Permit Fact Sheet

General Information

Permit Number	WI-0050237-10-0
Permittee Name and Address	Agropur Inc N2915 County Road AB, Luxemburg, WI 54217-7713
Permitted Facility Name and Address	Agropur Inc Luxemburg Plant N2915 County Road AB, Luxemburg, WI
Permit Term	July 01, 2026 to June 30, 2031
Discharge Location	500 feet Northwest of the intersection of Cherneyville Rd and County Rd AB
Receiving Water	Tributary of the East Twin River in East Twin River Watershed of Twin - Door - Kewaunee River Basin in Kewaunee County
Stream Flow ($Q_{7,10}$)	0 cfs
Stream Classification	Warmwater Sport Fish (WWSF)
Discharge Type	Existing, Continuous

Facility Description

Agropur Inc in Luxemburg operates a cheese manufacturing and whey processing facility in southern Kewaunee County. The wastewater treatment facility (WWTF) currently consists of low and high strength waste equalization tanks, anaerobic conditioning tank, anaerobic digester, anaerobic dissolved air floatation (DAFs) unit, anoxic selector tank, aeration basins, secondary clarification, tertiary filtration with sand filters, post aeration tank, cooling towers, sludge storage tank, and belt filter press for sludge thickening. Chemical addition of ferric chloride and polymer are still added for phosphorus removal and additional sludge thickening and solids removal, respectively. Outfall 009 discharges to an unnamed tributary of the East Twin River and consists of the combination of treated process wastewater, excess polished condensate of whey (COW), retentate from the industrial reverse osmosis (RO) unit, and noncontact cooling water (NCCW). High strength wastewater that was previously segregated and land applied is now treated in the WWTF and discharged as treated process wastewater. The facility still has the option of segregating high strength waste for land application to approved sites and storage facilities via Outfall 002 as necessary. The high strength wastewater could be comprised of whey, whey-by-products, permeate, antibiotic contaminated milk, separator desludge and/or cooker water. Sludge from the WWTF was previously land applied on approved sites via Outfall 004 but is now disposed of at a landfill. The facility still has the option of land applying sludge to approved sites via Outfall 004 if that is deemed necessary. An additional emergency outfall (005) has been retained for land application of untreated process wastewater in the event of an emergency.

Substantial Compliance Determination

After a desktop review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on October 30, 2025, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Laura Gerold, Wastewater Engineer, on December 3, 2025.

Sample Point Descriptions

Sample Point Designation

Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
703	N/A – no flow monitoring required in previous permit term	WWTF INFLUENT: Wastewater consists of a combination of cheese and whey processing wastewater. 24-hour flow proportional composite samples shall be drawn from the influent piping prior to the equalization tank. Flow rate shall be measured with a continuous flow recording device prior to the equalization tank.
009	0.74 MGD (2025)	EFFLUENT: This outfall consists of the combination of treated process wastewater, treated excess polished condensate of whey from the whey plant, treated retentate from the industrial water treatment reverse osmosis equipment and treated noncontact cooling water from the cheese plant. 24-hour flow proportional composite samples of the combination of wastewaters shall be obtained following the aeration building prior to discharge to an unnamed tributary of the East Twin River. Grab samples are taken post aeration tank. Flow is monitored with an electromagnetic meter at the manhole before the post aeration tank.
002	N/A – no land application in previous permit term	LAND APPLICATION: (Diverted High Strength Wastewater) Representative samples of the high strength wastewater shall be obtained from the truck prior to land application on department approved sites or hauled to another permitted facility or department approved manure storage structure. The wastewater could be comprised of whey, whey by-products, permeate, antibiotic contaminated milk, separator desludge &/or cooker water. Sampling is only required when land application or hauling to another approved facility occurs.
004	N/A – no land application in previous permit term	LAND APPLICATION: (WWTF Cake Sludge) Waste activated sludge from the wastewater treatment facility that is treated with a belt filter press and stored in roll-off bins. Representative samples shall be obtained from the roll-off bins prior to land application on department approved sites or hauled to another facility.
005	336,000 gal (2023)	LAND APPLICATION: (Untreated Wastewater) Representative samples of untreated process wastewater shall be obtained from the pump spigot on either the low strength or high strength equalization tanks prior to land application on department approved sites or hauled to another facility or department approved manure storage structure. Sampling is only required when land application or hauling to another approved facility occurs.
010	N/A – new outfall	LAND APPLICATION: (WWTF Liquid Sludge) Representative samples or the waste activated sludge shall be taken from the sludge storage tank prior to land application on department approved sites or hauled to another permitted facility.

Sample Point 109 has been removed, and flow rate has been consolidated to Sample Point 703.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 703- INFLUENT

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

1.1.1 Changes from Previous Permit:

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

Flow – Flow rate monitoring has been moved to this sample point instead of sampling in-plant.

1.1.2 Explanation of Limits and Monitoring Requirements

Monitoring at Sample Point 703 assists the facility with the operation of the treatment plant.

2 Surface Water - Monitoring and Limitations

2.1 Sample Point Number: 009- COMB WW to TRIB of EAST TWIN R

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Daily Max	16 mg/L	2/Week	24-Hr Flow Prop Comp	Effective October - April.
BOD5, Total	Daily Max	8.2 mg/L	2/Week	24-Hr Flow Prop Comp	Effective May - September.
BOD5, Total	Weekly Avg	10 mg/L	2/Week	24-Hr Flow Prop Comp	Effective October - April.
BOD5, Total	Weekly Avg	5.0 mg/L	2/Week	24-Hr Flow Prop Comp	Effective May - September.
BOD5, Total	Monthly Avg	10 mg/L	2/Week	24-Hr Flow Prop Comp	Effective October - April.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
BOD5, Total	Monthly Avg	5.0 mg/L	2/Week	24-Hr Flow Prop Comp	Effective May - September.
BOD5, Total	Daily Max	158 lbs/day	2/Week	Calculated	TBEL limit.
BOD5, Total	Monthly Avg	79 lbs/day	2/Week	Calculated	TBEL limit.
Suspended Solids, Total	Daily Max	16 mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	10 mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	10 mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Daily Max	201 lbs/day	2/Week	Calculated	TBEL limit.
Suspended Solids, Total	Monthly Avg	100 lbs/day	2/Week	Calculated	TBEL limit.
Suspended Solids, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of TSS and report on the last day of the month on the DMR. See TMDL Calculations section in the permit.
Suspended Solids, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of TSS discharged and report on the last day of the month on the DMR. See TMDL Calculations section in the permit.
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	Daily	Grab	Limit effective upon permit reissuance until completion of compliance schedule.
Dissolved Oxygen	Daily Min	7.0 mg/L	Daily	Grab	Limit effective July 2028 upon completion of compliance schedule.
Nitrogen, Ammonia (NH3-N) Total		mg/L	2/Week	24-Hr Flow Prop Comp	
Chloride	Daily Max	440 mg/L	2/Week	24-Hr Flow	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
				Prop Comp	
Chloride	Weekly Avg	400 mg/L	2/Week	24-Hr Flow Prop Comp	
Chloride	Monthly Avg	400 mg/L	2/Week	24-Hr Flow Prop Comp	
Chloride	Weekly Avg	3,281 lbs/day	2/Week	Calculated	
Chlorine, Total Residual	Daily Max	19 ug/L	5/Week	Grab	Limit effective following compliance schedule for Total Residual Chlorine.
Chlorine, Total Residual	Weekly Avg	7.3 ug/L	5/Week	Grab	Limit effective following compliance schedule for Total Residual Chlorine.
Chlorine, Total Residual	Monthly Avg	7.3 ug/L	5/Week	Grab	Limit effective following compliance schedule for Total Residual Chlorine.
Phosphorus, Total	Monthly Avg	0.4 mg/L	2/Week	24-Hr Flow Prop Comp	Interim limit effective upon permit reissuance through the completion of the Phosphorus Multi-Discharger Variance Interim Limit compliance schedule. See the MDV/Phosphorus sections and phosphorus schedules.
Phosphorus, Total	Monthly Avg	0.35 mg/L	2/Week	24-Hr Flow Prop Comp	Interim limit effective following Phosphorus Multi-Discharger Variance Interim Limit compliance schedule. See the MDV/Phosphorus sections and phosphorus schedules.
Phosphorus, Total		lbs/day	2/Week	Calculated	
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on the DMR. See TMDL Calculations section. For MDV reporting see Standard Requirements for 'Appropriate Formulas' to

