Permit Fact Sheet

General Information

Permit Number	WI-0003018-10-0
Permittee Name and Address	Foremost Farms USA 240 Prentice St. N Clayton WI 54004
Permitted Facility Name and Address	Foremost Farms USA Clayton 240 Prentice St. N
Permit Term	June 01, 2025 to March 31, 2030
Discharge Location	SE ¼ and NE ¼ of Section 13, T33N-R15W and SW ¼ of Section 18, T33N-R14W
Receiving Water	An unnamed ditch tributary emptying into Little Moon Lake in Barron County (Hay River watershed within the Lower Chippewa River basin) and the groundwater of Barron and Polk County within the St. Croix River and Lower Chippewa River basins.
Stream Flow ($Q_{7,10}$)	The tributary - 0.0 cfs and Little Moon Lake - 10:1 dilution ratio
Stream Classification	The ditch tributary - Warm Water Sport Fish (WWSF) community and non-public water supply. Little Moon Lake: - WWSF community, non-public water supply. Both are in the ceded territory.
Wild Rice Impacts: *(no specific wild rice standards exist at this time)*	No impacts identified. No wild rice waters inventoried on the surface water. (Evaluation completed March 2017)
Discharge Type	The noncontact cooling water the discharge is an existing continuous discharge Both the spray field and seepage cells are seasonal.

Facility Description

Foremost Farms, USA – Clayton receives approximately 1.2 million pounds per day of raw milk from area dairy farms and condensed skim milk or nonfat dry milk from other locations to produce approximately 180,000 pounds of mozzarella cheese. Whey is produced as a byproduct during the cheese making process. The whey is concentrated by a reverse osmosis and ultra-filtration systems to produce whey protein concentrate and whey permeate. Both products are evaporated and concentrated (totaling about 130,000 gallons) then shipped to other Foremost Farms plants for further processing.

The main treatment system consists of a 2-part oval aeration channel, designed to treat 82,000 gallons per day and 1,700 pounds per day of BOD. Treated effluent may be stored in a holding pond through the winter. Water from the storage pond is sent back to the last treatment unit of the oval aeration channel before being sent to spray irrigation or the seepage cells. The facility produces a variety of different types of waste streams that are discharged to seven different outfalls:

Outfall 001 – A spray irrigation system is the main discharge system. The spray fields total 88.4 acres of fields from April 1st to October 31st annually. The spray fields are planted with grasses and harvested 2 to 3 times each summer. Seven monitoring wells are located around the spray fields to measure groundwater impacts.

Outfall 002 –There are three seepage cells that are used during the winter months with four monitoring wells located around the cells to measure groundwater impacts.

Outfall 003 – Non-contact cooling water is discharged to Little Moon Lake via an unnamed ditch tributary. January 25, 2002, the facility received approval for a chemical feed chlorination/dechlorination unit to be used on the cooling water.

Segregated waste is discharged through landspreading Outfalls 004, 005, 007 and 008.

- Outfall 004 is high strength wastewater and process wash water that is segregated from the volume which is sent to the aerated channel, because it is either high in BOD or chlorides.
- Outfall 005 is sludge removed from the aerated channel and storage pond.
- Outfall 007 is for emergency discharges of waste antibiotic milk, raw whey, condensed whey, or dairy solids.
- Outfall 008 is restricted to high strength wastewater that is transferred to another permitted wastewater facility or manure pit. This wastewater is typically high in chlorides.

Substantial Compliance Determination

There have been a few violations of effluent and groundwater limits, missed samples, and late reporting. However, in response to the inspection report, the department is working with the facility to take the necessary steps to correct the violations.

After a review of all Discharge Monitoring Reports, Groundwater Monitoring Reports, Land Application Reports, and a site visit on 10/24/2024 by Carson Johnson, WDNR, Foremost Farms Clayton has been found to be in substantial compliance with their current permit.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	**Influent** An average of 0.124 MGD (2020-2024 data)	Representative influent samples shall be collected at the beginning of the oval aeration channel. Dissolved oxygen samples shall be taken within the blower utility building.
001	**Spray Irrigation** An average of 0.288 MGD over 142 days of discharge per year. Used during April – October. (2020-2024 data)	Representative samples shall be collected as effluent leaves Aeration Cell #6 prior to discharging to the spray irrigation site located in the NE1/4, SE1/4, Section 13, T33N, R15W; NW1/4, SW1/4 and S1/2, NW1/4, Section 18, T33N, R14W.
002	**Seepage Cells** An average of 3,947 gallons/day over 33 days of discharge per year. Used during November - March (2020-2024 data)	Representative samples shall be collected prior to discharge to the seepage cells located in the SW1/4, NE1/4, Section 13, T33N, R15W.
003	**Surface Water - NCCW** An average of 0.378 MGD (2020-2024 data)	Representative samples shall be collected prior to discharge to the ditch tributary leading to Little Moon Lake in the Hay River watershed of the Lower Chippewa River basin. All discharges shall be limited to non-contact cooling water.
004	**Land App – High strength** 16,000,000 gallons/year (Information provided in the application)	Representative samples shall be collected prior to land application. Discharges from Outfall 004 shall be limited to land spreading high strength waste and process wash water on Department-approved sites.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
005	**Land App – Sludge** 40 tons/year (dry weight) (Information provided in the application)	Representative samples shall be collected prior to land application. Discharges from Outfall 005 shall be limited to land spreading of sludge removed from the aerated ponds and storage pond on Department-approved sites.
007	**Land App – Emergency** 10,000 gallons/year (Information provided in the application)	Representative samples shall be collected prior to land application. Discharges from Outfall 007 shall be limited to emergency land spreading of antibiotic milk, raw whey, condensed whey, or dairy solids on Department-approved sites.
008	**Land App – High Strength Chloride** 1,500,000 gallons/year (Information provided in the application)	Waste stream shall be limited to high strength chloride wastewater segregated from the wastewater streams for hauling to a permitted entity. Representative samples shall be collected from the wastewater storage tanks prior to removal.
101	**In-Plant** An average of 0.107 MGD over 88 days each year. (2020-2024 data)	Representative samples shall be collected as effluent leaves Aeration Cell #5 and is pumped into the storage pond.

Permit Requirements

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
Seepage Cells	818	MW-01	Well previously considered down gradient located west of the seepage cells. Currently under review, the groundwater flow could not be verified due to a lack of adequate groundwater elevation data.
	819	MW-02	Well previously considered up gradient located north of the seepage cells. Currently under review, the groundwater flow could not be verified due to a lack of adequate groundwater elevation data. The well has a history of being dry, a new deeper well (824) was installed to replace this well.
	820	MW-03	Well previously considered down gradient located south of the seepage cells. Currently under review, the groundwater flow could not be verified due to a lack of adequate groundwater elevation data.
	824	MW-02A	New well installed to replace 819 (MW-02).
Spray Irrigation	810	MW-6A	Down gradient point of standard well located south of the spray fields
	814	MW-9	Down gradient point of standard well located south of the spray fields

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
	815	MW-10	Down gradient point of standard well located southeast of the spray fields
	816	MW-11	Upgradient well used to measure background groundwater quality and to evaluate and calculate PALs and ACLs.
	821	MW-12	Upgradient non-point of standard well located on the north edge of the new spray field
	822	MW-13	Down gradient non-point of standard well located in the southeast corner of the new spray field.
	823	MW-14	Down gradient point of standard well located south of the new spray field.

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- AERATION CHANNEL INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total		mg/L	2/Month	24-Hr Comp	
Chloride		mg/L	2/Month	24-Hr Flow Prop Comp	
Dissolved Oxygen, Lagoon		mg/L	2/Month	Grab	

1.1.1 Changes from Previous Permit:

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

1.1.2 Explanation of Limits and Monitoring Requirements

Influent monitoring is needed to assess loading to the facility and treatment performance. The required parameters and sampling frequency are appropriate for a land treatment system as outlined in NR 214, Wis. Adm. Code.

Dissolved oxygen was added to the 2009 permit (seventh reissuance) because BOD5 limit violations occurred in the storage pond during the previous permit term. The facility was given a goal of at least 2.0 mg/L dissolved oxygen to assist in maintaining compliance.

2 Inplant - Monitoring and Limitations

2.1 Sample Point Number: 101- STORAGE POND

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total	Monthly Ave	200 mg/L	2/Month	Grab	
Chloride		mg/L	2/Month	Grab	

2.1.1 Changes from Previous Permit:

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

2.1.2 Explanation of Limits and Monitoring Requirements

BOD5 – The monthly average limit remains at 200 mg/L. Considering that some treatment occurs in the storage pond, a limit of 200 mg/L is adequate to prevent odors while allowing operational flexibility. This limit was established in the 1997 permit (fifth reissuance).

3 Surface Water - Monitoring and Limitations

3.1 Sample Point Number: 003- COOLING WATER TO DITCH TRIB

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
Temperature	Daily Max	90 deg F	3/Week	Multiple Grab	Interim limit. See the Effluent Temperature Monitoring and Limitations sections in the permit and the Temperature Limits schedule for more information.
Chlorine, Total Residual	Daily Max	19 ug/L	Weekly	Grab	
Chlorine, Total Residual	Monthly Avg	7.3 ug/L	Weekly	Grab	
Chlorine, Total Residual	Weekly Avg	7.3 ug/L	Weekly	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Phosphorus, Total		mg/L	Monthly	Grab	
Copper, Total Recoverable		ug/L	Monthly	Grab	Monitoring is required during the 2027 calendar year.

3.1.1 Changes from Previous Permit

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

- **Chlorine** units and limit expression have changed from mg/L to ug/L to be consistent with the monitoring standards found in similar industrial permits.
- Weekly and monthly **thermal** limits based on the month are required at the end of the "Temperature Limits" schedule.
- Monthly **copper** monitoring during 2027 is required to provide information for the next permit reissuance.

3.1.2 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 February 18, 2025.

Thermal - A limit equal to the previous permit will serve as the interim limit until completion of the "Temperature Limits" schedule.

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.

4 Land Treatment – Monitoring and Limitations

4.1 Sample Point Number: 001- SPRAY IRRIGATION FIELD

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
Hydraulic Loading Rate	Monthly Avg	0 gal/ac/day	Monthly	Calculated	Limit effective November - March.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Hydraulic Loading Rate	Monthly Avg	6,000 gal/ac/day	Monthly	Calculated	Limit effective April - October.
Nitrogen, Total		mg/L	2/Month	Grab	
Chloride		mg/L	2/Month	Grab	
Nitrogen, Max Applied On Any Zone	Annual Total	165 lbs/ac/yr	Annual	Total Annual	Use the total nitrogen concentration when calculating the annual total. See the Maximum Applied Nitrogen/Chloride On Any Zone section in the permit.
Chloride, Max Applied to Any Zone		lbs/ac/yr	Annual	Total Annual	Use the chloride concentration when calculating the annual total. See the Maximum Applied Nitrogen/Chloride On Any Zone section in the permit.
Soil - Nitrogen, Available		mg/kg	Annual	Grab	
Soil - Phosphorus, Available		mg/kg	Annual	Grab	
Soil - Potassium, Available		mg/kg	Annual	Grab	
Soil - pH Lab		su	Annual	Grab	
Other Sources of Nitrogen		lbs/ac/yr	Annual	Measure	

4.1.1 Changes from Previous Permit:

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

- The **hydraulic application rate** limitation replaces the flow limit.
- **Nitrogen max applied to any zone** has been moved from the annual report to the monitoring table.
- **Chloride max applied to any zone** has been moved from the annual report to the monitoring table.
- **Soil testing** (nitrogen, phosphorus, potassium and pH) and other sources of nitrogen applied (ie fertilizer or manure) has been moved from the annual report to the monitoring table.

4.1.2 Explanation of Limits and Monitoring Requirements

All requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214, Wis. Adm. Code. All categorical limits are based on ch. NR 214.14 Wis. Adm. Code. More information on the limitations can be found in the Foremost Farms USA Clayton – Land Treatment System Evaluation Report, WPDES Permit # WI-0003018 dated October 24, 2024.

Hydraulic application rate (HAR) limits will replace the limit for flow. Flow measures only the total amount of wastewater transported as a whole to the spray irrigation system. The HAR is considered more appropriate in determining compliance because it considers the actual amount of wastewater applied to each acre.

Nitrogen and chloride max applied to any zone – These two parameters previously found in the Annual Report have been moved to the monitoring table. This eliminates the additional report allowing all data to be entered into eDMRs.

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

4.2 Sample Point Number: 002- SEEPAGE CELLS

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Total Daily	
BOD5, Total		mg/L	Weekly	Grab	
Suspended Solids, Total		mg/L	Weekly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Weekly	Grab	
Nitrogen, Ammonia (NH3-N) Total	Weekly Ave	19.4 mg/L	Weekly	Grab	
Nitrogen, Nitrite + Nitrate Total	Weekly Ave	20 mg/L	Weekly	Grab	
Nitrogen, Total		mg/L	Weekly	Calculated	Total Nitrogen = Total Nitrogen Kjeldahl (mg/L) + Nitrite + Nitrate Nitrogen (mg/L).
Chloride	Weekly Ave	900 mg/L	Weekly	Grab	
Nitrogen, Max Applied On Any Zone		lbs/ac/yr	Annual	Total Annual	Use the total nitrogen concentration when calculating the annual total. See the Maximum Applied

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					Nitrogen On Any Zone section.
Chloride, Max Applied to Any Zone		lbs/ac/yr	Annual	Total Annual	Use the chloride concentration when calculating the annual total. See the Maximum Applied Chloride On Any Zone section.

4.2.1 Changes from Previous Permit:

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

- Calculation of **total nitrogen** has been added to the monitoring table to facilitate determination of the nitrogen max applied to any zone.
- **Nitrogen max applied to any zone** has been moved from the annual report to the monitoring table.
- **Chloride max applied to any zone** has been moved from the annual report to the monitoring table.

4.2.2 Explanation of Limits and Monitoring Requirements

All requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214, Wis. Adm. Code. All categorical limits are based on ch. NR 214.12 Wis. Adm. Code. More information on the limitations can be found in the Foremost Farms USA Clayton – Land Treatment System Evaluation Report, WPDES Permit # WI-0003018 dated October 24, 2024.

Nitrogen and chloride max applied to any zone – These two parameters previously found in the Annual Report have been moved to the monitoring table. This eliminates the additional report allowing all data to be entered into eDMRs.

