 2005 are not presented in the table below due to significant changes that were made to WET test methods in 2004. These changes were assumed to be fully implemented by certified labs by no later than June 2005.

WET Data History

Date Test Initiated	Chronic Results IC_{25} %				Footnotes or Comments
	C. dubia	Fathead Minnow	Pass or Fail?	Use in RP?	
09/18/2008	>100	>100	Pass	No	1
12/14/2010	>100	>100	Pass	No	1
12/04/2012	>100	>100	Pass	Yes	
10/29/2013	>100	>100	Pass	Yes	
05/02/2017	>100	>100	Pass	Yes	
11/05/2019	>100	>100	Pass	Yes	
09/28/2021	>100	>100	Pass	Yes	
02/20/2024	>100	>100	Pass	Yes	

Footnote:
1. *Tests done by S-F Analytical, July 2008 – March 2011.* The DNR has reason to believe that WET tests completed by SF Analytical Labs from July 2008 through March 31, 2011 were not performed using proper test methods. Therefore, WET data from this lab during this period has been disqualified and was not included in the analysis.

- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The

fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.

According to s. NR 106.08(6)(d), Wis. Adm. Code, TUa and TUc effluent values are equal to zero whenever toxicity is not detected (i.e. when the LC_{50}, IC_{25} or $IC_{50} \geq 100\%$).

Chronic Reasonable Potential = 0 < 1.0, reasonable potential is not shown, and **a chronic WET limit is not required.**

The WET checklist was developed to help DNR staff make recommendations regarding WET limits, monitoring, and other related permit conditions. The checklist indicates whether acute and chronic WET limits are needed, based on requirements specified in s. NR 106.08, Wis. Adm. Code. The checklist steps the user through a series of questions, assesses points based on the potential for effluent toxicity, and suggests monitoring frequencies based on points accumulated during the checklist analysis. As toxicity potential increases, more points accumulate, and more monitoring is recommended to ensure that toxicity is not occurring. A summary of the WET checklist analysis completed for this permittee is shown in the table below. Staff recommendations based on best professional judgment are provided below the summary table. For guidance related to reasonable potential and the WET checklist, see Chapter 1.3 of the WET Guidance Document: https://dnr.wisconsin.gov/topic/Wastewater/WET.html.