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					calculate the Total Monthly Discharge in lbs/month.
Phosphorus, Total		lbs/yr	Annual	Calculated	Report the sum of the total monthly discharges (for the months that the MDV is in effect) for the calendar year on the Annual report form.
Temperature Maximum	Daily Max	86 deg F	Daily	Continuous	Interim limit upon permit reissuance until completion of compliance schedule.
Temperature Maximum	Daily Max	76 deg F	Daily	Continuous	Limit effective December - February following compliance schedule.
Temperature Maximum	Daily Max	77 deg F	Daily	Continuous	Limit effective March and November following compliance schedule.
Temperature Maximum	Daily Max	79 deg F	Daily	Continuous	Limit effective April following compliance schedule.
Temperature Maximum	Daily Max	82 deg F	Daily	Continuous	Limit effective May and September following compliance schedule.
Temperature Maximum	Daily Max	84 deg F	Daily	Continuous	Limit effective June and August following compliance schedule.
Temperature Maximum	Daily Max	85 deg F	Daily	Continuous	Limit effective July following compliance schedule.
Temperature Maximum	Daily Max	80 deg F	Daily	Continuous	Limit effective October following compliance schedule.
Temperature Maximum	Weekly Avg	49 deg F	Daily	Continuous	Limit effective November - January following compliance schedule.
Temperature Maximum	Weekly Avg	50 deg F	Daily	Continuous	Limit effective February following compliance schedule.
Temperature Maximum	Weekly Avg	52 deg F	Daily	Continuous	Limit effective March following compliance schedule.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Temperature Maximum	Weekly Avg	55 deg F	Daily	Continuous	Limit effective April following compliance schedule.
Temperature Maximum	Weekly Avg	65 deg F	Daily	Continuous	Limit effective May following compliance schedule.
Temperature Maximum	Weekly Avg	76 deg F	Daily	Continuous	Limit effective June following compliance schedule.
Temperature Maximum	Weekly Avg	81 deg F	Daily	Continuous	Limit effective July and August following compliance schedule.
Temperature Maximum	Weekly Avg	73 deg F	Daily	Continuous	Limit effective September following compliance schedule.
Temperature Maximum	Weekly Avg	61 deg F	Daily	Continuous	Limit effective October following compliance schedule.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.
Chronic WET	Monthly Avg	1.0 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.

2.1.1 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.

- **BOD5, Total -** Daily max and monthly average (mg/L) limits have changed and weekly average limits (mg/L) have been added.

- **Suspended Solids, Total -** Daily max and monthly average (mg/L) limits have changed and weekly average limits (mg/L) have been added.
- **pH –** Sample frequency has been increased from "2/week" to "Daily".
- **Dissolved Oxygen** – Daily minimum limit has changed and a compliance schedule to meet the new limit has been added. Sample frequency has been increased from "2/week" to "Daily".
- **Chlorine** – Chlorine monitoring and limits have been added to the permit.
- **Phosphorus TMDL Limits**- An interim limit of 0.40 mg/L goes into effect upon reissuance. An interim limit of 0.35 mg/L will go into effect following a Phosphorus MDV compliance schedule and will remain in effect unless a more stringent limit is required at a future permit issuance by ss. NR 217.13 and NR 217.16(2), Wis. Adm. Code, or the limit is relaxed following procedures outlined in ch. NR 207, Wis. Adm. Code. Discharge effluent concentration (mg/L) shall be reported 2 times per week upon permit reissuance and will be used to calculate amounts reported for mass-based parameters. An additional reporting requirement for lbs/month will be used to calculate the facility's 12-month rolling sum of total monthly discharge, which can be compared directly to the facility's designated WLA. Final TMDL WLA-based effluent limits of 0.68 lbs/day as a six-month average and 2.0 lbs/day as a monthly average will go into effect in accordance with the Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus compliance schedule.
- **Phosphorus MDV-** The permittee has applied for a multi-discharger variance (MDV) for phosphorus for this permit term and the application has been approved by the Department. An MDV interim limit of 0.40 mg/L is effective upon permit reissuance, and a limit of 0.35 mg/L will go into effect following a compliance schedule. The permittee is required to report the total amount of phosphorus discharged in lbs/month and lbs/year. By March 1 of each year the permittee shall make a payment(s) to participating county(s) of $68.40 per pound of phosphorus discharged during the previous year in excess of the target value of 0.2 mg/L.
- **Temperature –** Weekly average and daily maximum temperature limits have been added to the permit and are effective following a compliance schedule.
- **Nickel, Total Recoverable –** Nickel monitoring was removed because effluent data collected during the previous permit term showed that concentrations are below the calculated daily max, weekly avg and monthly avg limits.

2.1.2 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 March 23, 2026 and technology-based effluent limitations (TBEL) memo dated March 23, 2026.

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. pH, dissolved oxygen, and temperature sample frequencies have been increased to "daily" to meet sample frequency recommendations.

Expression of Limits- In accordance with the federal regulation 40 CFR 122.45(d) and s. NR 205.065, Wis. Adm. Code, limits in this permit are to be expressed as daily maximum and monthly average limits whenever practicable. Additional limits for BOD, TSS, chloride, and chlorine have been added in order to comply in order to comply with this requirement.

Chlorine: Available data/information indicates the discharge contains concentrations of chlorine above the applicable WQBELs. Therefore, a daily maximum effluent limit of 19 µg/L and a weekly average limit of 7.3 µg/L have been added to the permit. Sections NR 106.07(4) and NR 205.067(7), Wis. Adm. Code require WPDES permits contain daily maximum and monthly average limitations for industrial dischargers whenever practicable and necessary to protect water

quality. Therefore, a monthly average limit of 7.3 µg/L is required, set equal to the weekly average limit, to meet expression of limits requirements in addition to the daily max and weekly average limits.

Northeast Lakeshore Total Maximum Daily Load (TMDL): The permitted facility is located within the Northeast Lakeshore Total Maximum Daily Load (NEL TMDL), which was approved by EPA October 30, 2023. The TMDL establishes Waste Load Allocations (WLAs) for point source dischargers and determines the maximum amounts of phosphorus and total suspended solids that can be discharged and still protect water quality. The final effluent limits and monitoring expressed in the permit were derived from and comply with the applicable water quality criterion and are consistent with the assumptions and requirements of the EPA-approved WLAs in the TMDL, which are 211 lbs/yr for phosphorus and 41,387 lbs/yr for TSS for the permitted facility.