5 Groundwater – Monitoring and Limitations

5.1 Groundwater Monitoring System for Seepage Cells

Location of Monitoring system: Around the seepage cells

Groundwater Monitoring Well(s) to be Sampled: 818 (MW-01), 819 (MW-02), 820 (MW-03), 824 (MW-02A)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: Currently under review

Groundwater Monitoring Well(s) Used for Point of Standards Application: Currently under review

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	Quarterly

Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	4.0	10	Quarterly
Nitrogen, Total Kjeldahl Dissolved	mg/L	N/A	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.4	N/A	Quarterly
pH Field	su	7.7	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Solids, Total Dissolved	mg/L	370	N/A	Quarterly

5.1.1 Changes from Previous Permit:

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

- A new well 824 was installed to replace well 819 which has a history of being dry.

5.1.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20, Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28, Wis. Adm. Code are established on a case-by-case basis. For more information, please refer to the Foremost Farms USA Clayton – Land Treatment System Evaluation Report, WPDES Permit # WI-0003018 dated October 24, 2024

5.2 Groundwater Monitoring System for Spray Irrigation

Location of Monitoring system: Around the spray irrigation system

Groundwater Monitoring Well(s) to be Sampled: 810 (MW-6A), 814 (MW 9), 815 (MW 10), 816 (MW 11), 821 (MW-12), 822 (MW-13), 823 (MW-14)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: 816 (MW 11)

Groundwater Monitoring Well(s) Used for Point of Standards Application: 810 (MW-6A), 815 (MW 10), 814 (MW 9), 823 (MW-14)

Parameter	**Units**	**Preventative Action Limit**	**Enforcement Standard**	**Frequency**
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Total Kjeldahl Dissolved	mg/L	N/A	N/A	Quarterly

Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.3	N/A	Quarterly
pH Field	su	7.9	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Solids, Total Dissolved	mg/L	470	N/A	Quarterly

5.2.1 Changes from Previous Permit:

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

The PALs for **nitrite + nitrate, organic nitrogen, pH** and **total dissolved solids** have been adjusted based on background water quality.

5.2.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20, Wis. Adm. Code. For more information, please refer to the Foremost Farms USA Clayton – Land Treatment System Evaluation Report, WPDES Permit # WI-0003018 dated October 24, 2024.

6 Land Application - Sludge/By-Product Solids

6.1 Sample Point Number: 004- PROCESS WASHWATER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	

6.1.1 Changes from Previous Permit:

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

6.1.2 Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial waste is determined in accordance with ch. NR 214 Wis. Adm. Code.

6.2 Sample Point Number: 005- AERATION & LAGOON SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		mg/L	Annual	Grab	
Chloride		mg/L	Annual	Grab	
Phosphorus, Total		mg/L	Annual	Grab	
Phosphorus, Water Extractable		% of Tot P	Annual	Grab	
Potassium, Total Recoverable		mg/L	Annual	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Annual	Grab	
pH Lab		su	Annual	Grab	

6.2.1 Changes from Previous Permit:

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

6.2.2 Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

6.3 Sample Point Number: 007- OFF SPEC DAIRY PRODUCTS

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Hydraulic Application Rate		gal/acre	See Permit Note	Calculated	
Nitrogen, Total Kjeldahl		mg/L	See Permit Note	Grab	
Chloride		mg/L	See Permit Note	Grab	
Phosphorus, Total		mg/L	See Permit Note	Grab	
Phosphorus, Water Extractable		% of Tot P	See Permit Note	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Potassium, Total Recoverable		mg/L	See Permit Note	Grab	

6.3.1 Changes from Previous Permit:

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

6.3.2 Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

6.4 Sample Point Number: 008- HIGH STRENGTH CHLORIDE WASTE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	
BOD5, Total		mg/L	Monthly	Grab	

6.4.1 Changes from Previous Permit:

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

6.4.2 Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with ch. NR 214 Wis. Adm. Code.

7 Schedules

7.1 Temperature Limits

This schedule requires the permittee to achieve compliance by the specified date.

Required Action	Due Date
Preliminary Compliance Report: Submit a preliminary compliance report indicating alternatives to achieve the final temperature limits. Informational Note: Refer to NR 106 Subchapters V & VI or NR 102.26, Wis. Adm. Code, for information regarding the re-evaluation of limits.	06/30/2026

Action Plan: Submit an action plan for complying with all applicable effluent temperature limits.	06/30/2027
Construction Plans: Submit construction plans (if construction is required for complying with effluent temperature limits) and include plans and specifications with the submittal.	06/30/2028
Initiate Actions: Initiate actions identified in the plan.	06/30/2029
Complete Actions: Complete actions necessary to achieve compliance with effluent temperature limits.	06/30/2030

7.1.1 Explanation of Schedule

Temperature Limits – It was determined that temperature limits are needed to protect aquatic communities from lethal and sublethal thermal effects. A compliance schedule is included in the permit to provide time for the permittee to investigate options for meeting water quality-based effluent limits.

7.2 Land Treatment Management Plan

A management plan is required for the land treatment system.

Required Action	Due Date
Land Treatment Management Plan: Submit an update to the management plan to optimize the land treatment system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	08/31/2025

7.2.1 Explanation of Schedule

Land Treatment Management Plan - An up-to-date Land Treatment Management plan is a standard requirement in reissued industrial permits per ch. NR 214, Wis. Adm. Code.

7.3 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	08/31/2025

7.3.1 Explanation of Schedule

Land Application Management Plan - An up-to-date Land Application Management plan is a standard requirement in reissued industrial permits per s. NR 214.17(6)(c), Wis. Adm. Code.

Attachments

Water Flow Schematic updated February 2025

"Water Quality-Based Effluent Limitations for Foremost Farms USA – Clayton WPDES Permit No. WI-0003018-10-0" memo dated February 18, 2025

"Foremost Farms USA Clayton – Land Treatment System Evaluation Report, WPDES Permit # WI-0003018" memo dated October 24, 2024

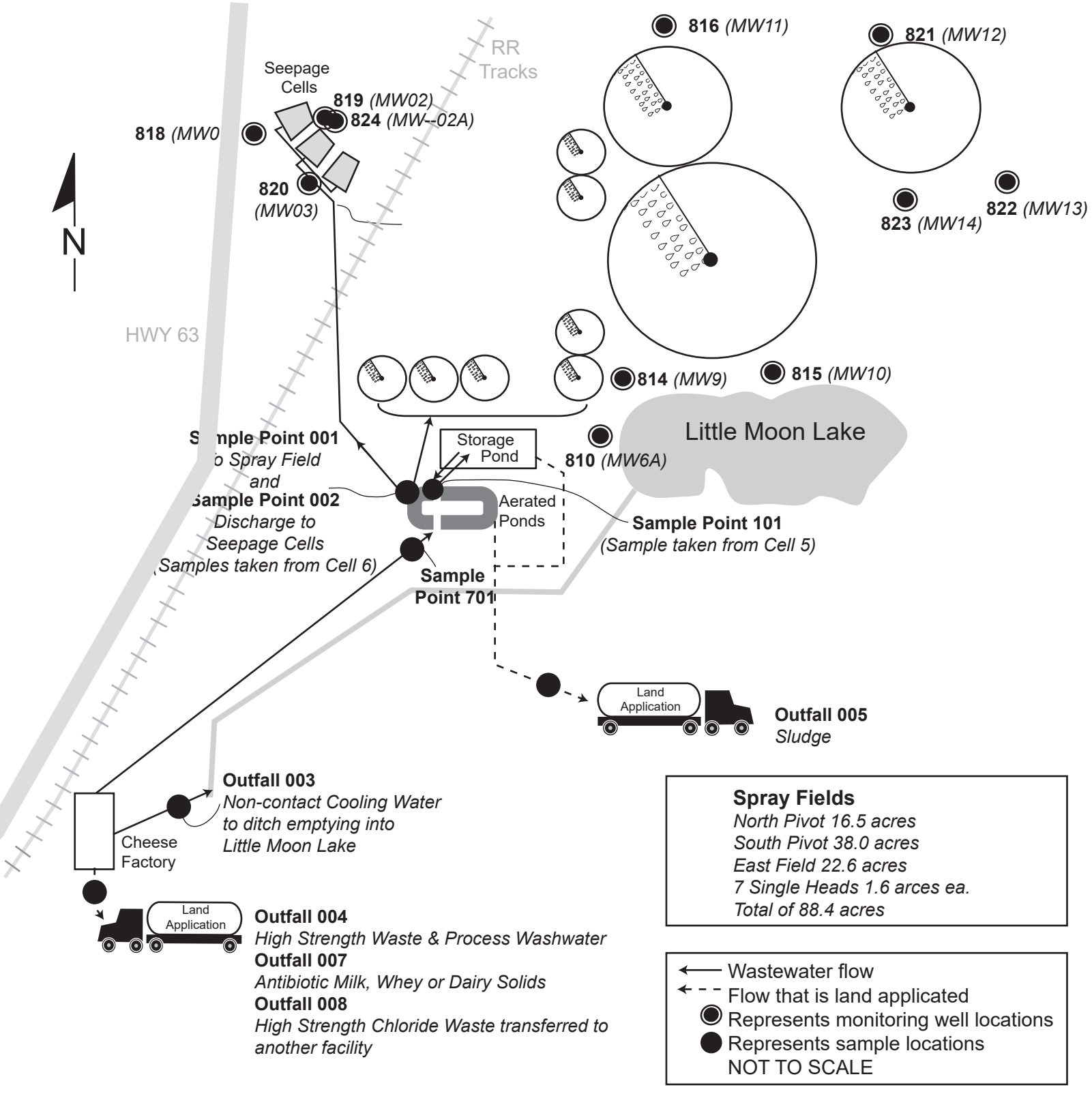
Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Sheri A. Snowbank Wastewater Specialist **Date:** February 21, 2025

Foremost Farms USA - Clayton
Wastewater Treatment System

Process wastewater from this facility is treated in 2 aeration channels; the first channel is divided into 3 cells and the second into 2 cells. Effluent from these channels can be sent to the spray irrigation fields, stored in a holding pond or sent to three seepage cells. Segregated wastes and sludge are landspread on Department-approved cropland; non-contact cooling water is discharged to Little Moon Lake. The diagram below shows the treatment units and sampling locations.



CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: February 18, 2025

TO: Sheri Snowbank – NOR/Spooner Service Center

FROM: Michael Polkinghorn – NOR/Rhinelander Service Center Michael Polkinghorn

SUBJECT: Water Quality-Based Effluent Limitations for Foremost Farms USA – Clayton
WPDES Permit No. WI-0003018-10-0

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 Foremost Farms USA – Clayton in Polk County. This industrial facility discharges to an unnamed tributary to Little Moon Lake, located in the Hay River Watershed in the Lower Chippewa River Basin. This discharge does not have an assigned wasteload allocation in the Tainter Lake/Lake Menomin total maximum daily load report as approved by EPA but is inside the TMDL area. 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 003:

Parameter	Daily Maximum	Weekly Average	Monthly Average	Footnotes
Flow Rate				1
Chlorine (Total Residual)	19 µg/L	7.3 µg/L	**7.3 µg/L**	1, 2
Temperature	Variable	Variable		3
Phosphorus				1
Copper (Total Recoverable)				4
Arsenic (Total Recoverable)				5

Footnotes:

1. No changes from the current permit.
2. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are included in bold.
3. Options for potential relief from temperature limits are explained in additional detail in the August 15, 2013 Department *Guidance for Implementation of Wisconsin's Thermal Water Quality Standards*
http://dnr.wi.gov/topic/surfacewater/documents/ThermalGuidance2edition8152013.pdf

Monthly Temperature Limits

Month	Calculated Effluent Limit	
	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	49	76
FEB	50	76

	(°F)	Daily Maximum Effluent Limitation (°F)
MAR	52	77
APR	55	79
MAY	65	
JUN	76	
JUL	81	85
SEP	73	82
OCT	61	80
NOV	49	77
DEC	49	76

4. Monthly monitoring for 1 year is recommended during the reissued permit term to better determine the need for copper limits at the next permit reissuance.
5. A different approved analytical method is recommended for future arsenic samples in the permit application such that the limit of detection is less than or equal to 2.7 µg/L to better determine the need for arsenic limits at the next permit reissuance.

No WET testing is required because information related to the discharge indicates low to no risk for toxicity.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Michael Polkinghorn at (715) 360-3379 or Michael.Polkinghorn@wisconsin.gov and Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (3) – Narrative, discharge area map, & thermal table.

PREPARED BY: Michael A. Polkinghorn – Water Resources Engineer

E-cc: Carson Johnson, Wastewater Engineer – NOR/Spooner Service Center
Michelle BalkLudwig, Regional Wastewater Supervisor – NOR/Spooner Service Center
Diane Figiel, Water Resources Engineer – WY/3
Nathaniel Willis, Wastewater Engineer – WY/3
Madeline Roberts, Regional Stream Biologist – NOR/Spooner Service Center
Woody Myers, Regional hydrogeologist – WCR/Eau Claire Service Center

Attachment #1

Water Quality-Based Effluent Limitations for
Foremost Farms USA – Clayton

WPDES Permit No. WI-0003018-10-0

Prepared by: Michael A. Polkinghorn

PART 1 – BACKGROUND INFORMATION

Facility Description

Foremost Farms USA – Clayton (FFUSA – Clayton) operations include receiving, transfer, and storage of bulk milk from dairy farms and other outside locations. Milk intake volume is approx. 1.2 million lbs/day. The primary products produced at the Clayton location is mozzarella and whey solids. The whey is concentrated by a reverse osmosis and ultra-filtration systems. Whey is then processed in an evaporative condenser. Condensed whey is shipped to other Foremost Farms plants for further processing.
The facility produces a variety of different types of waste streams that are discharged to six different outfalls. Noncontact cooling water (NCCW) is discharged on a continuous basis via Outfall 003 to an unnamed tributary (UT) flowing for approx. 1.0 mi to Little Moon Lake. This evaluation will focus on Outfall 003 only as it is the only surface water discharge.

Attachment #2 is a discharge area map of Outfall 003.

Existing Permit Limitations

The current permit, expiring on 06/30/2025, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Weekly Average	Monthly Average	Footnotes
Flow Rate				1
Chlorine, Total Residual	19 µg/L	7.3 µg/L	**7.3 µg/L**	2
Phosphorus				1
Temperature	90 °F			

Footnotes:

1. Monitoring only.
2. Additional limits to comply with the expression of limits requirements in ss. NR 106.07, and NR 205.065(7), Wis. Adm. Codes, are included in bold.