WET Checklist Summary

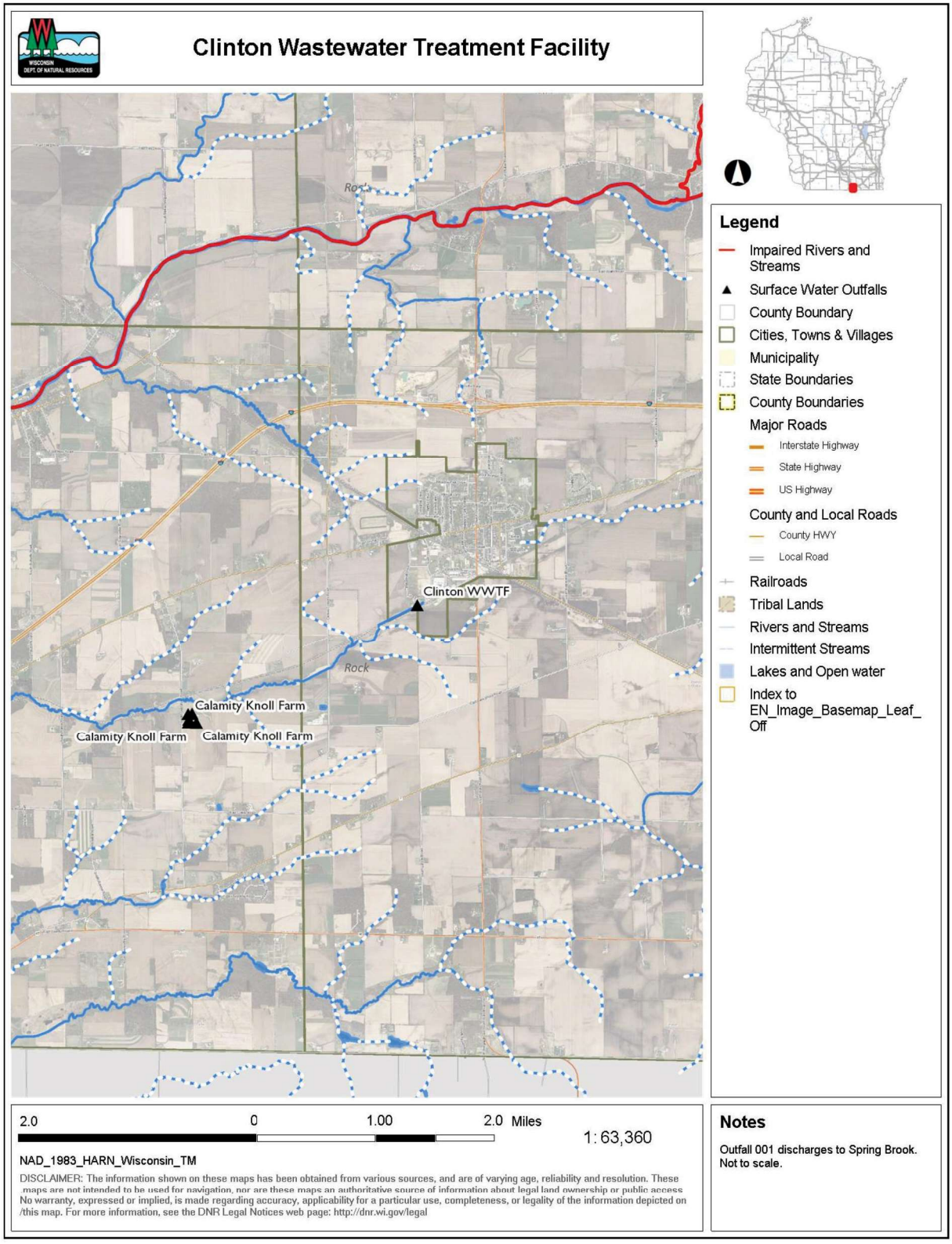
	Acute	Chronic
AMZ/IWC	Not Applicable. **0 Points**	IWC = 98% **15 Points**
Historical Data	No data collected since 2003. **5 Points**	Six tests used to calculate RP. No failures. **0 Points**
Effluent Variability	Little variability, no upsets or significant violations, consistent WWTF operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	< 4 mi to non-variance waterbody **5 Points**	Same as Acute. **5 Points**
Chemical-Specific Data	No reasonable potential for limits based on ATC. Ammonia nitrogen limit carried over from the current permit. Cadmium, chloride, copper, nickel, and zinc detected. Additional Compounds of Concern: None. **3 Points**	No reasonable potential for limits based on CTC. Ammonia nitrogen limit carried over from the current permit. Cadmium, chloride, copper, nickel, and zinc detected. Additional Compounds of Concern: None. **3 Points**
Additives	No biocides and one water quality conditioner (alum) added. Permittee has proper P chemical SOP in place. **1 Point**	All additives used more than once per 4 days. **1 Point**
Discharge Category	No industrial contributors. **0 Points**	Same as Acute. **0 Points**
Wastewater Treatment	Secondary or better. **0 Points**	Same as Acute. **0 Points**
Downstream Impacts	No impacts known. **0 Points**	Same as Acute. **0 Points**
Total Checklist Points:	**14 Points**	**24 Points**

	Acute	Chronic
Recommended Monitoring Frequency (from Checklist):	None.	2 tests during permit term.
Limit Required?	No	No
TRE Recommended? (from Checklist)	No	No

- After consideration of the guidance provided in the Department's *WET Program Guidance Document* (2022) and other information described above, **no acute and two chronic WET tests are recommended in the reissued permit.** Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge.