The approved TMDL expresses WLAs as lbs/year and lbs/day (maximum annual load divided by 365 days). As outlined in Section 4.6 of the department's 2023 *TMDL Implementation Guidance for Wastewater Permits*, TMDL limits must be given in the permit that are consistent with the TMDL WLA permit limits derived from the TMDL and need to be expressed as specified by 40 CFR 122.45 (d), s. NR 212.76 (4), and s. NR 205.065 (7),Wis. Adm. Code, unless determined to be impracticable. Impracticability has already been determined for phosphorus limits as laid out in the phosphorus impracticability agreement that was approved by USEPA in 2012 (see NPDES MOA Addendum dated July 12, 2012 at https://apps.dnr.wi.gov/swims/Documents/DownloadDocument?id=167886175.

For phosphorus, continuously discharging facilities covered by the NEL TMDL are given monthly average mass limits. If the equivalent effluent concentration is less than or equal to 0.3 mg/L, six-month average mass limits (averaging period of May through October and November through April) are also included. The equivalent effluent concentration of 0.09 mg/L was calculated for the facility, thus, TMDL based mass limits are expressed as a six-month average and a monthly average equal to three times the six-month average limits.

For TSS, continuously discharging industrial facilities covered by the NEL TMDL are given monthly average and daily max mass limits.

Facilities with NEL TMDL based effluent limits for phosphorus and TSS must report the 12-month rolling sum of total monthly discharge (lbs/yr). If reported 12-month rolling sums exceed the facility's max annual WLA, the facility's mass limits (monthly average and six-month average) may be recalculated using more appropriate CVs or monitoring frequencies when the permit is reissued to bring discharge levels into compliance with the facility's given WLA.

Phosphorus: Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorus. The final phosphorus WQBELs are 2.0 lbs/day as a monthly average and 0.68 lbs/day as a six-month average and were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has applied for the Multi-Discharger Variance (MDV) for phosphorus as provided for in s. 283.16, Wis. Stats., and approved by USEPA on September 3, 2025 for a 10-year duration. The permittee qualifies for the MDV because it is an existing source and a major facility upgrade is needed to comply with the applicable phosphorus WQBELs, thereby creating a financial burden. The interim effluent limit for total phosphorus is 0.40 mg/L as an average monthly limit upon permit reissuance and 0.35 mg/L as a monthly average following a compliance schedule. The limit was derived using DMR data from 2/1/2021 to 1/26/2026.

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

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

3 Land Application - Sludge/By-Product Solids/Liquid Waste (industrial only)

3.1 Sample Point Number: 002- HIGH STRENGTH WASTEWATER; 005- UNTREATED PROCESS WASTEWATER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		mg/L	Quarterly	Grab	
Chloride		mg/L	Quarterly	Grab	
Phosphorus, Total		mg/L	Quarterly	Grab	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Grab	
Solids, Total		Percent	Quarterly	Grab	

3.1.1 Changes from Previous Permit:

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

Sample Frequency- Sample frequency for Nitrogen, Total Kjeldahl and Chloride were changed from "monthly" to "quarterly" and Total Solids was changed from "annual" to "quarterly".

Outfall 005- Testing parameters added.

PFAS –Monitoring is required once pursuant to s. NR 214.18(5)(b), Wis. Adm. Code.

3.1.2 Explanation of Limits and Monitoring Requirements

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

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

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

3.2 Sample Point Number: 004- WWTP BIOSOLIDS (SLUDGE); 010- WWTF LIQUID SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Annual	Composite	
Chloride		Percent	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Nitrogen, Ammonia (NH3-N) Total		Percent	Annual	Composite	
Nitrogen, Organic Total		Percent	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
pH Field		su	Annual	Composite	
Lead Dry Wt		mg/kg	Annual	Composite	
Zinc Dry Wt		mg/kg	Annual	Composite	
Copper Dry Wt		mg/kg	Annual	Composite	
Cadmium Dry Wt		mg/kg	Annual	Composite	
Nickel Dry Wt		mg/kg	Annual	Composite	
PFOA + PFOS		ug/kg	Once	Calculated	Monitor once in 2027. Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Once	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

3.2.1 Changes from Previous Permit:

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

Outfall 010- New outfall added to the permit.

PFAS –Monitoring is required once pursuant to s. NR 214.18(5)(b), Wis. Adm. Code.

3.2.2 Explanation of Limits and Monitoring Requirements

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

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

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

4 Schedules

4.1 Phosphorus Schedule - Optimization and Compliance Planning

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

Required Action	Due Date
Optimization and Compliance Alternatives: The permittee shall implement a phosphorus discharge optimization plan to control phosphorus discharges to the greatest extent practicable. Submit a progress report that summarizes the approach to phosphorus removal at the facility, the resulting concentration and mass loading for the last 12-month period, and any changes that were or are needed to optimize removal of phosphorus by the due date. The permittee shall also evaluate alternative phosphorus compliance options such as water quality trading and adaptive management. The progress report submitted on the date due shall also detail any outreach activities undertaken to evaluate these options, any communications with credit generators, brokers/clearinghouse, and any potential water quality trading or adaptive management projects that may lead to compliance with phosphorus WQBELs. Financial alternatives evaluation: If the permittee intends to seek a renewed variance at the end of this permit term, the permittee may complete a financial evaluation to support ongoing variance eligibility. The report must evaluate financial mechanisms that have the potential to make compliance with phosphorus WQBELs economically feasible.	07/01/2027
Progress Report #2: Submit a progress report per the above for the prior calendar year.	07/01/2028
Progress Report #3: Submit a progress report per the above for the prior calendar year.	07/01/2029
Progress Report #4: Submit a progress report per the above for the prior calendar year.	07/01/2030
Final MDV Optimization and Compliance Alternatives Report: Submit a progress report per the above for the prior calendar year. If water quality trading or adaptive management will be used to comply with phosphorus limitations during the next permit term, submit a draft water quality trading plan, adaptive management plan, or executed clearinghouse credit purchase agreement. The financial alternatives evaluation as described above must be submitted by the date due if the facility chooses to seek renewal of the variance.	01/01/2031

4.1.1 Explanation of Schedule

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

4.2 Phosphorus Payment per Pound to County

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

Required Action	Due Date
Annual Verification of Phosphorus Payment to County: The permittee shall make a total payment to the participating county or counties approved by the Department by March 1 of each calendar year. The amount due is equal to the following: [(lbs of phosphorus discharged minus the permittee's target value) times ($68.40 per pound)] or $640,000, whichever is less. See the payment calculation steps in the Surface Water section. The permittee shall submit Form 3200-151 to the Department by March 1 of each calendar year indicating total amount remitted to the participating counties to verify that the correct payment was made. The first payment verification form is due by the specified Due Date. Note: The applicable Target Value is 0.2 mg/L as defined by s. 283.16(1)(h), Wis. Stats. The "per pound" value is $50.00 adjusted for CPI.	03/01/2027
Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2028
Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2029
Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2030
Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2031
Continued Coverage: If the permittee intends to seek a renewed variance, an application for the MDV (Multi Discharger Variance) shall be submitted as part of the application for permit reissuance in accordance with s. 283.16(4)(b), Wis. Stats.	
Annual Verification of Payment After Permit Expiration: In the event that this permit is not reissued prior to the expiration date, the permittee shall continue to submit Form 3200-151 to the Department indicating total amount remitted to the participating counties by March 1 each year.	

4.2.1 Explanation of Schedule

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

4.3 Phosphorus Multi-Discharger Variance Interim Limit (0.35 mg/L)

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

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent discharges of phosphorus with conclusions regarding compliance.	07/01/2027
Action Plan: Submit an action plan for complying with the specified interim effluent limit. If construction is required, include plans and specifications with the submittal.	10/01/2027
Initiate Actions: Initiate actions identified in the plan.	01/01/2028
Complete Actions: Complete actions identified in the plan and achieve compliance with the specified interim limit.	07/01/2028

4.3.1 Explanation of Schedule

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

4.4 Total Residual Chlorine Limits

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

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent chlorine with conclusions regarding compliance.	01/01/2027
Action Plan: Submit an action plan for complying with applicable chlorine limits.	07/01/2027
Initiate Actions: Initiate actions identified in the plan.	01/01/2028
Complete Actions: Complete actions necessary to achieve compliance with effluent chlorine limits.	07/01/2028

4.4.1 Explanation of Schedule

This schedule is included to allow the facility time to investigate and come into compliance with a new effluent limit.