Receiving Water Information

- Name: UT to Little Moon Lake
- Waterbody Identification Code (WBIC):
  - UT: 2079200
  - Little Moon Lake: 2079100
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code:
  - UT:
    - Outfall 001 downstream to Little Moon Lake. (segment 1): Warm Water Sport Fish (WWSF)

community, non-public water supply. The end of the segment is approx. 1.0 mi downstream of Outfall 001.

- Little Moon Lake: WWSF community, non-public water supply.
- Information about the review for determining the biological potential of the UT and Little Moon Lake is discussed in greater detail in the Receiving Water Classification Memorandum (July 2024) and is available in the permit file for Foremost Farms USA – Clayton. The previous limit evaluation (January) treated the UT as a LAL community for temperature water quality standards only based on the lack of information about the UT's origin. The updated fish and aquatic life classification of the UT based on the recent review will be applied instead for limit calculation.

- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: Low flows for the UT are zero. For Little Moon Lake, where downstream impacts are applicable, a 10:1 dilution ratio will be used for calculating effluent limitations based on chronic or long-term impacts, in accordance with s. NR 106.06(4)(b)2, Wis. Adm. Code, because the receiving water does not exhibit a unidirectional flow at the point of discharge.
- Hardness: Effluent hardness is used in place of receiving water because there is no receiving water flow upstream of the discharge.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: Not applicable where the receiving water low flows are zero.
- Source of background concentration data: Background concentrations are not included because they do not impact the calculated WQBEL when the receiving water low flows are equal to zero.
- Multiple dischargers: None.
- Impaired water status: No known impairments for the UT or Little Moon Lake. Approx. 2.3 mi downstream of Outfall 003, Big Moon Lake is on the Clean Water Act Section 303(d) list for a total phosphorus impairment.

Effluent Information

- Flow rate(s):
  Maximum annual average = 0.243 MGD million gallons per day (MGD)
  For reference, the actual average flow from July 2020 – November 2024 was 0.189 MGD. The effluent flow sample of 326 MGD (04/07/2022) was identified as an outlier and is not used in this evaluation.
- Hardness = 240 mg/L as $CaCO_3$. This value represents the geometric mean of data (n = 4, October 2024 – November 2024) from the permit application required monitoring.
- Acute dilution factor used in accordance with s. NR 106.06(3)(c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Water supply: Private well and Village of Clayton municipal supply. Specifically, the private well contributes all the water supply to Outfall 003.
- Additives: Permacare PC-7408 for dechlorination.
- Effluent characterization: This facility is categorized as a secondary industry, 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 ammonia, chloride, and hardness. The current permit required monitoring for phosphorus.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2 below, in the column titled "MEAN EFFL. CONC.". 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	Conc. (µg/L)
10/28/2024	3.2
11/04/2024	<2
11/11/2024	3.7
11/18/2024	4.1
Mean*	2.8

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

Chlorine Effluent Data

Sample Date	Conc. (µg/L)
10/05/2021	40
10/12/2021	30
10/20/2021	40
10/27/2021	30
Sample Size (ND)	217
Mean*	<20

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

The following table presents the average concentrations and loadings at Outfall 003 from July 2020 – November 2024 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameter Averages with Limits

Parameter	Average Measurement
Chlorine (Total Residual)	<0.20 µg/L*
Temperature	69 °F

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

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. 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. This is the case for FFUSA – Clayton and the limits are set based on the 1-Q_{10} method.

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

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 0 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	MEAN BACK-GRD.	MAX. EFFL. LIMIT*	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day MAX. CONC.
Chlorine		19.0		**19.0**	3.81	<20	**40**
Arsenic		340		340	68.0	<14	<14
Cadmium	240	28.1		28.1	5.6	0.3	0.3
Chromium	240	3,687		3,687	737	<1.3	<1.3
Copper	240	35.4		35.4	7.1	2.8	4.1
Lead	240	249		249	49.7	<3.5	<3.5
Nickel	240	982		982	196	2.6	2.6
Zinc	240	258		258	51.7	2.9	2.9
Chloride (mg/L)		757		757	151	28	28

* 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 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	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Chlorine		7.28		7.28	1.46	<20
Arsenic		152.2		152	30.4	<14
Cadmium	175	3.82		3.82	0.8	0.3
Chromium	240	270.15		270	54.0	<1.3
Copper	240	21.86		21.9	4.37	2.8
Lead	240	65.13		65.1	13.0	<3.5
Nickel	240	109.28		109	21.9	2.6
Zinc	240	258.38		258	51.7	2.9
Chloride (mg/L)		395		395	79.0	28

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

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370		370	74.0	0.3
Chromium	3,818,000		3,818,000	763,600	<1.3
Lead	140		140	28.0	<3.5
Nickel	43,000		43,000	8,600	2.6

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 0 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3		13.3	2.66	<14

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, **effluent limitations are recommended for chlorine.** Limits and/or monitoring recommendations are made in the following paragraphs below:

Arsenic – Considering available effluent data from October 2024, the mean effluent concentration is nondetectable at <14 µg/L. This is below 1/5th of the calculated arsenic WQBELs; **therefore, limits or monitoring are not recommended during the reissued permit term.** In addition, the limit of detection of both samples submitted for arsenic is <14 µg/L using the EPA 200.7 analytical method. The limit of detection of this analytical method is greater than 1/5th of the calculated limit (2.7 µg/L, based on HCC) and is not certain if a nondetect sample is actually lower than that value. **A different approved analytical method is recommended for future arsenic samples in the permit application such that the limit of detection is less than or equal to 2.7 µg/L to better determine the need for arsenic limits at the next permit reissuance.**

Total Residual Chlorine – Considering available effluent data from July 2020 – November 2024, the mean effluent concentration is less than the most occurring limit of detection at <20 µg/L, with a 1-day maximum concentration of 40 µg/L. This is greater than the daily maximum chlorine WQBEL: **therefore, the daily maximum limit of 19 µg/L is recommended during the reissued permit term. The weekly and monthly average limits in the current permit are also required to continue** to meet the expression of limits requirements in s. NR 106.07, Wis. Adm. Code.

Copper **–** Considering available effluent data from October 2024 – November 2024, the mean effluent concentration is 2.8 µg/L. This is below 1/5th of the calculated copper WQBELs; **therefore, limits are not recommended during the reissued permit term. Monthly monitoring for 1 year is recommended during the reissued permit term** to better determine the need for copper limits at the next permit reissuance.

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 and known levels of PFOS/PFOA in the source water, **PFOS and PFOA monitoring is not recommended during the reissued permit term.** 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 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. Given the fact that the FFUSA – Clayton does not currently have ammonia nitrogen limits, the need for limits is evaluated at this time.

Effluent ammonia nitrogen samples (n = 4, October 2024 – November 2024) ranged from 0.48 – 0.68 mg/L. Based on this effluent data, there is no reasonable potential for Outfall 003 to exceed the most stringent ammonia nitrogen limits that would be calculated. **Therefore, ammonia nitrogen limits and monitoring are not recommended during the reissued permit term.**

PART 4 – PHOSPHORUS

Technology-Based Effluent Limit
Subchapter II of Chapter NR 217, Wis. Adm. Code, requires industrial facilities that discharge greater than 60 pounds of total phosphorus per month to comply with a 12-month rolling average limit of 1.0 mg/L, or an approved alternative concentration limit.

Because FFUSA – Clayton does not currently have an existing technology-based limit, the need for this limit in the reissued permit is evaluated. The data demonstrates that the annual monthly average phosphorus loading is less than 60 lbs/month, which is the threshold for industries in accordance with s. NR 217.04(1)(a)2, Wis. Adm. Code. **Therefore, a technology-based limit is not recommended during the reissued permit term.** In addition, the need for a WQBEL for phosphorus must be considered.

Annual Average Mass Total Phosphorus Loading

Month	Average Phosphorus Concentration (mg/L)	Total Effluent Flow (Million Gallons)	Calculated Mass (lbs/month)
Dec. 2023	0.20	5.1	8.6
Jan. 2024	0.24	4.9	9.8
Feb. 2024	0.17	4.1	5.8
March 2024	0.24	4.0	7.8
April 2024	0.21	4.4	7.7
May 2024	3.1	4.6	121
June 2024	0.39	3.9	13
July 2024	0.37	4.8	15
Aug. 2024	0.42	4.5	16
Sept. 2024	0.23	4.4	8.3
Oct. 2024	0.31	4.5	12
Nov. 2024	0.15	4.8	6.0
		Average =	19

Total P (lbs/month) = Monthly average (mg/L) × total flow (MG/month) × 8.34 (lbs/gallon)
Where total flow is the sum of the actual flow (MGD) for that month

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

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.075 mg/L applies for the UT. Little Moon Lake has a stratified, deep, seepage lake hydrology and has a phosphorus criterion of 0.020 mg/L as described in s. NR 102.06(4)(b)4, Wis. Adm. Code. Therefore, the most stringent phosphorus limit applicable to FFUSA – Clayton is 0.020 mg/L as described in s. NR 217.13(13), Wis. Adm. Code, where the limit shall be set equal to the water quality criterion.

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from July 2020 – November 2024. The effluent phosphorus sample of 76 mg/L (10/18/2022) is likely misreported and is much higher than what is realistically expected from the discharge. Therefore, it is excluded from this evaluation.

Total Phosphorus Effluent Data

Statistics	Conc. (mg/L)
1-day P_{99}	2.9
4-day P_{99}	1.7
30-day P_{99}	0.71
Mean	0.31
Std	0.71
Sample size	94
Range	<0.04 - 6.1

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 phosphorus WQBEL would be recommended during the reissued permit term.

Phosphorus WQBELs are applicable to NCCW discharges that contain phosphorus unless 100% of the phosphorus in the discharge originates from the receiving water as intake water as described in s. NR 217.10(2), Wis. Adm. Code. FFUSA – Clayton receives 100% of its water source from a high capacity private well. Department hydrogeologists had previously determined that surface water to ground water hydrologic connections exist as seepage from the UT and Little Moon Lake traveling south-west into the private well aquifer, which satisfies the "same waterbody" definition as defined in s. NR 106.03(11m), Wis. Adm. Code. **Therefore, phosphorus limits are not recommended during the reissued permit term. Phosphorus monitoring is recommended to continue during the reissued permit term to determine the need for phosphorus limits at the next permit issuance.**

PART 5 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

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

In accordance with s. NR 106.53(2)(b), Wis. Adm. Code, the highest daily maximum flow rate for a calendar month is used to determine the acute (daily maximum) effluent limitation. In accordance with s. NR 106.53(2)(c), Wis. Adm. Code, the highest 7-day rolling average flow rate for a calendar month is used to determine the sub-lethal (weekly average) effluent limitation. These values were based off actual flow reported from July 2020 – November 2024. Because the receiving water flow is zero, temperature limits are set equal to thermal water quality criteria.

The table below summarizes the maximum temperatures reported during monitoring from July 2020 – November 2024. The complete temperature limit calculations are included as attachment #3:

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	**83**	**83**	**49**	**76**
FEB	**89**	**89**	**50**	**76**
MAR	**89**	**89**	**52**	**77**
APR	**87**	**89**	**55**	**79**
MAY	**73**	73	**65**	82
JUN	**78**	78	**76**	84
JUL	**86**	**87**	**81**	**85**
AUG	75	75	81	84
SEP	**88**	**88**	**73**	**82**
OCT	**89**	**89**	**61**	**80**
NOV	**87**	**87**	**49**	**77**
DEC	**84**	**84**	**49**	**76**

Reasonable Potential

Permit limits for temperature are recommended based on the procedures in s. NR 106.56, Wis. Adm. Code.

- An acute limit for temperature is recommended for each month in which the representative daily maximum effluent temperature for that month exceeds the acute WQBEL. The representative daily maximum effluent temperature is the greater of the following:
  (a) The highest recorded representative daily maximum effluent temperature
  (b) The projected 99th percentile of all representative daily maximum effluent temperatures
- A sub−lethal limitation for temperature is recommended for each month in which the representative weekly average effluent temperature for that month exceeds the weekly average WQBEL. The representative weekly average effluent temperature is the greater of the following:
  (a) The highest weekly average effluent temperature for the month.
  (b) The projected 99th percentile of all representative weekly average effluent temperatures for the month

Comparing the representative highest effluent temperature to the calculated effluent limits determines the reasonable potential of exceeding the effluent limits. The months in which limitations are recommended are shown in bold. **Based on this analysis, daily maximum limits are recommended during September – April and July. Weekly average limits are recommended during September – July.**

The following general options are available for a facility to explore potential relief from the temperature limits:

- Effluent monitoring data: Verification or additional effluent monitoring (flow and/or temperature) may be appropriate if there were questions on the representativeness of the current effluent data.
- Collection of site-specific ambient temperature: default background temperatures for streams in Wisconsin, so actual data from the direct receiving water may provide for relaxed thermal limits but only if the site-specific temperatures are lower than the small stream defaults used in the above tables
- A variance to the water quality standard: This is typically considered to be the least preferable and most complex option as it requires the evaluation of the other alternatives.