Attachment #2

Site Map



Attachment #3

Ammonia Nitrogen calculations from the WQBEL memo dated July 12, 2006

The following sections summarize the effluent quality and associated limitations calculated in accordance with chs. NR 105, and 106 (Wis. Adm. Code).

AMMONIA (as N) LIMITS			
CLASSIFICATION:	**LIMITED AQUATIC LIFE**		
EFFLUENT FLOW (MGD)	0.378		
EFFLUENT FLOW (cfs)	0.585		
BACKGROUND INFORMATION	**May – Sept.**	**Oct. – March**	**April**
7-Q_{10} (cfs)	0.04	0.04	0.04
7-Q_2 (cfs)	0.11	0.11	0.11
Ammonia (mg/L)	0.07	0.17	0.09
Temperature (deg C)	23	3	9
pH (std. units)	8.21	7.97	7.97
% of river flow used:	100	100	100
Reference weekly flow	0.04	0.04	0.04
Reference monthly flow	0.0935	0.0935	0.0935
CRITERIA (in mg/L)			
Acute (@ effl. pH)	5.98	5.98	5.98
4-day Chronic (@ backgrd. pH)	16.68	87.18	59.22
30-day Chronic (@ backgrd. pH)	6.67	34.87	23.69
EFFLUENT LIMITS (in mg/L)			
Weekly average	17.82	93.13	63.26
Monthly average	7.73	40.42	27.46

Early life stages present limits do not apply for LAL streams because burbot are not expected to be present in the receiving water.

Limits are also calculated for downstream where the stream classification changes to a warm water sport fish community:

AMMONIA (as N) LIMITS			
CLASSIFICATION:	**WARMWATER SPORTFISH**		
EFFLUENT FLOW (MGD):	0.378		
EFFLUENT FLOW (cfs):	0.585		
BACKGROUND INFORMATION:	**May – Sept.**	**Oct. – March**	**April**
7-Q_{10} (cfs)	0.04	0.04	0.04
7-Q_2 (cfs)	0.11	0.11	0.11
Ammonia (mg/L)	0.07	0.17	0.09
Temperature (deg C)	23	3	9
pH (std. units)	8.21	7.97	7.97
% of river flow used:	100	100	100
Reference weekly flow:	0.04	0.04	0.04
Reference monthly flow:	0.0935	0.0935	0.0935

CRITERIA (in mg/L):	May – Sept.	Oct. – March	April
Acute (@ effl. pH):	3.88	3.88	3.88
4-day Chronic (@ backgrd. pH):			
early life stages present	2.55	6.35	6.35
early life stages absent	2.55	10.31	9.06
30-day Chronic (@ backgrd. pH)			
early life stages present	1.02	2.54	2.54
early life stages absent	1.02	4.12	3.63
EFFLUENT LIMITS (in mg/L):			
Weekly average			
early life stages present	2.72	6.77	6.78
early life stages absent		11.00	9.68
Monthly average			
early life stages present	1.17	2.92	2.93
early life stages absent		4.76	4.19

Early life stages present limits apply during the months of April through September and the early life stages absent limits apply to October through March because burbot are not expected to be present in the receiving water.

Ammonia Decay: The more restrictive calculated limits should be used in order to protect at the point of discharge and downstream uses. Where the calculated limits are more restrictive based on downstream uses, ammonia decay can be considered to determine if these more restrictive limits are needed or if the ammonia will decay before it reaches the point of the classification change.