4.5 Temperature Limits (Industrial Facilities)

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

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent temperature with conclusions regarding compliance. If the Department determines that because of data variability, 24 months of monitoring data is required to determine the need for temperature limits, the Department will so notify the permittee in writing and all dates in the permit schedule will be extended by 12 months. Informational Note - Refer to the Surface Water subsection regarding 'Determination of Need for Effluent Limits' for information concerning a Department determination on the need for limits and pursuing re-evaluation of limits per NR 106 Subchapters V & VI or NR 102.26, Wis. Adm. Code.	07/01/2027
Action Plan: Submit an action plan for complying with all effluent temperature limits that remain following the Department's review for necessity.	01/01/2028
Construction Plans: Submit construction plans (if construction is required for complying with effluent temperature limits) and include plans and specifications with the submittal.	07/01/2028
Initiate Actions: Initiate actions identified in the plan.	01/01/2029
Complete Actions: Complete actions necessary to achieve compliance with effluent temperature limits.	07/01/2030

4.5.1 Explanation of Schedule

This schedule allows time for the permittee to investigate thermal compliance, create an action plan, and implement actions to come into compliance with the effluent temperature limits.

4.6 Dissolved Oxygen Limits

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

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent discharges of dissolved oxygen (DO) with conclusions regarding compliance.	01/01/2027
Action Plan or Facility Plan Amendment: Submit an action plan or facility plan amendment for treatment facility modifications for complying with the effluent limitation(s) as needed.	10/01/2027
Plans and Specifications: Submit plans and specifications for treatment facility modifications as needed.	01/01/2028
Initiate Actions: Initiate actions identified in the action plan or facility plan amendment.	04/01/2028
Complete Actions: Complete actions necessary to achieve compliance with the effluent limitation for dissolved oxygen (DO).	06/01/2028
Achieve Compliance: The permittee shall achieve compliance with the final dissolved oxygen (DO) limit.	07/01/2028

4.6.1 Explanation of Schedule

The compliance schedule lays out a timeline for the permittee to investigate and implement a plan to comply with the new DO limit by the end of the schedule.

Attachments

Water Quality Based Effluent Limitations for Agropur Inc Luxemburg, Nicole Krueger, dated March 23, 2026

Technology-Based Effluent Limitations for Agropur Inc Luxemburg, Nicole Krueger, dated March 23, 2026

Phosphorus MDV Application for Municipal Facilities, dated 12/22/2025

MDV Application Evaluation Checklist, dated XX/XX/XXXX

MDV Conditional Approval Letter, dated XX/XX/XXXX

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Ashley Clark, Wastewater Specialist

Date: April 14, 2026

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: 03/23/2026

TO: Ashley Clark – NER

FROM: Nicole Krueger – SER Nicole Krueger

SUBJECT: Water Quality-Based Effluent Limitations for Agropur Inc Luxemburg
WPDES Permit No. WI-0050237-10

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 Agropur Inc Luxemburg in Kewaunee County. This industrial facility discharges to an unnamed tributary of the East Twin River, located in the East Twin River Watershed in the Rock River Basin. This discharge is included in the Northeast (NE) Lakeshore Total Maximum Daily Load (TMDL) as approved by EPA on 10/30/2023. 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 009:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD_5 October – April May – September TBEL	 **16 mg/L** **8.2 mg/L** 158 lbs/day		 10 mg/L 5.0 mg/L	 **10 mg/L** **5.0 mg/L** 79 lbs/day		3,4
TSS TBEL	**16 mg/L** 201 lbs/day		10 mg/L	**10 mg/L** 100 lbs/day		3,4
pH	9.0 s.u.	6.0 s.u.				1
Dissolved Oxygen		7.0 mg/L				
Ammonia Nitrogen						1,2
Chloride	**440 mg/L**		400 mg/L 3,281 lbs/day	**400 mg/L**		1,4
Chlorine	19 µg/L		7.3 µg/L	**7.3 µg/L**		4
Phosphorus LCA Interim Limit HAC Interim Limit TMDL				 0.4 mg/L 0.35 mg/L 2.0 lbs/day	 0.68 lbs/day	5,6
Temperature	86 deg F					7
TKN, Nitrite+Nitrate, and Total Nitrogen						1,8
Acute WET						9,10
Chronic WET				1.0 TU_c		9,10

Footnotes:

1. No changes from the current permit.
2. Monitoring only.
3. The mass limits are categorical limits based on ch. NR 240, Wis. Adm. Code. These limits are addressed in a separate TBEL memo.
4. 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.

5. The phosphorus mass limits are based on the Total Maximum Daily Load (TMDL) for the Northeast Lakeshore Basin TMDL to address phosphorus water quality impairments within the TMDL area. The TMDL was approved by EPA in October 2023.
6. Under the phosphorus MDV, a level currently achievable (LCA) interim limit of 0.4 mg/L should be effective upon permit reissuance. A compliance schedule may be included in the permit until the highest attainable condition (HAC) limit of 0.35 mg/L can be met. The final limits are the TMDL limits.
7. After a compliance schedule, the following temperature limits based on a WWSF classification are recommended.

Month	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	49	76
FEB	50	76
MAR	52	77
APR	55	79
MAY	65	82
JUN	76	84
JUL	81	85
AUG	81	84
SEP	73	82
OCT	61	80
NOV	49	77
DEC	49	76

8. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, quarterly total nitrogen monitoring is recommended for all municipal or facilities with total nitrogen greater than 40 mg/L and class A cheese plants. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).
9. 2x annual acute and chronic WET testing is recommended. The Instream Waste Concentration (IWC) to assess chronic test results is 100%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 75%, 50%, 25% & 12.5%. The primary control water used in chronic WET tests conducted on Outfall 009 shall be a grab sample collected from East Twin River, upstream and out of the influence of the mixing zone and any other known discharge.
10. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge. Testing should continue after the permit expiration date (until the permit is reissued).

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Nicole Krueger at Nicole.Krueger@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (3) – Narrative, Outfall Map & Thermal Table

PREPARED BY: Nicole Krueger, Water Resources Engineer – SER

E-cc: Trevor Moen, Wastewater Engineer – NER
Heidi Schmitt Marquez, Regional Wastewater Supervisor – NER
Diane Figiel, Water Resources Engineer – WY/3
Nate Willis, Wastewater Engineer – WY/3

Attachment #1

Water Quality-Based Effluent Limitations for
Agropur Inc. Luxemburg Plant

WPDES Permit No. WI-0050237-10

Prepared by: Nicole Krueger

PART 1 – BACKGROUND INFORMATION

Facility Description

Agropur Inc in Luxemburg operates a cheese manufacturing and whey processing facility in southern Kewaunee County. The wastewater treatment facility (WWTF) currently consists of low and high strength waste equalization tanks, anaerobic conditioning tank, anaerobic digester, anaerobic dissolved air floatation (DAFs) unit, anoxic selector tank, aeration basins, secondary clarification, tertiary filtration with sand filters, post aeration tank, cooling towers, sludge storage tank, and belt filter press for sludge thickening. Chemical addition of ferric chloride and polymer are still added for phosphorus removal and additional sludge thickening and solids removal, respectively. Outfall 009 discharges to an unnamed tributary of the East Twin River and consists of the combination of treated process wastewater, excess polished condensate of whey (COW), retentate from the industrial reverse osmosis (RO) unit, and noncontact cooling water (NCCW). High strength wastewater that was previously segregated and land applied is now treated in the WWTF and discharged as treated process wastewater. The facility still has the option of segregating high strength waste for land application to approved sites and storage facilities via Outfall 002 as necessary. The high strength wastewater could be comprised of whey, whey-by-products, permeate, antibiotic contaminated milk, separator desludge and/or cooker water. Sludge from the WWTF was previously land applied on approved sites via Outfall 004 but is now disposed of at a landfill. The facility still has the option of land applying sludge to approved sites via Outfall 004 if that is deemed necessary. An additional emergency outfall (005) has been retained for land application of untreated process wastewater in the event of an emergency.