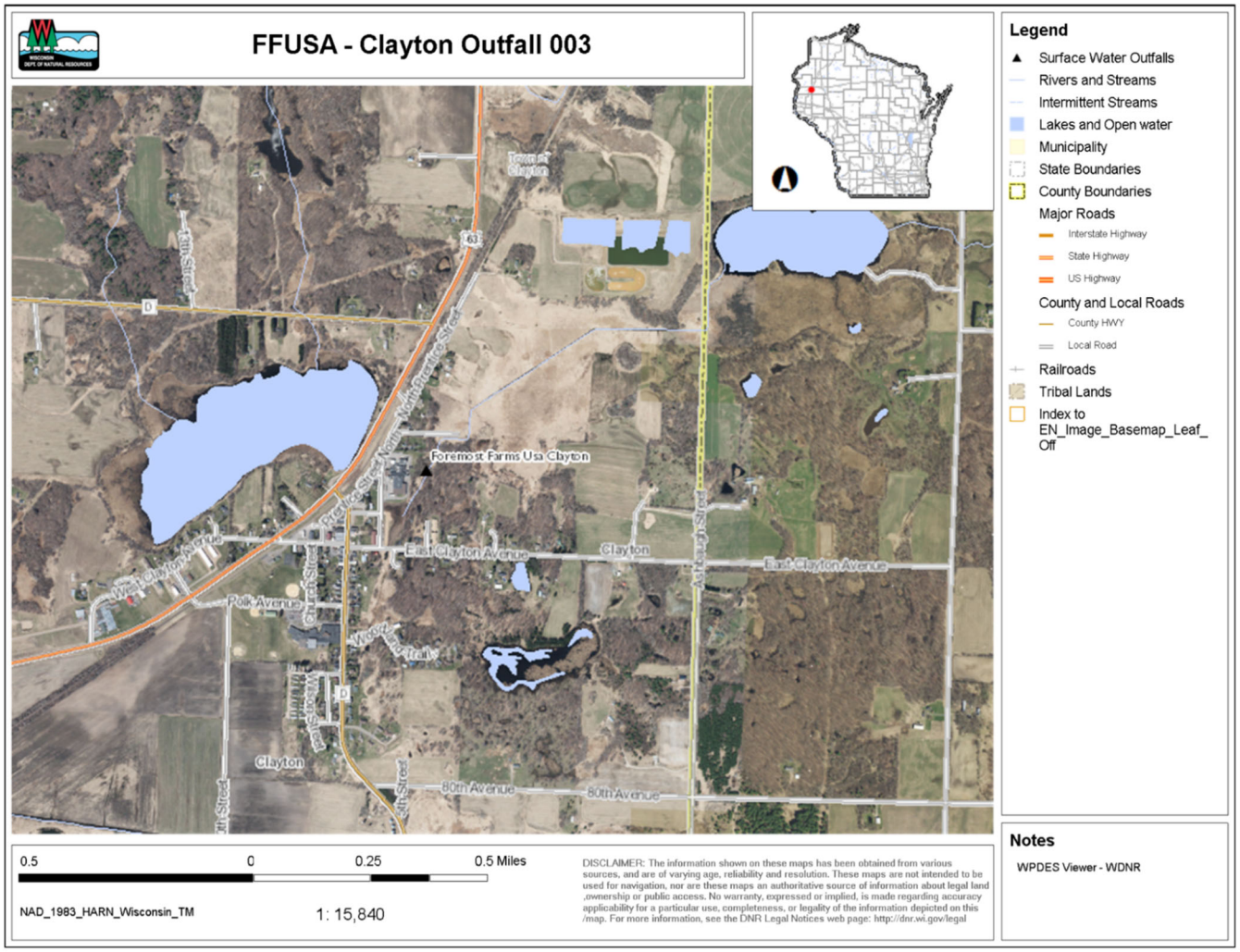
These options are explained in additional detail in the August 15, 2013 Department *Guidance for Implementation of Wisconsin's Thermal Water Quality Standards*
http://dnr.wi.gov/topic/surfacewater/documents/ThermalGuidance2edition8152013.pdf

PART 6 – 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).*

Outfall 003 is comprised solely of NCCW with 1 additive used for dechlorination. The discharge does not have a history of WET failures and toxic compounds are not at levels of concern. Since there is believed to be a very low risk of toxicity, **WET testing is not recommended during the reissued permit term.**

Attachment #2



Attachment #3

Temperature Limits for Receiving Waters with Unidirectional Flow

(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	Foremost Farms USA - Clayton		**7-Q_{10}:**	0.00	cfs		
Outfall(s):	003		**Dilution:**	25%		**Start:** 07/07/20	07/01/20
Date Prepared:	1/3/2025		**f:**	0		**End:** 11/27/24	11/30/24
Design Flow (Qe):	0.243	MGD	**Stream type:**	Small warm water sport or forage fis			
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	0.0	:1		
			Calculation Needed?	YES			

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Ta (default)	Sub-Lethal WQC	Acute WQC		7-day Rolling Average (Qesl)	Daily Maximum Flow Rate (Qea)		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(cfs)	(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	0	0.242	0.289	0	83	83	49	76
FEB	34	50	76	0	0.325	0.469	0	89	89	50	76
MAR	38	52	77	0	0.310	0.375	0	89	89	52	77
APR	48	55	79	0	0.318	0.386	0	87	89	55	79
MAY	58	65	82	0	0.369	0.549	0	73	73	65	82
JUN	66	76	84	0	0.323	0.367	0	78	78	76	84
JUL	69	81	85	0	0.342	0.417	0	86	87	81	85
AUG	67	81	84	0	0.283	0.390	0	75	75	81	84
SEP	60	73	82	0	0.300	0.352	0	88	88	73	82
OCT	50	61	80	0	0.284	0.454	0	89	89	61	80
NOV	40	49	77	0	0.325	0.428	0	87	87	49	77
DEC	35	49	76	0	0.300	0.382	0	84	84	49	76

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: October 24, 2024

TO: File

FROM: Woody Myers - WCR

SUBJECT: Foremost Farms USA Clayton - Land Treatment System Evaluation Report, WPDES Permit # WI-0003018

Site Information

The Foremost Farms USA Clayton facility is regulated as an industrial facility and is located at 100 North Main Street, Clayton, Polk County. Wastewater is currently treated and discharged to groundwater via infiltration by way of spray irrigation or absorption ponds (seepage cells) located in the SW ¼ of the NW ¼ and the NW ¼ of the SW ¼ of Section 15, T33N, R14W Town of Clayton and SW ¼ of the NE ¼ of Section 13, T33N, R15W, Town of Clayton respectively.

Land Treatment Effluent & Groundwater Evaluation Summary

Table 1 Land Treatment Outfall Sampling Point Parameters and Limits
Outfall 001 Spray Irrigation

Parameter	Current Permit WI-0003018-09-1		Proposed Permit WI-0003018-10	
	Limits and Units	Limit Type	Limits and Units	Limit Type
Flow Rate	0.329 MGD	Monthly Avg LT	***- MGD**	
Hydraulic Application Rate (Apr-Oct)	- gal/ac/day	Monthly Avg	***6,000** gal/ac/day	Monthly Avg
Hydraulic Application Rate (Nov-Mar)	-	Monthly Avg	***0** gal/ac/day	Monthly Avg
Nitrogen, Total	- mg/l		- mg/l	
Chloride	- mg/l		- mg/l	
***Nitrogen, Max Applied to Any Zone**	Not Listed in Outfall Table		**165 lbs/ac/yr**	**Annual Total**
***Chloride, Max Applied to Any Zone**	Not required		- **lbs/ac/yr**	**Annual Total**

*Proposed permit changes

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Table 2 Land Treatment Outfall Sampling Point Parameters and Limits
Outfall 002 Absorption Ponds)

Parameter	Current Permit WI-0003018-09-1		Proposed Permit WI-0003018-10	
	Limits and Units	Limit Type	Limits and Units	Limit Type
***Flow Rate**	- gpd		- ***MGD**	
BOD_5	- mg/l		- mg/l	
Total Suspended Solids	- mg/l		- mg/l	
Nitrogen, Total Kjeldahl	- mg/l		- mg/l	
Chloride	900 mg/l	Weekly Avg	mg/l	Weekly Avg
Nitrogen, Nitrite + Nitrate	20 mg/l	Weekly Avg	mg/l	Weekly Avg
Nitrogen. Ammonia	19.4 mg/l	Weekly Avg	mg/l	Weekly Avg
***Nitrogen, Max Applied to Any Zone**	Not Listed in Outfall Table		**lbs/ac/yr**	**Annual Total**
***Chloride, Max Applied to Any Zone**	Not Listed in Outfall Table		**lbs/ac/yr**	**Annual Total**

* Proposed permit changes

These recommendations are based on evaluation of groundwater compliance and should not replace the needs for up-stream treatment evaluation.

Table 3 Monitoring Wells
Outfall 001 Spray Irrigation

Well	Current Permit WI-0003018-09-1		Proposed Permit WI-0003018-10	
	Well Location	Well Designation	Well Location	Well Designation
810 (MW 6A)	Down-gradient	Non-Point of Standard	Down-gradient	***Point of Standard**
814 (MW 9)	Down-gradient	Point of Standard	Down-gradient	Point of Standard
815 (MW 10)	Down-gradient	Point of Standard	Down-gradient	Point of Standard
816 (MW 11)	Up-gradient	Background	Up-gradient	Background
821*	New Wells		Up-gradient	Non-Point of Standard
822*			Down-gradient	Non-Point of Standard
823*			Down-gradient	Point of Standard

* Changes from previous Permit

Table 4 Monitoring Wells
Outfall 002 Absorption Ponds

Well	Current Permit WI-0003018-09-1		Proposed Permit WI-0003018-10	
	Well Location	Well Designation	Well Location	Well Designation
818 (MW 01)	Down-gradient	Non-Point of Standard	***Not Determined**	
819 (MW 02)	Up-gradient	Background	***Not Determined**	
820 (MW 03)	Down-gradient	Point of Standard	***Not Determined**	

* Changes from previous Permit

Table 5 Groundwater Quality Standards
Outfall 001 Spray Irrigation

Parameter	Current Permit WI-0003018-09-1		Proposed WI-0003018-10	
	PAL	ES	PAL	ES
Depth to Groundwater	N/A	N/A	N/A	N/A
Groundwater Elevation	N/A	N/A	N/A	N/A
Nitrogen, Nitrite + Nitrate	4.0 mg/l (ACL)	10.0 mg/l	***2.0 mg/l**	10.0 mg/l
Nitrogen Total Kjeldahl	N/A	N/A	N/A	N/A
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrogen, Organic	2.4 mg/l	N/A	***2.3 mg/l**	N/A
Chloride	125 mg/l	250 mg/l	125 mg/l	250 mg/l
pH	5.7-7.7 su	N/A	***5.9-7.9 su**	N/A
Total Dissolved Solids	370 mg/l	N/A	***470 mg/l**	N/A

* Changes from previous Permit

Table 6 Groundwater Quality Standards
Outfall 002 Absorption Ponds

Parameter	Current Permit WI-0003018-09-1		Proposed WI-0003018-10	
	PAL	ES	PAL	ES
Depth to Groundwater	N/A	N/A	N/A	N/A
Groundwater Elevation	N/A	N/A	N/A	N/A
Nitrogen, Nitrite + Nitrate	4.0 mg/l (ACL)	10.0 mg/l	4.0 mg/l (ACL)	10.0 mg/l
Nitrogen Total Kjeldahl	N/A	N/A	N/A	N/A
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Nitrogen, Organic	2.4 mg/l	N/A	2.4 mg/l	N/A
pH, Field	5.7-7.7 su	N/A	5.7-7.7 su	N/A
Chloride	125 mg/l	250 mg/l	125 mg/l	250 mg/l
Total Dissolved Solids	370 mg/l	N/A	3700 mg/l	N/A

No changes from previous Permit

Geology

The bedrock under this facility is the Prairie du Chien Group. This group includes the Shakopee and Oneota Formations with the Willow River, New Richmond, Hager City and Stockton Hill Members. The Prairie du Chien is comprised of dolomite with some variation in the New Richmond Member which ranges from a sandstone to siltstone (*Bedrock Geology of Wisconsin, Regional Map Series Northwest Sheet*, Wisconsin Geological and Natural History Survey (WGNHS), 1987). Bedrock is anticipated to be no greater than 100 feet below ground surface (bgs) (*Depth to Bedrock in Wisconsin,* WGNHS, 1973). The regolith consists of fine to coarse sand with interbedded silt layers. Surface soil primarily consists of the Antigo silt loam (USDA NRCS Web Soil Survey).

Hydrogeology

Calculated groundwater elevation ranges between 1177 and 1190 feet above mean sea level (msl). Depth to groundwater was reported to be between 6 and 30 feet bgs. Groundwater flow direction for the spray irrigation system (Outfall 001) is predominantly to the south. The groundwater flow for the absorption ponds (Outfall 002) was not calculated due to the infrequent sampling results from groundwater monitoring well 819 (MW 02) but is assumed to be to the south given the flow direction of estimated for Outfall 001. Regional groundwater flow is to the west in this region of Polk County (*Generalized Water-Table Elevation Map of Polk County, Wisconsin,* WGNHS, 2000). The site is directly adjacent and north of Little Moon Lake. There are two wells (municipal, other than municipal, private and high-capacity) within a 1,500-foot range of this facility's groundwater discharge.

Land Treatment Effluent Quality and Loading Rates

Outfalls 001 and 002 are the discharge associated with the groundwater monitoring network. The following tables are the average for loading summations for the land treatment system.

Table 7 Land Treatment Loading Averages
Outfall 001 Spray Irrigation

Year	Flow (MGD)	Total Nitrogen (mg/l)	Chloride (mg/l)
2024#	0.232	8.3	412
2023	0.249	22.5	489
2022	0.202	19.6	425
2021	0.199	21.7	692
2020	0.183	26.8	1087
2019	0.212	27.0	1163

# Indicates partial year

Table 8 Land Treatment Loading Averages
Outfall 002 Absorption Ponds

Year	Flow (gpd)	Nitrite + Nitrate Nitrogen (mg/l)	Chloride (mg/l)	BOD_5 (mg/l)
2024#	175,000		426	43
2023				
2022	93,544	9.61	575	90
2021	4,677	0.24	583	72
2020	7,209		1309	92
2019			1498	138

# Indicates partial year

Groundwater Monitoring System and Sampling Frequency

Groundwater samples were collected quarterly from all wells. All of the groundwater sampling parameters were analyzed for the dissolved phase in groundwater. Established groundwater quality standards are found in Table 1 Public Health Groundwater Quality Standards s. NR 140.10 Wis. Adm. Code, and Table 2 Public Welfare Groundwater Standards s. NR 140.12 Wis. Adm. Code. The thresholds of these standards are the Enforcement Standard (ES) and the Preventative Action Limit (PAL).

Table 9 Groundwater Monitoring Well Data

Sample Point	Well Name	Elevation (feet above msl)				Length (feet)		Well Type
		Casing Top	Ground Surface	Screen Top	Screen Bottom	Screen Length	Well Depth	
810	MW 6A	1197.15	1195.0	1175.0	1165.0	10.0	15.8	P
814	MW 9		1191.0	1178.0	1173.0	5.0		P
815	MW 10		1191.0	1178.0	1173.0	5.0		P
816	MW 11		1211.0	1178.0	1173.0	5.0		P
818	MW-01	1191.26	1189.8	1186.2	1176.2	10.0	13.0	WT
819	MW-02	1203.66	1201.4	1195.4	1185.4	10.0	16.0	WT
820	MW-03	1192.97	1191.0	1189.0	1179.0	10.0	12.0	WT
821	821	1208.38	1205.5	1190.5	1180.5	10.0	25.5	WT
822	822	1203.95	1200.8	1186.3	1176.3	10.0	25.0	WT
823	823	1198.63	1195.9	1186.4	1176.4	10.0	20.0	WT

All measurements in feet
WT-Water table Observation P-Piezometer O-Other

Effluent Quality

The volume of wastewater discharged to the land treatment systems has been relatively consistent when the systems were in use. The effluent sampling results indicate a reduction in chloride concentrations from 2019 to present. The nitrogen (total nitrogen) has reduced slightly in concentration over the past five years.