Ammonia decay rates are dependent on temperature with in-stream nitrification essentially non-existent in the winter. In-stream decay is expected so a first order decay model will be used. Based on the available literature, a decay rate of 0.25 day^{-1} at 20°C has been suggested as a default rate. A temperature correction factor of $\theta = 1.08$ is ($k_t = k_{20}\,\theta^{(T-20)}$).

$$N_{Limit} = \left(\frac{N_{down}}{EXP(-k_t T)} \right)$$

Where:

N_{Limit} = Ammonia limit needed to protect downstream use (mg/L)
N_{down} = Ammonia limit calculated based on downstream classification and flow (mg/L)
$-k_t$ = Ammonia decay rate at background stream temperature (day^{-1})
T = Travel time from outfall to downstream use (day)

The velocity of receiving water is assumed to be 5 miles per day and the distance from the point of discharge to the classification change is approximately 2.9 miles for a travel time of 0.58 days. This equation shows that at the location where the classification change, 94% of the ammonia is remaining during summer, 98% during April and 99% during winter. The limits can be adjusted for decay as follows:

Recommendation for Ammonia:

Using the available information summarized earlier and pursuant to s. NR 106.33(2), Wis. Adm. Code, the ammonia limitations would be as follows.

Recommended Ammonia Nitrogen Limitations		
Ammonia Nitrogen:	**Weekly average**	**Monthly average**
April	6.9 mg/L	3.0 mg/L
May - September	2.9 mg/L	1.2 mg/L
Oct. - March	11 mg/L	4.8 mg/L

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

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

11/10/2025

Connie Tracy, Village President
PO Box 129
Clinton, WI

Subject: Conditional approval of a multi-discharger phosphorus variance
Receiving Stream: Tributary to Spring Brook in Rock County
Permittee: Village of Clinton, WPDES WI-0022039

Dear Ms. Tracy:

In accordance with s. 283.16 of the Wisconsin Statutes, you have requested coverage under Wisconsin's multi-discharger phosphorus variance for the Village of Clinton Wastewater Treatment Facility in an application dated 12/27/2024. Wisconsin's multi-discharger phosphorus variance was approved by EPA on February 6, 2017. Coverage under the multi-discharger phosphorus variance may only be granted to an existing source that demonstrates a major facility upgrade is necessary to achieve phosphorus compliance and the upgrade will result in economic hardship as defined in the federally approved variance. The water quality criterion for which you are seeking a variance is contained in s. NR 102.06, Wis. Adm. Code.

After review of the application materials, the Department is tentatively approving coverage under the phosphorus multi discharger variance because the applicant has demonstrated that a major facility upgrade would be required to comply with the phosphorus water quality based effluent limitation, and the applicant meets the economic hardship eligibility criteria delineated in the federally approved variance. In addition, the permitted facility has agreed to comply with the interim limitations that will be included in the WPDES permit, and has agreed to reduce the amount of phosphorus entering surface waters by making payments to the counties pursuant to s. 283.16(6)(b)1., Wis. Stats.

Public comment on this decision will be solicited at the time of permit reissuance after which a final decision will be made. The Department appreciates your attention and interest in Wisconsin's multi-discharger phosphorus variance. Should you have further questions regarding this matter, please contact me at (608) 400 – 5596 or by email at matthew.claucherty@wisconsin.gov.

Sincerely,

Matt Claucherty, MDV Point Source Coordinator
Bureau of Water Quality

e-cc Roger Johnson, Village of Clinton
Ashley Brechlin, WDNR
Betsyjo Howe, WDNR
Michelle Woods, EPA Region 5
Tim Elkins, EPA Region 5

State of Wisconsin
Department of Natural Resources
Bureau of Water Quality
Permits Section - WQ/3

Multi-Discharger Variance Application Evaluation Checklist

Form 3200-145 (R 5/16)

Notice: This checklist is meant to be a tool to help Department of Natural Resources (DNR) staff review municipal and industrial multi-discharger variance (MDV) applications (Forms 3200-149 and 3200-150). Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31-19.39, Wis. Stats.).