Attachment #2 is a map of the area showing the approximate location of Outfall 009.

Existing Permit Limitations

The current permit, expiring on 06/30/2026, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1
BOD_5	40 mg/L 158 lbs/day			20 mg/L 79 lbs/day	2,3
TSS	40 mg/L 201 lbs/day			20 mg/L 100 lbs/day	2,3
pH	9.0 s.u.	6.0 s.u.			4
Dissolved Oxygen		4.0 mg/L			2,4
Ammonia Nitrogen					1
Chloride	**440 mg/L**		400 mg/L 3,281 lbs/day	**400 mg/L**	5
Phosphorus					6

Attachment #1

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
MDV Interim				0.4 mg/L	
Temperature	86 deg F				
Nickel (Total Recoverable)					1
TKN, Nitrite+Nitrate, and Total Nitrogen					1
Acute WET					7
Chronic WET				1.0 TUc	7

Footnotes:

1. Monitoring only.
2. These concentration limits are based on the Limited Aquatic Life (LAL) community of the immediate receiving water as described in s. NR 104.02(3)(b), Wis. Adm. Code.
3. The mass limits are categorical limits based on ch. NR 240, Wis. Adm. Code.
4. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
5. 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.
6. The facility has a multi-discharger variance for phosphorus. The interim limit of 0.4 mg/L became effective July 1, 2023.
7. Acute WET testing is required twice during the permit term and chronic WET testing is required 2x/year during the permit term. The IWC for chronic WET was 100%.

Receiving Water Information

- Name: Tributary to the East Twin River
- Waterbody Identification Code (WBIC): 3000213
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warmwater sport fish (WWSF). The immediate receiving stream (WBIC 3000213) and the next stream downstream (WBIC 3000212) were previously assumed to be limited aquatic life (LAL) but were not codified in ch. NR 104, Wis. Adm. Code. Department biologists completed a stream survey in June 2025 which found that the immediate receiving water supports a warmwater sport fish classification. Note: Cold Water and Public Water Supply criteria are used for bioaccumulating compounds of concern, because the discharge is within the Great Lakes basin.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q_{10} and 7-Q_2 values are estimated from USGS, where Outfall 001 is located:
  7-Q_{10} = 0 cfs (cubic feet per second)
  7-Q_2 = 0 cfs
- 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: The direct receiving water is listed as 303(d) impaired for total phosphorus as well as the downstream tributaries and the East Twin River.

Effluent Information

- Flow rate(s):
  Maximum annual average = 0.77 million gallons per day (MGD)
  For reference, the actual average flow from 02/01/2021 – 01/31/2026 was 0.73 MGD.
- Hardness = 375 mg/L as $CaCO_3$. This value represents the geometric mean of four samples collected in November 2025 which were reported on the permit application.
- 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.
- Additives: Agropur has included 4 additives in the permit application that have the potential to be present in Outfall 009. These additives are listed below:
  - Aquachem DP 3270 Polymer – Flocculant
  - Chemtrade Ferric Sulfate 60% – Phosphorus removal
  - Hydrosolutions Essential Micro 1 – Anaerobic micronutrients
  - Olin Corporation Sodium hydroxide 20 – pH adjustment
  - An additive review is not necessary for any additives where either the toxicity is well documented and understood, can be controlled by a WQBEL, or are not believed to be present in the discharge. This is the case upon initial review of the listed additives. Therefore, an additive review is not needed at this time.
- 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, hardness and phosphorus.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2, in the column titled "MEAN EFFL. CONC.". Otherwise, substances with multiple effluent data are shown in the tables below or in their respective parts in this evaluation.

Copper Effluent Data

Sample Date	Copper (µg/L)
11/11/2025	<3.2
11/14/2025	<3.2
11/18/2025	<3.2
11/21/2025	<3.2
Average	<3.2

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

Chlorine Effluent Data

Sample Date	Chlorine (µg/L)
12/18/2025	23
03/17/2026	30
03/18/2026	40

Attachment #1

Sample Date	Chlorine (µg/L)
03/20/2026	50
Average	36

Nickel Effluent Data

Sample Date	Nickel (µg/L)	Sample Date	Nickel (µg/L)	Sample Date	Nickel (µg/L)
07/31/2024	9.8	12/15/2024	12	05/12/2025	8.7
08/25/2024	12	01/06/2025	8.1	06/14/2025	14
09/09/2024	12	02/03/2025	13	11/18/2025	15
10/07/2024	10	03/10/2025	9.9		
11/10/2024	9.9	04/06/2025	14		
1-day P_{99} = 17.4 µg/L					
4-day P_{99} = 14.2 µg/L					

Chloride Effluent Data

	Concentration (mg/L)	Mass (lbs/day)
1-day P_{99}	360	2409
4-day P_{99}	306	1974
30-day P_{99}	276	1729
Mean	259	1600
Std	38.0	295
Sample size	526	526
Range	72 - 410	461 – 2705

The following table presents the average concentrations and loadings at Outfall 009 from 02/01/2021 – 01/31/2026 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code.

Parameters with Effluent Limits

	Average Measurement	Average Mass Discharged
BOD_5	1.47 mg/L*	9.2 lbs/day
TSS	3.35 mg/L*	20.6 lbs/day
pH field	7.2 s.u.	
Dissolved Oxygen	7.4 mg/L	
Phosphorus	0.28 mg/L	
Chloride	259 mg/L	1600 lbs/day
Temperature	79 deg F	

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

PART 2 - BOD_5 and TSS

The current BOD_5 and TSS limits are 40 mg/L as a daily maximum and 20 mg/L as a monthly average limit which are based on an LAL classification. Because the receiving water is recommended to be classified as a WWSF, BOD_5 and TSS limits are recalculated based on this classification.