Groundwater Sampling Results

Groundwater sampling results from this facility have been analyzed for each well to evaluate trends of the regulated compounds in groundwater and to calculate PALs for s. NR 140.22 Wis. Adm. Code Indicator Parameters and to evaluate potential exemptions under s. NR 140.28 Wis. Adm. Code. The groundwater was evaluated by looking at the groundwater data from February 20, 2019 – April 10, 2024.

Background Groundwater Quality

The background groundwater quality for the absorption pond system could not be analyzed due to the infrequency of collected groundwater samples. It was regularly reported that well 819 (assumed up-gradient) was dry.

The sampling results for well 816, the background well for the spray irrigation system, indicated a declining concentration of nitrite + nitrate. There were no background exceedances of the PAL for this compound. All the other sampled compounds were stable and below groundwater quality standards.

Down-gradient Groundwater Quality

For the spray irrigation system down-gradient wells the only two compounds with exceedances are chloride and nitrate + nitrate. The chloride was observed in wells 814 and 815. These results frequently exceeded the PAL and occasionally exceeded the ES. The trends appear to be stable. See Figure 1. Well 815 had frequent exceedances of the 4.0 mg/l ACL for nitrite + nitrate. It appears there may be a declining trend based on the last five sample results. See Figure 2.

There were infrequent and sporadic exceedances of groundwater quality standards for the absorption pond system wells. No trends could be established bas in the frequency of exceedances.

Land Treatment System Impact to Groundwater Quality

Concentrations and trends in the groundwater monitoring data were compared to the loading data for the land treatment system. There is a slight correlation between the effluent loading levels and the groundwater monitoring results. A delay is expected and observed from load date to groundwater results.

Proposed Groundwater Monitoring Requirements Permit WI-0003018-10

Table 10 Groundwater Quality Sampling Frequency and Limits
Outfall 001 Spray Irrigation

Sample Point	Well Name	Sample Frequency	Well Designation
810	MW 6A	Quarterly	***Point of Standard**
814	MW 9	Quarterly	Point of Standard
815	MW 10	Quarterly	Point of Standard
816	MW 11	Quarterly	Background
821	821	Quarterly	Non-Point of Standard
822	822	Quarterly	Non-Point of Standard
823	823	Quarterly	Point of Standard
Parameter	PAL	ES	Source
Depth to Groundwater	N/A	N/A	Measured
Groundwater Elevation	N/A	N/A	Measured
Nitrogen, Nitrite + Nitrate	***2.0** mg/l	10.0 mg/l	NR 140 Table 1
Nitrogen, Total Kjeldahl	N/A	N/A	Measured
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	NR 140 Table 1
Nitrogen, Organic	***2.3** mg/l	N/A	Calculated
pH, Field	***5.9-7.9** su	N/A	Calculated
Chloride	125 mg/l	250 mg/l	NR 140 Table 2
Total Dissolved Solids	***470** mg/l	N/A	Calculated

*Changes from previous permit

Table 11 Groundwater Quality Sampling Frequency and Limits
Outfall 002 Absorption Ponds

Sample Point	Well Name	Sample Frequency	Well Designation
818	MW-1	Quarterly	Not determined
819	MW-2	Quarterly	Not determined
820	MW-3	Quarterly	Not determined
Parameter	PAL	ES	Source
Depth to Groundwater	N/A	N/A	Measured
Groundwater Elevation	N/A	N/A	Measured
Nitrogen, Nitrite + Nitrate	4.0 mg/l	10.0 mg/l	Carried over, NR 140 Table 1
Nitrogen, Total Kjeldahl	N/A	N/A	Measured
Nitrogen, Ammonia	0.97 mg/l	9.7 mg/l	NR 140 Table 1
Nitrogen, Organic	2.4 mg/l	N/A	Carried over
pH, Field	6.0-8.0 su	N/A	Carried over
Chloride	125 mg/l	250 mg/l	NR 140 Table 2
Total Dissolved Solids	550 mg/l	N/A	Carried over

No changes from previous permit

Indicator Parameter PALs

Indicator Parameter PALs are developed following the procedures described in s. NR 140.20(2), Wis. Adm. Code. Indicator parameters do not have Enforcement Standards. The PAL for an indicator parameter is a benchmark for evaluating site specific trends. When significant increases in the trends are observed, the facility and the department's response action under s. NR 140.24 Wis. Adm. Code should be to investigate the source of the compound. The following equations were used to calculate the indicator parameter PALs:

$\sum$ [Mean of the background groundwater quality + Minimum Increase (NR 140.20 Table 3)] = PAL

And for pH:

$\sum$ [Mean of the background groundwater quality $\pm$ 1 su] = upper and lower PAL

Alternative Concentration Limits

Alternative concentration Limits (ACLs) can be developed and provided for a groundwater monitoring system utilizing the procedures described in s. NR 140.28, Wis. Adm. Code. ACLs were calculated using the following equation:

$\sum$ [Mean of the background groundwater quality +(2) x Standard Deviation of Results] = ACL

Conclusions

The sampling point 001 parameter have been changed slightly. There will no longer be a flow limit and the hydraulic application rate has been converted form inches per load cycle to gallons per acre per day. This limit is entered into the sampling point 001 parameters for the spray irrigation season. A zero has been added for the hydraulic application rate for the "off" irrigation season.

Due to elevated chloride results in groundwater monitoring wells 814 and 815, the department is adding the requirement to calculate and report the mass of chloride loaded to the spray irrigation fields. There will be no limit at this time. This is the s. NR 140.26 Wis. Adm. Code response action.

Groundwater monitoring well 819 (MW 02) has been consistently dry in the past five years. Given that this is 1 of 3 groundwater monitoring wells for the absorption ponds system it is recommended that this well be abandoned and a new (deeper) well be installed directly adjacent to 819.

Well 810 has been redesignated as a point of standards application well per s, NR 140.22 Wis. Adm. Code.

There are several changes to the groundwater quality limits for the wells associated with Outfall 001 spray irrigation system. The ACL for nitrite + nitrate has been rescinded due to improved background sample results. The s. NR 140.10 Wis. Adm. Code PAL of 2.0 mg/l will be used. The department is aware that given the reduction in the groundwater quality limit the facility may experience exceedances of the PAL for nitrite + nitrate in the future. No response action is being required because there have not been any exceedances, however, if these exceedances should occur the department would recommend optimization of the load/rest cycles to improve nitrogen reduction. The PAL for organic nitrogen has been reduced slightly based on background groundwater quality and the TDS has been increased and the pH range increased based on background groundwater quality.

No changes are being recommended for the groundwater quality limits for the absorption pond system (Outfall 002) wells because of the lack of background data.

Compliance Schedule Recommendations

The ss. NR 214.12 (5)(b) and NR 214.14 (5)(d) Wis. Adm. Code requires a land management plan for facilities with land treatment systems. The facility should review their plan within 90 days of permit reissuance and any revisions should be submitted to the department for approval.

Groundwater monitoring well 819 should be replaced by a deeper well directly adjacent to the current well. The facility should schedule with a well driller to have the well installed and well 819 abandoned. The new well should be installed no later than May 2025. The well construction and development forms boring log for the new well and abandonment for 819 should be submitted to the department. The new well will need to have the top of casing elevation surveyed to feet above msl.

The groundwater monitoring well latitude/longitude needs to be provided in decimal degrees. These should be provided to the department within 90 days after the permit reissuance.

Figure 1
Chloride

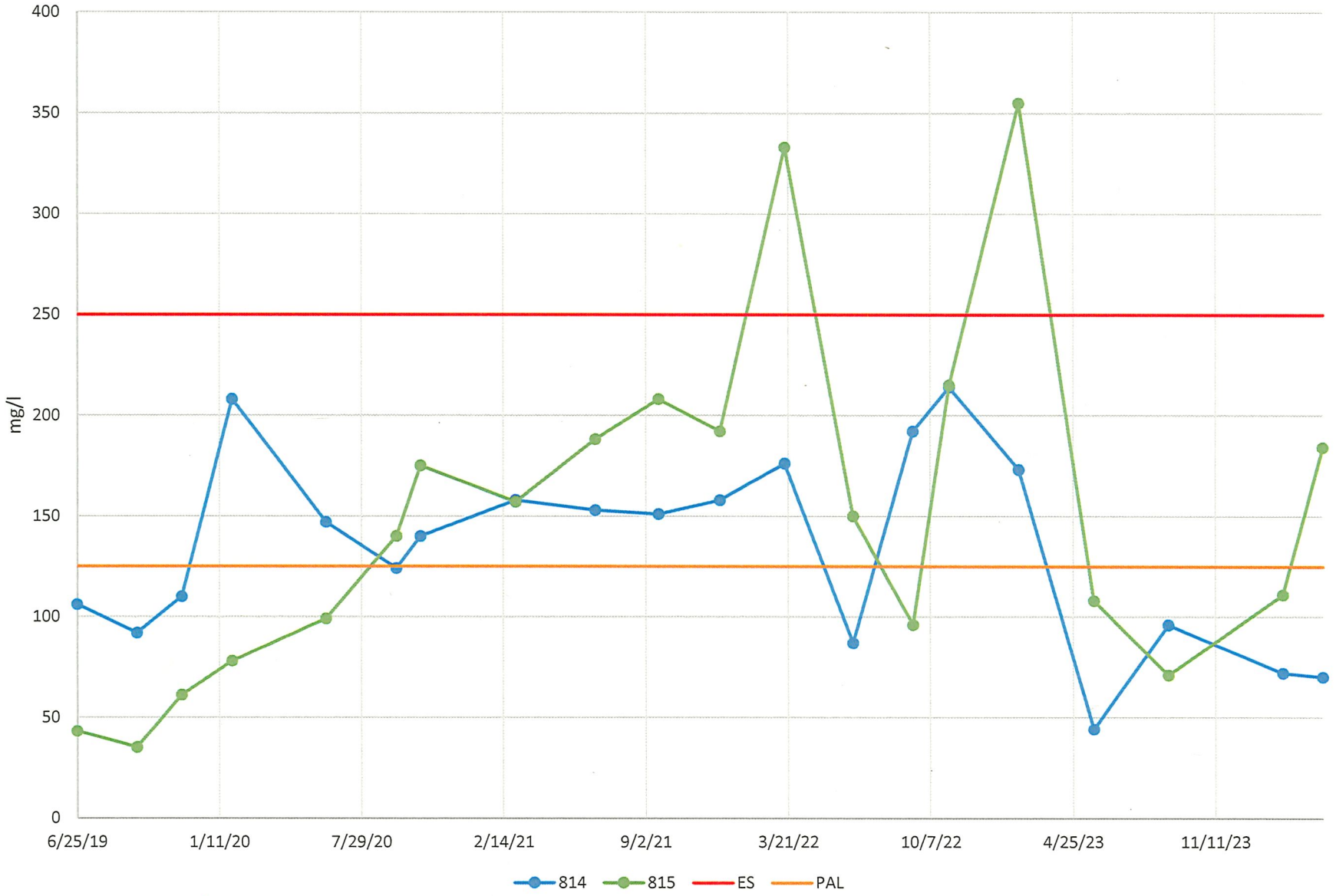
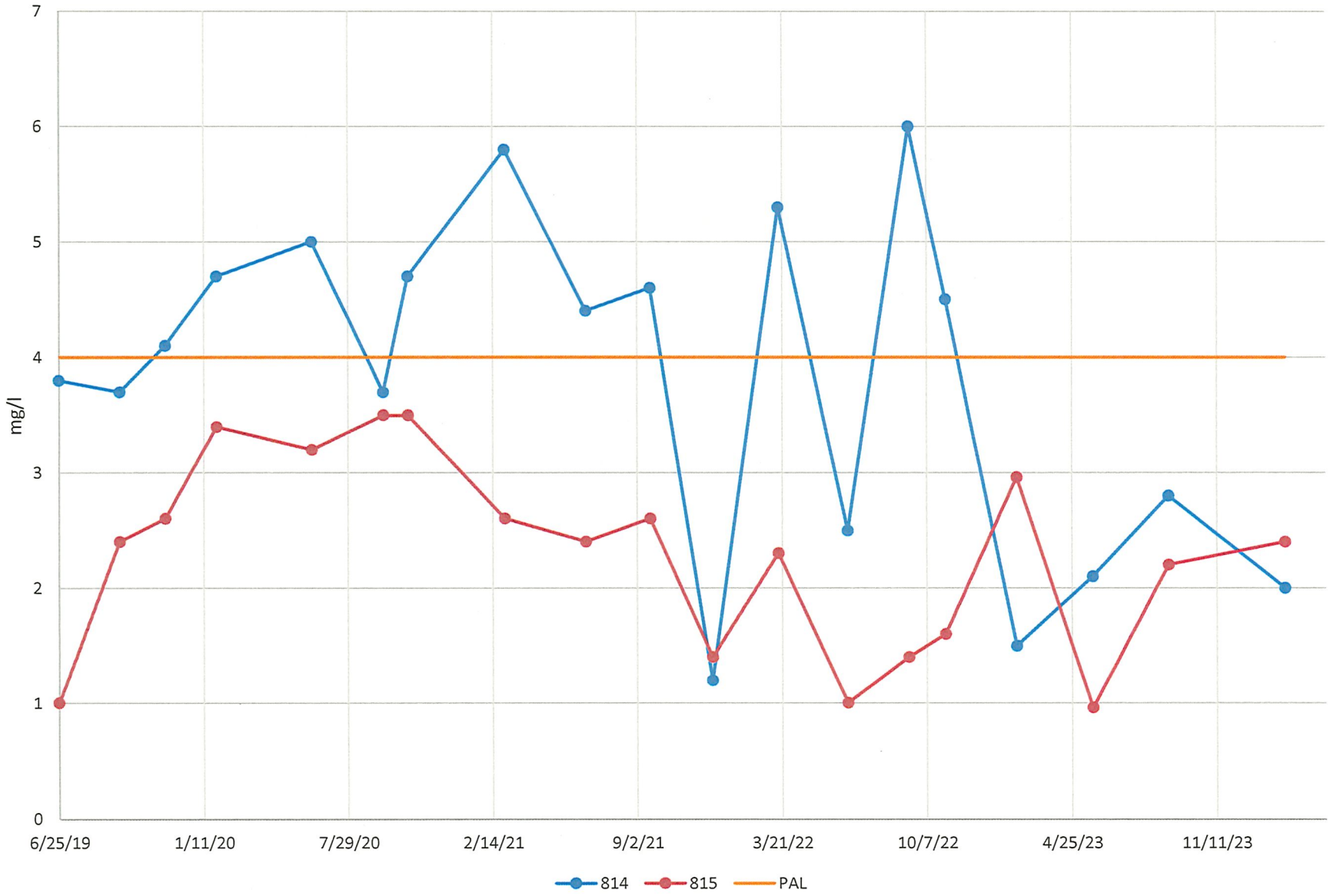