Permittee Name

Village of Clinton

WPDES Permit Number	County
WI- 0 | 0 | 2 | 2 | 0 | 3 | 9	Rock

1. Did the point source apply for the MDV at the appropriate time?	(•) Yes ( ) No. *STOP- facility not eligible at this time.*	*See Questions 1-3.*
2. This operation is (check one):	( ) New or relocated outfall. *STOP- facility not eligible.* (•) Existing outfall	*See Questions 5-6.*
3. Is the point source is located in an MDV eligible area?	(•) Yes ( ) No. *STOP- facility not eligible.*	*Apply County information to Appendix H. Additional information provided in Q7 on municipal form & Q7-8 on industrial form.*
4. The secondary indicator score for the county (counties) the discharge is located is:	5	*See Appendices A-F. If the score is less than 2, stop; the facility is not eligible. See Q23 on municipal form & Q28 on industrial form.*
5. Is a major facility upgrade required to comply with phosphorus limits?	(•) Yes ( ) No. *STOP- facility not eligible.*	*See Q8 on municipal form/Q9 on industrial form.*
6. List the months where phosphorus limits cannot be achieved during the permit term:	☒ All ☒ Jan ☒ Apr ☒ Jul ☒ Oct ☒ Feb ☒ May ☒ Aug ☒ Nov ☒ Mar ☒ Jun ☒ Sep ☒ Dec	*Consider checking with limit calculator. If this does not match information in application, the application should be updated prior to approval.*

7. What is the current effluent level achievable?

Outfall Number(s)	Conc. (mg/L)	Method for calculation:	Does this concur with application?	
001	0.53	(•) 30-day P99 ( ) Other, specify:	( ) Yes (•) No, why not:	*DNR staff should verify the effluent concentration value(s) provided. See Q11 on municipal form & Q12 on industrial form.*

8. What is the appropriate interim limitation(s) for the permit term?

0.5 mg/L as a monthly average, pursuant to s. 283.16(6)(a)2. Wis. Stats.
Target value = 0.2 mg/L

Provide Rationale:

Total phosphorus effluent data from the past three years (2/1/2022 - 1/31/2025, n=470) yield a 30-day P99 value of 0.53 mg/L. Phosphorus treatment has improved over the past year, registering no monthly averages above 0.5 mg/L A schedule is not required to meet the proposed interim limit.

Note: See description in Section 2.02 of the MDV implementation guidance. Interim limitations should reflect the "highest attainable condition" for the permittee in question pursuant to s. 283.16(7), Wis. Stat.

9. *For Industries Only*- Where does the phosphorus in the effluent come from? (check all that apply)	☐ Process ☐ Additive Usage ☐ Water supply *Can intake credits be given or can the facility use an alternative water supply?* ◯ Not feasible ◯ Possibly, but further analysis needed ◯ Not evaluated at this time	*See Q14-15 & 19 on industrial form. If the answer is "possibly" or "not evaluated", the schedule section of the MDV permit should contain a requirement to perform this analysis.*
10. Has this facility optimized?	◉ Yes ◯ In progress ◯ No	*See Q14 on municipal form & Q16 & 20 on industrial form. Facility must optimize and operate at an optimize treatment level (s. 283.16(6)(a), Wis. Stat.)If no will need compliance schedule.*
11. Has a facility plan/compliance alternative plan been completed for the facility?	◉ Yes ◯ In progress ◯ No	*See Q15 on municipal form & Q17 on industrial form.*
12. What is the projected cost for complying with phosphorus? Source:	$ 1,569,000.00 MDV Application - "updated engineer's estimate"	*Facility must submit site-specific compliance costs. If cost projections are used from EIA, the permittee must certify that these costs are reasonable for the facility in question. See "projected compliance costs" in Section 2.02 of the MDV Implementation Guidance for details.*

Comments on planning efforts:

A March 2019 Final Compliance Alternatives Plan was prepared for Clinton by Town and Country Engineering. The document evaluates a number of alternatives for meeting the final WQBEL of 0.075 mg/L. The MDV application states that adaptive management is not an option for the facility since the receiving water is effluent dominated. The final compliance alternatives plan states that the required agricultural acreage is too great for a small watershed (467 acres), rendering WQT not viable. This statement is no longer accurate following the 2020 water quality trading guidance update which clarified that watersheds contributing to a HUC 12 are eligible for trading. Clinton may obtain WQT credits from anywhere within the Turtle Creek watershed, which is over 60,000 acres. During the current permit term, Clinton inquired with the water quality trading cleairnghouse and county LCD. No credit generating projects were available. Clinton also improved phosphorus treatment during the current permit term.