In establishing BOD_5 (Biochemical Oxygen Demand) limitations, the primary intent is to prevent a lowering of dissolved oxygen levels in the receiving water below water quality standards as specified in ss. NR 102.04(4)(a) and (b). The 26-lb method is the most frequently used approach for calculating BOD_5 limits when resources are not available to develop a detailed water quality model. This simplified model was developed in the 1970's by the Wisconsin Committee on Water Pollution on the Fox, Wisconsin, Oconto, and Flambeau Rivers. Further studies throughout the 1970's proved this model to be relatively accurate. The model has since then been used by the Department on many occasions when resources are not available to perform a site-specific model. The "26" value stems from the following equation:

$$\frac{26\,{}^{\text{lbs}}/_{\text{day}}}{{}^{\text{ft}^3}/_{\text{sec}}} * \frac{1\,\text{day}}{86{,}400\,\text{sec}} * \frac{454{,}000\,\text{mg}}{\text{lbs}} * \frac{1\,\text{ft}^3}{28.32\,\text{L}} = 4.8 = 2.4 * 2\,{}^{\text{mg}}/_{\text{L}}$$

The 4.8 has been calculated by taking 2.4 which is the number when converting 26 lbs of BOD/day/cfs into mg/L, multiplied by 2.0 which is the change in the DO level. A typical background DO level for Wisconsin waters is 7 mg/L, so a 2 mg/L decrease is allowed in order to meet the 5 mg/L standard for warm water streams. The above relationship is temperature dependent and an appropriate temperature correction factor is applied. The 26-lb method is based on a typical 24°C summer value for warm water streams. Adjustments for temperature are made using the following equation:

$$k_t = k_{24}\left(0.967^{(T-24)}\right)$$

Where k_{24} = 26 lbs of BOD/day/cfs

<u>Calculations based on Full Assimilative Capacity at 7Q10 Conditions:</u>

$$Limitation(mg/L) = 2.4\left(DO_{stream} - DO_{std}\right)\left(\frac{\left({}_7Q_{10} + Q_{eff}\right)}{Q_{eff}}\right)\left(0.967^{(T-24)}\right)$$

Where:
Q_{eff} = maximum annual average effluent flow
DO_{stream} = background dissolved oxygen = 7 mg/L
DO_{std} = dissolved oxygen criteria from s. NR 102.04(4) = 5.0 mg/L
${}_7Q_{10}$ = 0 cfs
T = Receiving water temperature from s. NR 102.25

Because no dilution is available in the receiving water, the calculated limits would be the lowest that the Department typically gives to facilities. The recommended effluent limitations are 5 mg/L as a weekly average from May through October and 10 mg/L November through April. Because there is no dilution available under low flow conditions, **a dissolved oxygen limit of 7.0 mg/L as a daily minimum is also recommended.**

The TSS limitations are primarily given to maintain or improve water clarity and are not water quality based. However, the Department typically does not require TSS limits lower than 10 mg/L. **Therefore, the weekly and monthly average limits for TSS are recommended to be 10 mg/L.**

Expression of limits

Sections NR 106.07(4) and NR 205.067(7), Wis. Adm. Code require WPDES permits contain daily maximum and monthly average limitations for industrial dischargers whenever practicable and necessary to protect water quality.

1. Whenever a weekly average limitation is determined necessary to protect water quality:
   - A daily maximum limitation shall also be included calculated using the following procedure:

     Daily Maximum Limitation= WQBELc × DMF

     Where:

     DMF = Daily Multiplication Factor as defined in Table 2

     CV = coefficient of variation (CV) as calculated in s. NR 106.07(5m), Wis. Adm. Code.

s. NR 106.07 (4) (e). Table 2 — Daily Multiplication Factor

CV	0.1	0.2	0.3	0.4	0.5	**0.6**	0.7	0.8	0.9	1.0
DMF	1.114	1.235	1.359	1.460	1.557	**1.639**	1.712	1.764	1.802	1.828

Recommended BOD_5 and TSS Limits

Parameter	Daily Maximum	Weekly Average	Monthly Average	Multiplication Factor (CV)
BOD_5				
October – April	**16 mg/L**	10 mg/L	10 mg/L	1.639 (0.6)
May – September	**8.2 mg/L**	5.0 mg/L	5.0 mg/L	1.639 (0.6)
TSS	**16 mg/L**	10 mg/L	10 mg/L	1.639 (0.6)

See Part 6 for additional TMDL-based TSS limits and the separate TBEL memo for BOD_5 and TSS TBEL-based limits.

Effluent Data

The following table summarizes the effluent BOD_5 and TSS data from the current permit term (02/01/2021 – 01/31/2026).

BOD_5, TSS & DO Effluent Data

	BOD_5 mg/L	TSS mg/L	DO mg/L
1-day P_{99}	10.7	16.8	8.74
4-day P_{99}	5.80	9.77	8.06
30-day P_{99}	2.84	5.25	7.65
Mean*	1.47	3.35	7.43
Std	2.68	3.65	0.53
Sample size	525	526	525
Range	<2 – 17	<2 – 34	5.42 - 8.86

*Values lower than the limit of detection were substituted with a zero

Besides a couple of temporary upsets in 2022, Agropur can meet the calculated BOD_5 and TSS concentration limits, **so these are recommended to become effective upon reissuance. Agropur can meet the recommended DO daily minimum limit most of the time (~90%) but a short compliance schedule may be included in the permit if needed.**

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN

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

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

Acute Limits based on 1-Q_{10}

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

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

Where:

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

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

Qe = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

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

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

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q_{10} method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is the case for Agropur.

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	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Chlorine		19.0	19.0	3.81	**36**		
Arsenic		340	340	68.0	<1.1		
Cadmium	375	131.5	131	26.3	<0.17		
Chromium	301	4446	4446	889	<1.5		
Copper	375	54.0	54.0	10.8	<3.2		
Lead	356	365	365	72.9	<5.4		
Nickel	268	1080	1080			17.4	
Zinc	333	345	345	68.9	<5.9		
Chloride (mg/L)		757	757			360	410

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

* * Per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016 consideration of ambient concentrations and 1-Q_{10} flow rates yields a more restrictive limit than the 2 × ATC method of limit calculation.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 0 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD.* mg/L	CTC	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Chlorine		7.28	7.28	1.46	**36**	
Arsenic		152	152	30.4	<1.1	
Cadmium	175	3.82	3.82	0.76	<0.17	
Chromium	301	326	326	65.2	<1.5	
Copper	375	32.1	32.1	6.41	<3.2	
Lead	356	95.5	95.5	19.1	<5.4	
Nickel	268	169	169			14.2
Zinc	333	345	345	68.9	<5.9	
Chloride (mg/L)		395	395			306

* 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.

Attachment #1

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	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P_{99}
Cadmium	370	370	74.0	<0.17	
Chromium (+3)	3818000	3818000	763600	<1.5	
Lead	140	140	28.0	<5.4	
Nickel	43000				12.4

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	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3	13.3	2.66	<1.1

In addition to evaluating the need for limits for each individual substance for which HCC exists, 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 required for chlorine. Limits and/or monitoring recommendations are made in the paragraphs below:

Chlorine – The discharge source water is a private well which does not have chlorine, however some chlorine products are used in the production plant. The average of four samples collected from 12/18/2025 – 03/20/2026 was 36 µg/L. Available data/information indicates the discharge contains concentrations of chlorine above the applicable WQBELs. Therefore, a daily maximum effluent limit of 19 µg/L and a weekly average limit of 7.3 µg/L are needed for permit reissuance.

Sections NR 106.07(4) and NR 205.067(7), Wis. Adm. Code require WPDES permits contain daily maximum and monthly average limitations for industrial dischargers whenever practicable and necessary to protect water quality. **Therefore, a monthly average limit of 7.3 µg/L is required,** set equal to the weekly average limit, to meet expression of limits requirements in addition to the daily max and weekly average limits.

Agropur is currently working to replace the chlorine containing products in production.

Chloride – Considering available effluent data from the current permit term (02/01/2021 – 01/26/2026), the 1-day P_{99} chloride concentration is 360 mg/L, and the 4-day P_{99} of effluent data is 306 mg/L. These are below the calculated daily maximum and weekly average limits.

However, the current permit has daily maximum, weekly average, and monthly average limits, summarized below:

Attachment #1

Chloride Limits Summary

	Daily Maximum	Weekly Average	Monthly Average
Concentration limit	440 mg/L	400 mg/L	400 mg/L*
Mass limit		3,281 lbs/day	

*Limit needed to meet the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code.