Figure 2
Nitrite + Nitrate



Appendix A
The following results were provided by the facility or their agent. The mean and standard deviation were calculated electronically.

well		param	parm_	sample_date	resul	result_amt
810	810 (MW-6A)	Chloride Dissolved	mg/L	02/20/2019		5
810	810 (MW-6A)	Chloride Dissolved	mg/L	06/25/2019	<	7.5
810	810 (MW-6A)	Chloride Dissolved	mg/L	09/17/2019	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	11/19/2019	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	01/29/2020	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	06/09/2020	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	09/16/2020	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	10/20/2020		142
810	810 (MW-6A)	Chloride Dissolved	mg/L	03/03/2021	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	06/23/2021	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	09/20/2021	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	12/15/2021	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	03/16/2022	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	06/20/2022	<	4.7
810	810 (MW-6A)	Chloride Dissolved	mg/L	09/12/2022	<	2.9
810	810 (MW-6A)	Chloride Dissolved	mg/L	11/02/2022	<	12
810	810 (MW-6A)	Chloride Dissolved	mg/L	02/08/2023	<	2.9
810	810 (MW-6A)	Chloride Dissolved	mg/L	05/24/2023	<	2.9
810	810 (MW-6A)	Chloride Dissolved	mg/L	09/06/2023		4
810	810 (MW-6A)	Chloride Dissolved	mg/L	02/14/2024	<	2.9
810	810 (MW-6A)	Chloride Dissolved	mg/L	04/10/2024	<	2.9
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	02/20/2019		0.01
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	06/25/2019	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	09/17/2019		0.16
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	11/19/2019	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	01/29/2020	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	06/09/2020	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	09/16/2020	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	10/20/2020	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	03/03/2021	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	06/23/2021	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	09/20/2021	<	0.15
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	12/15/2021	<	0.1
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	03/16/2022	<	0.1
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	06/20/2022	<	0.11
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	09/12/2022	<	0.1
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	11/02/2022		0.47
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	02/08/2023		0.12
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	05/24/2023	<	0.11
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	09/06/2023	<	0.11
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	02/14/2024	<	0.11
810	810 (MW-6A)	Nitrogen, Ammonia Dissolved	mg/L	04/10/2024		0.16

well		param	parm_	sample_date	resul	result_amt
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/20/2019		0.28
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/25/2019		0.3
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/17/2019		0.39
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/19/2019	<	0.18
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	01/29/2020		0.36
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/09/2020		0.42
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/16/2020		0.38
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	10/20/2020		0.53
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/03/2021		0.4
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/23/2021		0.44
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/20/2021		0.34
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	12/15/2021		0.43
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/16/2022		0.32
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/20/2022		0.46
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/12/2022		0.25
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/02/2022		0.5
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/08/2023		0.73
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	05/24/2023		0.71
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/06/2023	<	0.35
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/14/2024	<	0.35
810	810 (MW-6A)	Nitrogen, Total Kjeldahl Dissolved	mg/L	04/10/2024		0.62
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/20/2019		1.9
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/25/2019		0.09
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/17/2019		0.15
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/19/2019		0.13
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/29/2020	<	0.11
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/09/2020	<	0.11
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/16/2020	<	0.07
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/20/2020		4.6
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/03/2021	<	0.11
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/23/2021	<	0.11
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/20/2021	<	0.11
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	12/15/2021	<	0.11
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/16/2022	<	0.03
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/20/2022	<	0.03
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/12/2022	<	0.03
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/02/2022	<	0.05
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/08/2023	<	0.05
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	05/24/2023		0.05
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/06/2023	<	0.05
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/14/2024		0.08
810	810 (MW-6A)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	04/10/2024	<	0.05

well		param	parm_	sample_date	resul	result_amt
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	02/20/2019		0.28
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	06/25/2019		0.3
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	09/17/2019		0.23
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	11/19/2019	<	0.18
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	01/29/2020		0.36
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	06/09/2020		0.42
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	09/16/2020		0.38
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	10/20/2020		0.53
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	03/03/2021		0.4
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	06/23/2021		0.44
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	09/20/2021		0.34
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	12/15/2021		0.43
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	03/16/2022		0.32
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	06/20/2022		0.46
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	09/12/2022		0.25
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	11/02/2022	<	0.25
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	02/08/2023		0.61
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	05/24/2023		0.71
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	09/06/2023	<	0.35
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	02/14/2024	<	0.35
810	810 (MW-6A)	Nitrogen, Organic Dissolved	mg/L	04/10/2024		0.46
810	810 (MW-6A)	Nitrogen, Total	mg/L	02/20/2019		2.18
810	810 (MW-6A)	Nitrogen, Total	mg/L	06/25/2019		0.39
810	810 (MW-6A)	Nitrogen, Total	mg/L	09/17/2019		0.54
810	810 (MW-6A)	Nitrogen, Total	mg/L	11/19/2019		0.13
810	810 (MW-6A)	Nitrogen, Total	mg/L	01/29/2020		0.36
810	810 (MW-6A)	Nitrogen, Total	mg/L	06/09/2020		0.42

well		param	parm_	sample_date	resul	result_amt
810	810 (MW-6A)	pH Lab	su	02/20/2019		7.1
810	810 (MW-6A)	pH Lab	su	06/25/2019		6.9
810	810 (MW-6A)	pH Lab	su	09/17/2019		6.8
810	810 (MW-6A)	pH Lab	su	11/19/2019		7.1
810	810 (MW-6A)	pH Lab	su	01/29/2020		6.9
810	810 (MW-6A)	pH Lab	su	06/09/2020		7
810	810 (MW-6A)	pH Lab	su	09/16/2020		7
810	810 (MW-6A)	pH Lab	su	10/20/2020		6.5
810	810 (MW-6A)	pH Lab	su	03/03/2021		7.1
810	810 (MW-6A)	pH Lab	su	06/23/2021		6.8
810	810 (MW-6A)	pH Lab	su	09/20/2021		7
810	810 (MW-6A)	pH Lab	su	12/15/2021		6.7
810	810 (MW-6A)	pH Lab	su	03/16/2022		7
810	810 (MW-6A)	pH Lab	su	06/20/2022		7.1
810	810 (MW-6A)	pH Lab	su	09/12/2022		7
810	810 (MW-6A)	pH Lab	su	11/02/2022		7.2
810	810 (MW-6A)	pH Lab	su	02/08/2023		6.7
810	810 (MW-6A)	pH Lab	su	05/24/2023		7
810	810 (MW-6A)	pH Lab	su	09/06/2023		6.5
810	810 (MW-6A)	pH Lab	su	02/14/2024		6.4
810	810 (MW-6A)	pH Lab	su	04/10/2024		6.8
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	02/20/2019		156
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	06/25/2019		192
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	09/17/2019		248
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	11/19/2019		200
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	01/29/2020		196
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	06/09/2020		168
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	09/16/2020		186
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	10/20/2020		419
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	03/03/2021		186
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	06/23/2021		216
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	09/20/2021		196
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	12/15/2021		214
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	03/16/2022		210
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	06/20/2022		172
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	09/12/2022		202
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	11/02/2022		234
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	02/08/2023		190
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	05/24/2023		164
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	09/06/2023		164
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	02/14/2024		188
810	810 (MW-6A)	Solids, Total Dissolved	mg/L	04/10/2024		150

well		param	parm_	sample_date	resul	result_amt
814	814 (MW 9)	Chloride Dissolved	mg/L	02/20/2019		58
814	814 (MW 9)	Chloride Dissolved	mg/L	06/25/2019		106
814	814 (MW 9)	Chloride Dissolved	mg/L	09/17/2019		92
814	814 (MW 9)	Chloride Dissolved	mg/L	11/19/2019		110
814	814 (MW 9)	Chloride Dissolved	mg/L	01/29/2020		208
814	814 (MW 9)	Chloride Dissolved	mg/L	06/09/2020		147
814	814 (MW 9)	Chloride Dissolved	mg/L	09/16/2020		124
814	814 (MW 9)	Chloride Dissolved	mg/L	10/20/2020		140
814	814 (MW 9)	Chloride Dissolved	mg/L	03/03/2021		158
814	814 (MW 9)	Chloride Dissolved	mg/L	06/23/2021		153
814	814 (MW 9)	Chloride Dissolved	mg/L	09/20/2021		151
814	814 (MW 9)	Chloride Dissolved	mg/L	12/15/2021		158
814	814 (MW 9)	Chloride Dissolved	mg/L	03/16/2022		176
814	814 (MW 9)	Chloride Dissolved	mg/L	06/20/2022		87
814	814 (MW 9)	Chloride Dissolved	mg/L	09/12/2022		192
814	814 (MW 9)	Chloride Dissolved	mg/L	11/02/2022		214
814	814 (MW 9)	Chloride Dissolved	mg/L	02/09/2023		173
814	814 (MW 9)	Chloride Dissolved	mg/L	05/24/2023		44
814	814 (MW 9)	Chloride Dissolved	mg/L	09/06/2023		96
814	814 (MW 9)	Chloride Dissolved	mg/L	02/14/2024		72
814	814 (MW 9)	Chloride Dissolved	mg/L	04/12/2024		70
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	02/20/2019		0.1
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	06/25/2019	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	09/17/2019		0.2
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	11/19/2019	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	01/29/2020	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	06/09/2020	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	09/16/2020	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	10/20/2020	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	03/03/2021	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	06/23/2021	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	09/20/2021	<	0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	12/15/2021	<	0.1
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	03/16/2022	<	0.1
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	06/20/2022	<	0.11
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	09/12/2022	<	0.1
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	11/02/2022		0.15
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	02/09/2023	<	0.11
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	05/24/2023	<	0.011
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	09/06/2023	<	0.11
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	02/14/2024	<	0.35
814	814 (MW 9)	Nitrogen, Ammonia Dissolved	mg/L	04/12/2024	<	0.11

well		param	parm_	sample_date	resul	result_amt
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/20/2019		0.81
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/25/2019		4.45
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/17/2019		4.15
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/19/2019		0.21
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	01/29/2020		0.6
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/09/2020		0.63
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/16/2020		0.31
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	10/20/2020		0.5
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/03/2021		0.28
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/23/2021		0.61
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/20/2021		4.6
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	12/15/2021		0.53
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/16/2022	<	0.25
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/20/2022		2.99
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/12/2022	<	0.25
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/02/2022		0.26
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/09/2023		0.73
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	05/24/2023		0.86
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/06/2023	<	0.35
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/14/2024	<	0.35
814	814 (MW 9)	Nitrogen, Total Kjeldahl Dissolved	mg/L	04/12/2024	<	0.35
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/20/2019		1.1
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/25/2019		3.8
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/17/2019		3.7
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/19/2019		4.1
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/29/2020		4.7
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/09/2020		5
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/16/2020		3.7
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/20/2020		4.7
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/03/2021		5.8
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/23/2021		4.4
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/20/2021		4.6
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	12/15/2021		1.2
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/16/2022		5.3
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/20/2022		2.5
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/12/2022		6
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/02/2022		4.5
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/09/2023		1.5
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	05/24/2023		2.1
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/06/2023		2.8
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/14/2024		2
814	814 (MW 9)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	04/12/2024		2.2

well		param	parm_	sample_date	resul	result_amt
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	02/20/2019		0.81
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	06/25/2019		0.65
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	09/17/2019		0.25
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	11/19/2019		0.21
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	01/29/2020		0.6
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	06/09/2020		0.63
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	09/16/2020		0.31
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	10/20/2020		0.5
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	03/03/2021		0.28
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	06/23/2021		0.61
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	09/20/2021	<	0.25
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	12/15/2021		0.53
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	03/16/2022	<	0.25
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	06/20/2022		0.49
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	09/12/2022	<	0.25
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	11/02/2022	<	0.25
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	02/09/2023		0.73
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	05/24/2023		0.86
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	09/06/2023	<	0.35
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	02/14/2024	<	0.35
814	814 (MW 9)	Nitrogen, Organic Dissolved	mg/L	04/12/2024	<	0.35
814	814 (MW 9)	Nitrogen, Total	mg/L	02/20/2019		1.91
814	814 (MW 9)	Nitrogen, Total	mg/L	06/25/2019		4.45
814	814 (MW 9)	Nitrogen, Total	mg/L	09/17/2019		4.15
814	814 (MW 9)	Nitrogen, Total	mg/L	11/19/2019		4.31
814	814 (MW 9)	Nitrogen, Total	mg/L	01/29/2020		5.3
814	814 (MW 9)	Nitrogen, Total	mg/L	06/09/2020		5.63