13. Are adaptive management and water quality trading viable?	◯ Yes ◉ Perhaps. Additional analysis required. ◯ No	*See Q18-21 on municipal form & Q22-25 on industrial form. If additional analyses required, the applicant may need to complete this analysis during the MDV permit term.*
14. Has the point source met the appropriate primary screener?	◉ Yes ◯ No. *STOP- facility not eligible.*	*See Q4 of this form in addition to the "eligibility" guidance in Section 2.01 of the MDV Implementation Guidance.*

Comments on economic demonstration:

In addition to the original final compliance alternatives plan from 2019, Clinton submitted an updated cost estimate with the MDV application. Capital costs for tertiary filtration are $1,569,000 with annual O&M costs of $60,281.00. Assuming a 20-year CWFP loan at 2.6% interest, the annual payments would be $101,600.02. With O&M, total costs would be $161,881.02. With a 55% residential use rate, the residential share is $89,034.56. This cost, divided amongst 835 residential users results in a per-user cost increase of $106.63 on average. With current rates averaging $571.68, future sewer rates would total to $678.31. This value is 1.01% of Clinton's $66,950 median household income. In Rock County with a secondary indicator score of 5, sewer rates at 1% of MHI meet the primary screener. The applicant meets the primary screener.

15. What watershed option was selected?

- (•) County project option. *Complete Section 5.*
- ( ) Binding, written agreement with the DNR to construct a project or implement a watershed plan. *Complete Section 4.*
- ( ) Binding, written agreement with another person that is approved by the DNR to construct a project or implement a watershed plan. *Complete Section 4.*

Section 4. Watershed Plan Review

16. MDV Plan Number: *Note: This is for tracking purposes. Contact Statewide Phosphorus Implementation Coordinator for the plan number.*	_____
17. Did the point source complete Form 3200-148?	( ) Yes ( ) No
18. Is the project area in the same HUC 8 watershed as the point of discharge?	( ) Yes ( ) No. *STOP- Watershed plan must be updated.*
19. What is the annual offset required? *See Section 2.03 of the MDV implementation guidance. If this value is different from the offset target provided in form 3200-148, the watershed plan should be amended.*	_____
20. Does the plan ensure that the annual load is offset annually?	( ) Yes ( ) No. *STOP- Watershed plan must be updated.*

21. Are projects occurring on land owned/operated by a CAFO or within a permitted MS4 boundary?

- ( ) Yes. *Work with appropriate DNR staff to ensure projects are not working towards other permit compliance.*
- ( ) No.

22. Are other funding sources being used as part of the MDV watershed project?

- ( ) Yes. *Work with appropriate DNR staff to ensure that funding sources can be appropriately used in the plan area.*
- ( ) No.

23. Do you have any concerns about the watershed project? *Note: Coordinate with other DNR staff as appropriate.*	( ) Yes. *STOP- Watershed plan must be updated.* ( ) No.

Comments:

Section 5. Payment to the County(ies)

24. At this time, the appropriate per pound payment is: $ 66.62

See "Payment Calculator" document at *\\central\water\WQWT_PROJECTS\WY_CW_Phosphorus\MDV*.

Section 6. Determination

Based on the available information, the MDV application is:

- (•) Approved
- ( ) Request for more information
- ( ) Denied

Additional Justification (if needed):

Certification

Preparer Name	Title
Matt Claucherty	Water Resources Management Specialist

Signature of Preparer

Date: 11/10/2025