The weekly mass average limit was calculated in 2016 in response to an antidegradation demonstration and based on 1/3rd of the assimilative capacity based anticipated flows in a 2013 design plan.

Even though there is not currently reasonable potential for chloride limits, Agropur removes chloride through treatment to meet the limits. Under antidegradation and antibacksliding provisions in ch. NR 207, Wis. Adm. Code, the limits are required to continue in the reissued permit. **No changes to chloride limits are recommended.**

Nickel – Considering available effluent data from the current permit term (07/31/2024 – 11/18/2025), the 1-day P_{99} chloride concentration is 17.4 µg/L, the 4-day P_{99} is 14.2 µg/L, and the 30-P_{99} is 12.4 µg/L. These are below the calculated daily maximum, weekly average, and monthly average limits. Therefore, **no limits or monitoring are recommended in the reissued permit.** Monitoring was included in the current permit due to the elevated nickel concentration that was submitted in the previous permit application.

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, **PFOS and PFOA monitoring is not recommended.** The Department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. Given the fact that Agropur does not currently have ammonia nitrogen limits, the need for limits is evaluated at this time.

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

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

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

Where:

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

The effluent pH data was examined as part of this evaluation. A total of 525 sample results were reported from 02/03/2021 – 01/27/2026. The maximum reported value was 8.13 s.u. (Standard pH Units). The

effluent pH was 7.94 s.u. or less 99% of the time. The 1-day P_{99}, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 7.98 s.u. The mean plus the standard deviation multiplied by a factor of 2.326, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 7.95 s.u. Therefore, a value of 7.95 s.u. is believed to represent the maximum reasonably expected pH, and therefore most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 7.95 s.u. into the equation above yields an ATC = 9.2 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method
In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are calculated using the 1-Q_{10} receiving water low flow if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

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

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit mg/L
2×ATC	18
1-Q_{10}	9.2

The 1-Q_{10} method yields the most stringent limits for Agropur.

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)
Weekly average and monthly average limits for ammonia nitrogen are based on chronic toxicity criteria in ch. NR 105, Wis. Adm. Code.

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

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

Where:

pH = the pH (s.u.) of the receiving water,
E = 0.854,
C = the minimum of 2.85 or $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Present), or
C = $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Absent), and
T = the temperature (ºC) of the receiving water – (Early Life Stages Present), or
T = the maximum of the actual temperature (ºC) and 7 - (Early Life Stages Absent)

The 4-day criterion is equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q_{10} (4-Q_3, if available) to derive weekly average limitations. And the 30-day criteria are used with the 30-Q_5 (estimated as 85% of the 7-Q_2 if the 30-Q_5 is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature; 100% of the flow is used if the Temperature ≥ 16 ºC, 25% of the flow is used if the Temperature < 11 ºC, and 50% of the flow is used if the Temperature ≥ 11 ºC but < 16 ºC.

Section NR 106.32 (3), Wis. Adm. Code, provides a mechanism for less stringent weekly average and monthly average effluent limitations when early life stages (ELS) of critical organisms are absent from the receiving water. This applies only when the water temperature is less than 14.5 ºC, during the winter and spring months. Burbot, an early spawning species, are not believed to be present in the tributary to the East Twin River, based on raw fish data in the Fisheries Management Information System. So "ELS Absent" criteria apply from October through March, and "ELS Present" criteria will apply from April through September for a warmwater sport fish classification.

The "default" basin assumed values are used for Temperature, pH and background ammonia concentrations, because minimum ambient data is available. These values are shown in the table below, with the resulting criteria and effluent limitations.

Weekly and Monthly Ammonia Nitrogen Limits – WWSF

		Spring	Summer	Winter
		April & May	June – Sept.	Oct. - March
Effluent Flow	Qe (MGD)	0.77	0.77	0.77
Background Information	7-Q_{10} (cfs)	0	0	0
	7-Q_2 (cfs)	0	0	0
	Ammonia (mg/L)	0.04	0.05	0.105
	Average Temperature (°C)	12	19	4
	Maximum Temperature (°C)	14	21	10
	pH (s.u.)	8.06	8.08	7.99
	% of Flow used	50	100	25
	Reference Weekly Flow (cfs)	0	0	0
	Reference Monthly Flow (cfs)	0	0	0
Criteria mg/L	4-day Chronic			
	Early Life Stages Present	5.5	3.7	
	Early Life Stages Absent			8.2
	30-day Chronic			
	Early Life Stages Present	2.2	1.5	
	Early Life Stages Absent			3.3
Effluent Limitations mg/L	Weekly Average			
	Early Life Stages Present	**5.5**	**3.7**	
	Early Life Stages Absent			**8.2**
	Monthly Average			
	Early Life Stages Present	**2.2**	**1.5**	
	Early Life Stages Absent			**3.3**

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from 02/01/2021 – 01/26/2026.

Ammonia Nitrogen Effluent Data

Ammonia Nitrogen mg/L	April - May	June - September	October - March
1-day P_{99}	0.32	1.26	2.34
4-day P_{99}	0.20	0.71	1.61

Attachment #1

Ammonia Nitrogen mg/L	April - May	June - September	October - March
30-day P_{99}	0.12	0.31	0.71
Mean*	0.09	0.14	0.18
Std	0.06	0.31	0.85
Sample size	86	178	262
Range	<0.039 - 0.36	<0.039 - 2.8	<0.039 - 8.7

*Values lower than the limit of detection were substituted with a zero

Reasonable Potential
The need to include ammonia limits in Agropur's permit is determined by calculating 99th upper percentile (or P_{99}) values for ammonia 02/01/2021 – 01/26/2026 and comparing those to the calculated limits. Based on this comparison, there is no reasonable potential for the discharge to exceed any of the calculated ammonia nitrogen limits.

Conclusions and Recommendations
No limits are needed; however, **monitoring is recommended to continue to determine reasonable potential in the next evaluation.**

PART 5 – PHOSPHORUS

Agropur currently has an interim MDV limit of 0.4 mg/L as a monthly average.

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 monthly average limit of 1.0 mg/L, or an approved alternative concentration limit.

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

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

Total Maximum Daily Load
Total phosphorus (TP) effluent limits in lbs/day are calculated as recommended in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs* (April 2020) and are based on the annual phosphorus wasteload allocation (WLA) given in pounds per year. This WLA found in Appendix K of the *Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Northeast Lakeshore Region* report are expressed as maximum annual loads (lbs/year).

For the reasons explained in the April 30, 2012 paper entitled *Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin*, WDNR has determined that the phosphorus WQBELs set equal to WLAs would not be consistent with the assumptions and requirements of the TMDL. Therefore, limits given to facilities included in the Northeast Lakeshore Basin TMDL are given monthly average mass limits and, if the equivalent effluent concentration is less than or equal to 0.3 mg/L, six-month average mass limits are also included. The following equation shows the calculation of equivalent effluent concentration:

TP Equivalent Effluent Concentration = WLA ÷ (365 days/yr * Flow Rate * Conversion Factor)
= 211 lbs/yr ÷ (365 days/yr * 0.77 MGD * 8.34)
= 0.09 mg/L

Since this value is less than 0.3 mg/L, both a six-month average mass limit and a monthly average mass limit are applicable for total phosphorus. The monthly average limit is set equal to three times the six-month average limit.

TP 6-Month Average Limit = WLA ÷ 365 days/yr * multiplier
= (211 lbs/yr ÷ 365 days/yr) * 1.17
= 0.68 lbs/day

TP Monthly Average Permit Limit = TP 6-Month Average Limit * 3
= 0.68 lbs/day * 3
= 2.0 lbs/day

The multiplier used in the six-month average calculation was determined according to the implementation guidance. A coefficient of variation was calculated, based on phosphorus mass monitoring data, to be 0.5. This is the standard deviation divided by the mean of mass data. This value, along with monitoring frequency, is used to select the multiplier. The current permit specifies phosphorus monitoring as weekly; if a different monitoring frequency is used, the stated limits should be reevaluated.