well		param	parm_	sample_date	resul	result_amt
814	814 (MW 9)	pH Lab	su	02/20/2019		6.7
814	814 (MW 9)	pH Lab	su	06/25/2019		6.5
814	814 (MW 9)	pH Lab	su	09/17/2019		6.5
814	814 (MW 9)	pH Lab	su	11/19/2019		6.8
814	814 (MW 9)	pH Lab	su	01/29/2020		6.3
814	814 (MW 9)	pH Lab	su	06/09/2020		6.4
814	814 (MW 9)	pH Lab	su	09/16/2020		6.7
814	814 (MW 9)	pH Lab	su	10/20/2020		6.6
814	814 (MW 9)	pH Lab	su	03/03/2021		7.2
814	814 (MW 9)	pH Lab	su	06/23/2021		6.6
814	814 (MW 9)	pH Lab	su	09/20/2021		6.6
814	814 (MW 9)	pH Lab	su	12/15/2021		6.4
814	814 (MW 9)	pH Lab	su	03/16/2022		6.7
814	814 (MW 9)	pH Lab	su	06/20/2022		6.5
814	814 (MW 9)	pH Lab	su	09/12/2022		6.8
814	814 (MW 9)	pH Lab	su	11/02/2022		6.9
814	814 (MW 9)	pH Lab	su	02/09/2023		6.7
814	814 (MW 9)	pH Lab	su	05/24/2023		6.7
814	814 (MW 9)	pH Lab	su	09/06/2023		6
814	814 (MW 9)	pH Lab	su	02/14/2024		6
814	814 (MW 9)	pH Lab	su	04/12/2024		6
814	814 (MW 9)	Solids, Total Dissolved	mg/L	02/20/2019		226
814	814 (MW 9)	Solids, Total Dissolved	mg/L	06/25/2019		316
814	814 (MW 9)	Solids, Total Dissolved	mg/L	09/17/2019		504
814	814 (MW 9)	Solids, Total Dissolved	mg/L	11/19/2019		310
814	814 (MW 9)	Solids, Total Dissolved	mg/L	01/29/2020		534
814	814 (MW 9)	Solids, Total Dissolved	mg/L	06/09/2020		440
814	814 (MW 9)	Solids, Total Dissolved	mg/L	09/16/2020		406
814	814 (MW 9)	Solids, Total Dissolved	mg/L	10/20/2020		380
814	814 (MW 9)	Solids, Total Dissolved	mg/L	03/03/2021		492
814	814 (MW 9)	Solids, Total Dissolved	mg/L	06/23/2021		664
814	814 (MW 9)	Solids, Total Dissolved	mg/L	09/20/2021		502
814	814 (MW 9)	Solids, Total Dissolved	mg/L	12/15/2021		482
814	814 (MW 9)	Solids, Total Dissolved	mg/L	03/16/2022		624
814	814 (MW 9)	Solids, Total Dissolved	mg/L	06/20/2022		262
814	814 (MW 9)	Solids, Total Dissolved	mg/L	09/12/2022		640
814	814 (MW 9)	Solids, Total Dissolved	mg/L	11/02/2022		678
814	814 (MW 9)	Solids, Total Dissolved	mg/L	02/09/2023		524
814	814 (MW 9)	Solids, Total Dissolved	mg/L	05/24/2023		184
814	814 (MW 9)	Solids, Total Dissolved	mg/L	09/06/2023		330
814	814 (MW 9)	Solids, Total Dissolved	mg/L	02/14/2024		292
814	814 (MW 9)	Solids, Total Dissolved	mg/L	04/12/2024		242

well		param	parm_	sample_date	resul	result_amt
815	815 (MW 10)	Chloride Dissolved	mg/L	03/19/2019		34
815	815 (MW 10)	Chloride Dissolved	mg/L	06/25/2019		43
815	815 (MW 10)	Chloride Dissolved	mg/L	09/17/2019		35
815	815 (MW 10)	Chloride Dissolved	mg/L	11/19/2019		61
815	815 (MW 10)	Chloride Dissolved	mg/L	01/29/2020		78
815	815 (MW 10)	Chloride Dissolved	mg/L	06/09/2020		99
815	815 (MW 10)	Chloride Dissolved	mg/L	09/16/2020		140
815	815 (MW 10)	Chloride Dissolved	mg/L	10/20/2020		175
815	815 (MW 10)	Chloride Dissolved	mg/L	03/03/2021		157
815	815 (MW 10)	Chloride Dissolved	mg/L	06/23/2021		188
815	815 (MW 10)	Chloride Dissolved	mg/L	09/20/2021		208
815	815 (MW 10)	Chloride Dissolved	mg/L	12/15/2021		192
815	815 (MW 10)	Chloride Dissolved	mg/L	03/16/2022		333
815	815 (MW 10)	Chloride Dissolved	mg/L	06/20/2022		150
815	815 (MW 10)	Chloride Dissolved	mg/L	09/12/2022		96
815	815 (MW 10)	Chloride Dissolved	mg/L	11/02/2022		215
815	815 (MW 10)	Chloride Dissolved	mg/L	02/08/2023		355
815	815 (MW 10)	Chloride Dissolved	mg/L	05/24/2023		108
815	815 (MW 10)	Chloride Dissolved	mg/L	09/06/2023		71
815	815 (MW 10)	Chloride Dissolved	mg/L	02/14/2024		111
815	815 (MW 10)	Chloride Dissolved	mg/L	04/10/2024		184
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	03/19/2019		0.1
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	06/25/2019	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	09/17/2019		0.18
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	11/19/2019	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	01/29/2020	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	06/09/2020	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	09/16/2020	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	10/20/2020	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	03/03/2021	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	06/23/2021	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	09/20/2021	<	0.15
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	12/15/2021	<	0.1
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	03/16/2022	<	0.1
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	06/20/2022	<	0.11
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	09/12/2022	<	0.1
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	11/02/2022	<	0.11
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	02/08/2023	<	0.11
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	05/24/2023		0.11
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	09/06/2023	<	0.11
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	02/14/2024	<	0.11
815	815 (MW 10)	Nitrogen, Ammonia Dissolved	mg/L	04/10/2024	<	0.11

well	param	parm_	sample_date	resul	result_amt
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/19/2019		0.65
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/25/2019		0.29
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/17/2019		0.3
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/19/2019	<	0.18
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	01/29/2020		0.52
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/09/2020		0.48
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/16/2020	<	0.18
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	10/20/2020		0.25
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/03/2021		0.2
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/23/2021		0.59
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/20/2021	<	0.25
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	12/15/2021		0.57
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/16/2022	<	0.25
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/20/2022		1.45
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/12/2022	<	0.25
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/02/2022		0.29
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/08/2023		0.66
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	05/24/2023		0.53
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/06/2023	<	0.35
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/14/2024	<	0.35
815 815 (MW 10)	Nitrogen, Total Kjeldahl Dissolved	mg/L	04/10/2024	<	0.35
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/19/2019		0.07
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/25/2019		1
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/17/2019		2.4
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/19/2019		2.6
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/29/2020		3.4
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/09/2020		3.2
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/16/2020		3.5
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/20/2020		3.5
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/03/2021		2.6
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/23/2021		2.4
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/20/2021		2.6
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	12/15/2021		1.4
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/16/2022		2.3
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/20/2022		1
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/12/2022		1.4
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/02/2022		1.6
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/08/2023		2.96
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	05/24/2023		0.96
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/06/2023		2.2
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/14/2024		2.4
815 815 (MW 10)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	04/10/2024		3.3

well	param	parm_	sample_date	resul	result_amt
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	03/19/2019		0.65
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	06/25/2019		0.29
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	09/17/2019		0.12
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	11/19/2019	<	0.18
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	01/29/2020		0.52
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	06/09/2020		0.48
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	09/16/2020	<	0.18
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	10/20/2020		0.25
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	03/03/2021		0.2
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	06/23/2021		0.59
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	09/20/2021	<	0.25
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	12/15/2021		0.57
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	03/16/2022	<	0.25
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	06/20/2022		0.45
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	09/12/2022	<	0.25
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	11/02/2022		0.29
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	02/08/2023		0.66
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	05/24/2023		0.53
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	09/06/2023	<	0.35
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	02/14/2024	<	0.35
815 815 (MW 10)	Nitrogen, Organic Dissolved	mg/L	04/10/2024	<	0.35
815 815 (MW 10)	Nitrogen, Total	mg/L	03/19/2019		0.65
815 815 (MW 10)	Nitrogen, Total	mg/L	06/25/2019		1.29
815 815 (MW 10)	Nitrogen, Total	mg/L	09/17/2019		2.7
815 815 (MW 10)	Nitrogen, Total	mg/L	11/19/2019		2.6
815 815 (MW 10)	Nitrogen, Total	mg/L	01/29/2020		3.92
815 815 (MW 10)	Nitrogen, Total	mg/L	06/09/2020		3.68
815 815 (MW 10)	pH Lab	su	03/19/2019		7.1
815 815 (MW 10)	pH Lab	su	06/25/2019		6
815 815 (MW 10)	pH Lab	su	09/17/2019		6.5
815 815 (MW 10)	pH Lab	su	11/19/2019		6.5
815 815 (MW 10)	pH Lab	su	01/29/2020		6.2
815 815 (MW 10)	pH Lab	su	06/09/2020		6.1
815 815 (MW 10)	pH Lab	su	09/16/2020		6.5
815 815 (MW 10)	pH Lab	su	10/20/2020		6.2
815 815 (MW 10)	pH Lab	su	03/03/2021		6.5
815 815 (MW 10)	pH Lab	su	06/23/2021		6.1
815 815 (MW 10)	pH Lab	su	09/20/2021		6.3
815 815 (MW 10)	pH Lab	su	12/15/2021		6.3
815 815 (MW 10)	pH Lab	su	03/16/2022		6.4
815 815 (MW 10)	pH Lab	su	06/20/2022		6.6
815 815 (MW 10)	pH Lab	su	09/12/2022		6.8
815 815 (MW 10)	pH Lab	su	11/02/2022		6.7
815 815 (MW 10)	pH Lab	su	02/08/2023		6.5
815 815 (MW 10)	pH Lab	su	05/24/2023		6.5
815 815 (MW 10)	pH Lab	su	09/06/2023		6.2
815 815 (MW 10)	pH Lab	su	02/14/2024		6
815 815 (MW 10)	pH Lab	su	04/10/2024		6.4

well		param	parm_	sample_date	resul	result_amt
815	815 (MW 10)	Solids, Total Dissolved	mg/L	03/19/2019		250
815	815 (MW 10)	Solids, Total Dissolved	mg/L	06/25/2019		192
815	815 (MW 10)	Solids, Total Dissolved	mg/L	09/17/2019		240
815	815 (MW 10)	Solids, Total Dissolved	mg/L	11/19/2019		204
815	815 (MW 10)	Solids, Total Dissolved	mg/L	01/29/2020		234
815	815 (MW 10)	Solids, Total Dissolved	mg/L	06/09/2020		268
815	815 (MW 10)	Solids, Total Dissolved	mg/L	09/16/2020		338
815	815 (MW 10)	Solids, Total Dissolved	mg/L	10/20/2020		382
815	815 (MW 10)	Solids, Total Dissolved	mg/L	03/03/2021		342
815	815 (MW 10)	Solids, Total Dissolved	mg/L	06/23/2021		550
815	815 (MW 10)	Solids, Total Dissolved	mg/L	09/20/2021		430
815	815 (MW 10)	Solids, Total Dissolved	mg/L	12/15/2021		452
815	815 (MW 10)	Solids, Total Dissolved	mg/L	03/16/2022		752
815	815 (MW 10)	Solids, Total Dissolved	mg/L	06/20/2022		326
815	815 (MW 10)	Solids, Total Dissolved	mg/L	09/12/2022		288
815	815 (MW 10)	Solids, Total Dissolved	mg/L	11/02/2022		514
815	815 (MW 10)	Solids, Total Dissolved	mg/L	02/08/2023		276
815	815 (MW 10)	Solids, Total Dissolved	mg/L	05/24/2023		292
815	815 (MW 10)	Solids, Total Dissolved	mg/L	09/06/2023		252
815	815 (MW 10)	Solids, Total Dissolved	mg/L	02/14/2024		304
815	815 (MW 10)	Solids, Total Dissolved	mg/L	04/10/2024		526
816	816 (MW 11)	Chloride Dissolved	mg/L	03/19/2019		34
816	816 (MW 11)	Chloride Dissolved	mg/L	06/25/2019		30
816	816 (MW 11)	Chloride Dissolved	mg/L	09/17/2019		28
816	816 (MW 11)	Chloride Dissolved	mg/L	11/19/2019		26
816	816 (MW 11)	Chloride Dissolved	mg/L	01/29/2020		30
816	816 (MW 11)	Chloride Dissolved	mg/L	06/09/2020		35
816	816 (MW 11)	Chloride Dissolved	mg/L	09/16/2020		36
816	816 (MW 11)	Chloride Dissolved	mg/L	10/20/2020		38
816	816 (MW 11)	Chloride Dissolved	mg/L	03/03/2021		32
816	816 (MW 11)	Chloride Dissolved	mg/L	06/23/2021		36
816	816 (MW 11)	Chloride Dissolved	mg/L	09/20/2021		37
816	816 (MW 11)	Chloride Dissolved	mg/L	03/16/2022		35
816	816 (MW 11)	Chloride Dissolved	mg/L	06/20/2022		30
816	816 (MW 11)	Chloride Dissolved	mg/L	09/12/2022		32
816	816 (MW 11)	Chloride Dissolved	mg/L	11/02/2022		31
816	816 (MW 11)	Chloride Dissolved	mg/L	02/08/2023		32
816	816 (MW 11)	Chloride Dissolved	mg/L	05/24/2023		33
816	816 (MW 11)	Chloride Dissolved	mg/L	09/06/2023		35
816	816 (MW 11)	Chloride Dissolved	mg/L	02/14/2024		32
816	816 (MW 11)	Chloride Dissolved	mg/L	04/10/2024		29
				Mean		32.55
				St. Dev		3.106042

well		param	parm_	sample_date	resul	result_amt
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	03/19/2019		0.1
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	06/25/2019	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	09/17/2019		0.16
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	11/19/2019	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	01/29/2020	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	06/09/2020	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	09/16/2020	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	10/20/2020	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	03/03/2021	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	06/23/2021	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	09/20/2021	<	0.15
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	03/16/2022	<	0.1
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	06/20/2022	<	0.11
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	09/12/2022	<	0.1
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	11/02/2022	<	0.11
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	02/08/2023	<	0.11
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	05/24/2023	<	0.11
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	09/06/2023	<	0.011
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	02/14/2024	<	0.11
816	816 (MW 11)	Nitrogen, Ammonia Dissolved	mg/L	04/10/2024	<	0.11
				Mean		0.12405
				St. Dev		0.033951
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/19/2019		0.65
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/25/2019		0.24
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/17/2019	<	0.18
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/19/2019	<	0.18
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	01/29/2020		0.18
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/09/2020	<	0.18
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/16/2020	<	0.18
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	10/20/2020	<	0.18
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/03/2021	<	0.18
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/23/2021		0.36
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/20/2021	<	0.25
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/16/2022	<	0.25
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/20/2022		0.37
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/12/2022	<	0.25
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/02/2022	<	0.25
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/08/2023		0.6
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	05/24/2023		0.47
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/06/2023	<	0.35
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/14/2024	<	0.35
816	816 (MW 11)	Nitrogen, Total Kjeldahl Dissolved	mg/L	04/10/2024	<	0.35
				Mean		0.3
				St. Dev		0.136345

well		param	parm_	sample_date	resul	result_amt
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/19/2019		0.07
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/25/2019		1.6
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/17/2019		1.7
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/19/2019		1.5
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	01/29/2020		1.2
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/09/2020		1.4
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/16/2020		1.4
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10/20/2020		1.1
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/03/2021		0.95
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/23/2021		0.61
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/20/2021		0.55
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/16/2022		0.45
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/20/2022		0.37
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/12/2022		0.31
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/02/2022		0.22
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/08/2023		0.2
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	05/24/2023		0.38
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/06/2023		0.23
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/14/2024		0.18
816	816 (MW 11)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	04/10/2024		0.17
				Mean		0.7295
				St. Dev		0.547316
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	03/19/2019		0.65
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	06/25/2019		0.24
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	09/17/2019	<	0.018
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	11/19/2019	<	0.18
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	01/29/2020		0.18
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	06/09/2020	<	0.18
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	09/16/2020	<	0.18
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	10/20/2020	<	0.18
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	03/03/2021	<	0.18
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	06/23/2021		0.36
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	09/20/2021	<	0.25
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	03/16/2022	<	0.25
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	06/20/2022	<	0.25
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	09/12/2022	<	0.25
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	11/02/2022	<	0.25
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	02/08/2023		0.6
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	05/24/2023		0.47
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	09/06/2023	<	0.35
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	02/14/2024	<	0.35
816	816 (MW 11)	Nitrogen, Organic Dissolved	mg/L	04/10/2024	<	0.35
				Mean		0.2859
				St. Dev		0.146722

well		param	parm_	sample_date	resul	result_amt
816	816 (MW 11)	Nitrogen, Total	mg/L	03/19/2019		0.65
816	816 (MW 11)	Nitrogen, Total	mg/L	06/25/2019		1.84
816	816 (MW 11)	Nitrogen, Total	mg/L	09/17/2019		1.7
816	816 (MW 11)	Nitrogen, Total	mg/L	11/19/2019		1.5
816	816 (MW 11)	Nitrogen, Total	mg/L	01/29/2020		1.38
816	816 (MW 11)	Nitrogen, Total	mg/L	06/09/2020		1.4
				Mean		1.411667
				St. Dev		0.377643
816	816 (MW 11)	pH Lab	su	03/19/2019		7.1
816	816 (MW 11)	pH Lab	su	06/25/2019		7
816	816 (MW 11)	pH Lab	su	09/17/2019		6.9
816	816 (MW 11)	pH Lab	su	11/19/2019		7
816	816 (MW 11)	pH Lab	su	01/29/2020		6.9
816	816 (MW 11)	pH Lab	su	06/09/2020		6.8
816	816 (MW 11)	pH Lab	su	09/16/2020		7.1
816	816 (MW 11)	pH Lab	su	10/20/2020		7
816	816 (MW 11)	pH Lab	su	03/03/2021		6.8
816	816 (MW 11)	pH Lab	su	06/23/2021		6.8
816	816 (MW 11)	pH Lab	su	09/20/2021		6.8
816	816 (MW 11)	pH Lab	su	03/16/2022		6.9
816	816 (MW 11)	pH Lab	su	06/20/2022		6.9
816	816 (MW 11)	pH Lab	su	09/12/2022		6.7
816	816 (MW 11)	pH Lab	su	11/02/2022		7.1
816	816 (MW 11)	pH Lab	su	02/08/2023		6.8
816	816 (MW 11)	pH Lab	su	05/24/2023		7
816	816 (MW 11)	pH Lab	su	09/06/2023		6.3
816	816 (MW 11)	pH Lab	su	02/14/2024		6.7
816	816 (MW 11)	pH Lab	su	04/10/2024		6.6
				Mean		6.86
				St. Dev		0.188149

well		param	parm_	sample_date	resul	result_amt
816	816 (MW 11)	Solids, Total Dissolved	mg/L	03/19/2019		250
816	816 (MW 11)	Solids, Total Dissolved	mg/L	06/25/2019		254
816	816 (MW 11)	Solids, Total Dissolved	mg/L	09/17/2019		328
816	816 (MW 11)	Solids, Total Dissolved	mg/L	11/19/2019		248
816	816 (MW 11)	Solids, Total Dissolved	mg/L	01/29/2020		214
816	816 (MW 11)	Solids, Total Dissolved	mg/L	06/09/2020		238
816	816 (MW 11)	Solids, Total Dissolved	mg/L	09/16/2020		290
816	816 (MW 11)	Solids, Total Dissolved	mg/L	10/20/2020		256
816	816 (MW 11)	Solids, Total Dissolved	mg/L	03/03/2021		238
816	816 (MW 11)	Solids, Total Dissolved	mg/L	06/23/2021		262
816	816 (MW 11)	Solids, Total Dissolved	mg/L	09/20/2021		258
816	816 (MW 11)	Solids, Total Dissolved	mg/L	03/16/2022		294
816	816 (MW 11)	Solids, Total Dissolved	mg/L	06/20/2022		202
816	816 (MW 11)	Solids, Total Dissolved	mg/L	09/12/2022		274
816	816 (MW 11)	Solids, Total Dissolved	mg/L	11/02/2022		320
816	816 (MW 11)	Solids, Total Dissolved	mg/L	02/08/2023		270
816	816 (MW 11)	Solids, Total Dissolved	mg/L	05/24/2023		270
816	816 (MW 11)	Solids, Total Dissolved	mg/L	09/06/2023		276
816	816 (MW 11)	Solids, Total Dissolved	mg/L	02/14/2024		266
816	816 (MW 11)	Solids, Total Dissolved	mg/L	04/10/2024		260
				Mean		263.4
				St. Dev		29.57093
818	MW-01 (818)	Chloride Dissolved	mg/L	12/15/2021		36
818	MW-01 (818)	Chloride Dissolved	mg/L	06/20/2022		47
818	MW-01 (818)	Chloride Dissolved	mg/L	09/12/2022		93
818	MW-01 (818)	Chloride Dissolved	mg/L	11/02/2022		78
818	MW-01 (818)	Chloride Dissolved	mg/L	02/09/2023		195
818	MW-01 (818)	Chloride Dissolved	mg/L	05/24/2023		74
818	MW-01 (818)	Chloride Dissolved	mg/L	09/06/2023		73
818	MW-01 (818)	Chloride Dissolved	mg/L	02/14/2024		263
818	MW-01 (818)	Chloride Dissolved	mg/L	04/10/2024		206
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	12/15/2021	<	0.1
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	06/20/2022	<	0.11
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	09/12/2022	<	0.1
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	11/02/2022		0.22
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	02/09/2023		0.15
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	05/24/2023		0.2
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	09/06/2023	<	0.11
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	02/14/2024	<	0.11
818	MW-01 (818)	Nitrogen, Ammonia Dissolved	mg/L	04/10/2024	<	0.11

well	param	parm_	sample_date	resul	result_amt
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	12/15/2021	<	0.25
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/20/2022		0.55
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/12/2022	<	0.25
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/02/2022	<	0.25
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/09/2023		0.71
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	05/24/2023		0.77
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/06/2023	<	0.35
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/14/2024	<	0.35
818 MW-01 (818)	Nitrogen, Total Kjeldahl Dissolved	mg/L	04/10/2024	<	0.35
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	12/15/2021		0.32
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/20/2022		0.08
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/12/2022	<	0.03
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/02/2022	<	0.05
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/09/2023		0.13
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	05/24/2023		0.13
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/06/2023	<	0.05
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/14/2024	<	0.11
818 MW-01 (818)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	04/10/2024		0.06
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	12/15/2021	<	0.25
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	06/20/2022		0.47
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	09/12/2022	<	0.25
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	11/02/2022	<	0.25
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	02/09/2023		0.56
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	05/24/2023		0.57
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	09/06/2023	<	0.35
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	02/14/2024	<	0.35
818 MW-01 (818)	Nitrogen, Organic Dissolved	mg/L	04/10/2024	<	0.35
818 MW-01 (818)	pH Lab	su	12/15/2021		6.5
818 MW-01 (818)	pH Lab	su	06/20/2022		6.2
818 MW-01 (818)	pH Lab	su	09/12/2022		5.9
818 MW-01 (818)	pH Lab	su	11/02/2022		6.2
818 MW-01 (818)	pH Lab	su	02/09/2023		5.6
818 MW-01 (818)	pH Lab	su	05/24/2023		7.1
818 MW-01 (818)	pH Lab	su	09/06/2023		5.8
818 MW-01 (818)	pH Lab	su	02/14/2024		5.4
818 MW-01 (818)	pH Lab	su	04/10/2024		5.7

well	param	parm_	sample_date	resul	result_amt
818 MW-01 (818)	Solids, Total Dissolved	mg/L	12/15/2021		266
818 MW-01 (818)	Solids, Total Dissolved	mg/L	06/20/2022		160
818 MW-01 (818)	Solids, Total Dissolved	mg/L	09/12/2022		274
818 MW-01 (818)	Solids, Total Dissolved	mg/L	11/02/2022		338
818 MW-01 (818)	Solids, Total Dissolved	mg/L	02/09/2023		394
818 MW-01 (818)	Solids, Total Dissolved	mg/L	05/24/2023		278
818 MW-01 (818)	Solids, Total Dissolved	mg/L	09/06/2023		260
818 MW-01 (818)	Solids, Total Dissolved	mg/L	02/14/2024		670
818 MW-01 (818)	Solids, Total Dissolved	mg/L	04/10/2024		644
819 MW-02 (819)	Chloride Dissolved	mg/L	09/20/2021		50
819 MW-02 (819)	Chloride Dissolved	mg/L	03/16/2022		5.1
819 MW-02 (819)	Nitrogen, Ammonia Dissolved	mg/L	09/20/2021	<	0.15
819 MW-02 (819)	Nitrogen, Ammonia Dissolved	mg/L	03/16/2022	<	0.1
819 MW-02 (819)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/20/2021	<	0.25
819 MW-02 (819)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/16/2022	<	0.25
819 MW-02 (819)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/20/2021	<	0.11
819 MW-02 (819)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/16/2022	<	0.03
819 MW-02 (819)	Nitrogen, Organic Dissolved	mg/L	09/20/2021	<	0.25
819 MW-02 (819)	Nitrogen, Organic Dissolved	mg/L	03/16/2022	<	0.25
819 MW-02 (819)	pH Lab	su	09/20/2021		6
819 MW-02 (819)	pH Lab	su	03/16/2022		7.2
819 MW-02 (819)	Solids, Total Dissolved	mg/L	09/20/2021		170
819 MW-02 (819)	Solids, Total Dissolved	mg/L	03/16/2022		378
820 MW-03 (820)	Chloride Dissolved	mg/L	09/20/2021	<	4.7
820 MW-03 (820)	Chloride Dissolved	mg/L	12/15/2021	<	4.7
820 MW-03 (820)	Chloride Dissolved	mg/L	03/16/2022		5.2
820 MW-03 (820)	Chloride Dissolved	mg/L	06/20/2022		6.3
820 MW-03 (820)	Chloride Dissolved	mg/L	09/12/2022		4.9
820 MW-03 (820)	Chloride Dissolved	mg/L	11/02/2022	<	12
820 MW-03 (820)	Chloride Dissolved	mg/L	02/09/2023		6.2
820 MW-03 (820)	Chloride Dissolved	mg/L	05/24/2023		4.5
820 MW-03 (820)	Chloride Dissolved	mg/L	09/06/2023		6.2
820 MW-03 (820)	Chloride Dissolved	mg/L	02/14/2024		6.3
820 MW-03 (820)	Chloride Dissolved	mg/L	04/10/2024		8.9

well	param	parm_	sample_date	resul	result_amt
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	09/20/2021	<	0.15
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	12/15/2021	<	0.1
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	03/16/2022	<	0.1
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	06/20/2022	<	0.11
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	09/12/2022	<	0.1
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	11/02/2022		0.27
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	02/09/2023		0.14
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	05/24/2023	<	0.11
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	09/06/2023		0.23
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	02/14/2024	<	0.11
820 MW-03 (820)	Nitrogen, Ammonia Dissolved	mg/L	04/10/2024	<	0.11
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/20/2021	<	0.25
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	12/15/2021		0.39
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	03/16/2022	<	0.25
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	06/20/2022		0.03
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/12/2022	<	0.25
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	11/02/2022		0.27
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/09/2023		0.81
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	05/24/2023		0.37
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	09/06/2023	<	0.05
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	02/14/2024	<	0.35
820 MW-03 (820)	Nitrogen, Total Kjeldahl Dissolved	mg/L	04/10/2024	<	0.35
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/20/2021	<	0.11
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	12/15/2021	<	0.07
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	03/16/2022		0.08
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	06/20/2022		0.03
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/12/2022		0.04
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11/02/2022	<	0.05
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/09/2023	<	0.05
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	05/24/2023	<	0.05
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	09/06/2023	<	0.05
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	02/14/2024	<	0.05
820 MW-03 (820)	Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	04/10/2024	<	0.05
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	09/20/2021	<	0.25
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	12/15/2021		0.39
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	03/16/2022	<	0.25
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	06/20/2022	<	0.25
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	09/12/2022	<	0.25
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	11/02/2022	<	0.25
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	02/09/2023		0.67
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	05/24/2023		0.37
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	09/06/2023	<	0.35
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	02/14/2024	<	0.35
820 MW-03 (820)	Nitrogen, Organic Dissolved	mg/L	04/10/2024	<	0.35

well		param	parm_	sample_date	resul	result_amt
820	MW-03 (820)	pH Lab	su	09/20/2021		6.9
820	MW-03 (820)	pH Lab	su	12/15/2021		6.7
820	MW-03 (820)	pH Lab	su	03/16/2022		7
820	MW-03 (820)	pH Lab	su	06/20/2022		7
820	MW-03 (820)	pH Lab	su	09/12/2022		7.1
820	MW-03 (820)	pH Lab	su	11/02/2022		7.4
820	MW-03 (820)	pH Lab	su	02/09/2023		6.9
820	MW-03 (820)	pH Lab	su	09/06/2023		6.6
820	MW-03 (820)	pH Lab	su	02/14/2024		6.8
820	MW-03 (820)	pH Lab	su	04/10/2024		7
820	MW-03 (820)	Solids, Total Dissolved	mg/L	09/20/2021		382
820	MW-03 (820)	Solids, Total Dissolved	mg/L	12/15/2021		372
820	MW-03 (820)	Solids, Total Dissolved	mg/L	03/16/2022		374
820	MW-03 (820)	Solids, Total Dissolved	mg/L	06/20/2022		304
820	MW-03 (820)	Solids, Total Dissolved	mg/L	09/12/2022		370
820	MW-03 (820)	Solids, Total Dissolved	mg/L	11/02/2022		410
820	MW-03 (820)	Solids, Total Dissolved	mg/L	02/09/2023		370
820	MW-03 (820)	Solids, Total Dissolved	mg/L	05/24/2023		354
820	MW-03 (820)	Solids, Total Dissolved	mg/L	09/06/2023		392
820	MW-03 (820)	Solids, Total Dissolved	mg/L	02/14/2024		374
820	MW-03 (820)	Solids, Total Dissolved	mg/L	04/10/2024		286