Six-month average and monthly average mass effluent limits are recommended for this discharge. The limits are equivalent to concentrations of 0.106 mg/L and 0.319 mg/L, respectively, at the maximum annual average flow of 0.77 MGD.

The TMDL establishes TP wasteload allocations to reduce the loading in the entire watershed including WLAs to meet water quality standards for tributaries in the Northeast Lakeshore Basin. **Therefore, WLA-based WQBELs are protective of immediate receiving waters and TP WQBELs derived according to s. NR 217.13, Wis. Adm. Code are not required.**

Since wasteload allocations are expressed as annual loads (lbs/yr), permits with TMDL-derived monthly average permit limits should require the permittee to calculate and report rolling 12-month sums of total monthly loads for TP. Rolling 12-month sums can be compared directly to the annual wasteload allocation.

Effluent Data
The following table summarizes effluent total phosphorus monitoring data from 02/01/2021 – 01/26/2026.

Total Phosphorus Effluent Data

	Concentration mg/L	Mass lbs/day
1-day P_{99}	0.68	4.35
4-day P_{99}	0.45	2.84
30-day P_{99}	0.33	2.07
Mean	0.28	1.71

Attachment #1

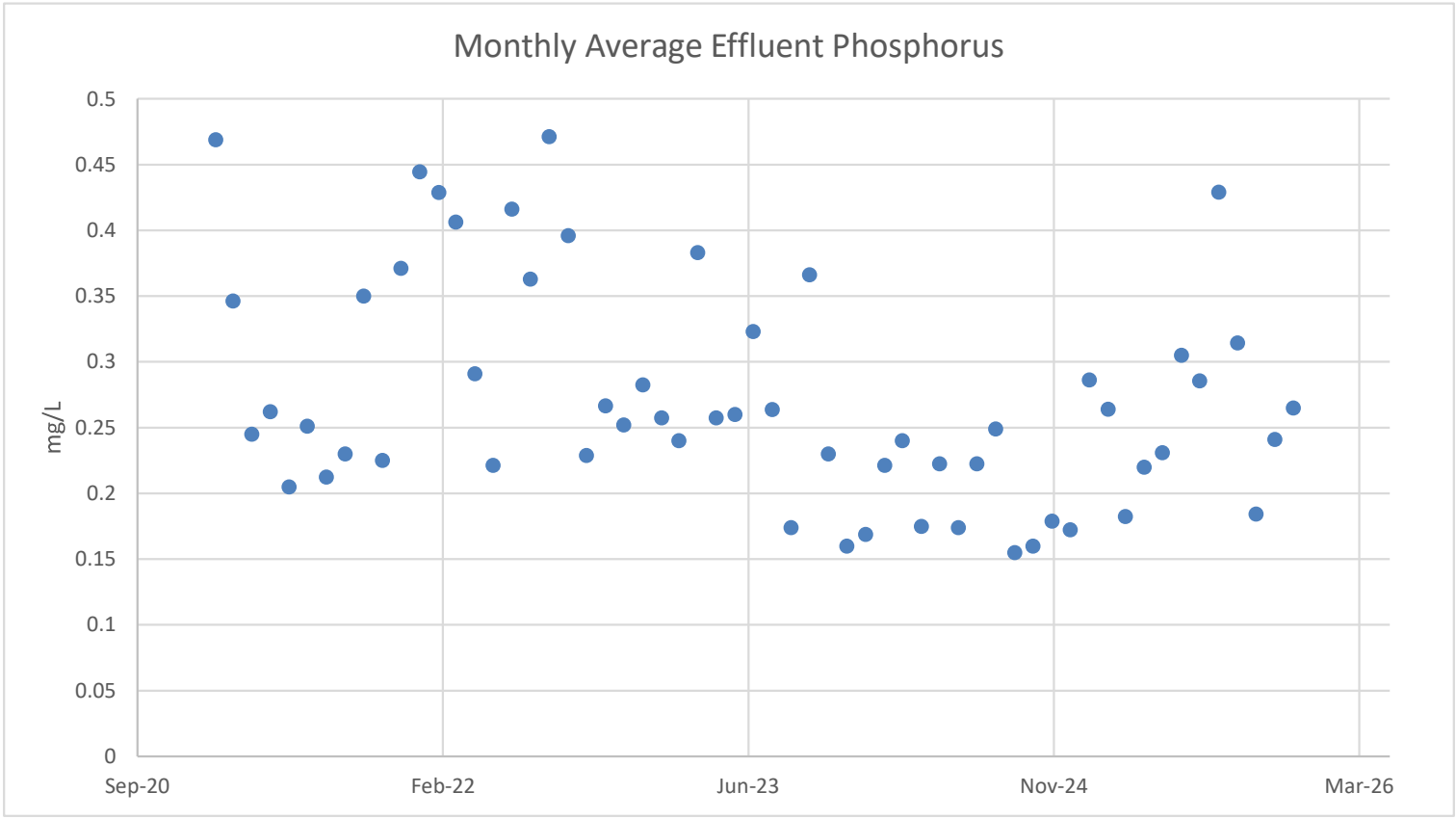
	Concentration mg/L	Mass lbs/day
Std	0.12	0.80
Sample size	526	526
Range	0.08 - 0.87	0.45 – 6.3

Agropur cannot consistently meet the calculated TMDL limits with current treatment and a compliance schedule is needed.

Multi-Discharge Variance Interim Limit

With the permit application, Agropur has re-applied for the phosphorus multi-discharger variance (MDV). Conditions of the phosphorus MDV require the facility to comply with an interim phosphorus limit in lieu of meeting the final WQBEL. The recommended interim limit during the 2nd permit under MDV approval, pursuant to s. 283.16 (7), Wis. Stats., is 0.35 mg/L as a monthly average. It is recommended the limit become effective after a compliance schedule. The limit of 0.4 mg/L became effective in the current permit in July 2023.

The monthly average effluent phosphorus from the current permit term is shown below.



Attachment #1

PART 6 – TOTAL SUSPENDED SOLIDS

Total Suspended Solids (TSS) effluent limits in lbs/day are calculated as recommended in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs (*April 2020). This WLAs found in Appendix I of the *Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Northeast Lakeshore Region* report are expressed as maximum annual loads (lbs/year).

Revisions to chs. NR 106 and 205, Wis. Adm. Code align Wisconsin water quality-based effluent limits with 40 CFR 122.45(d), which requires WPDES permits to contain the following concentration limits, whenever practicable and necessary to protect water quality:

- Weekly average and monthly average limitations for continuous discharges subject to ch. NR 210.
- Daily maximum and monthly average limitations for all other discharges.

Agropur is an industrial facility and is therefore subject to daily maximum and monthly average TSS limits derived from TSS annual WLAs.

TSS Monthly Average Permit Limit = WLA ÷ 365 days/yr * multiplier
= (41,387 lbs/yr ÷ 365 days/yr) * 1.59
= 180 lbs/day

TSS Daily Maximum Permit Limit = WLA ÷ 365 days/yr * daily multiplier
= (41,387 lbs/yr ÷ 365 days/yr) * 3.11
= 353 lbs/day

The multiplier used in the weekly average and monthly average calculation was determined according to implementation guidance. A coefficient of variation was calculated, based on TSS mass monitoring data, to be 1.5. This is the standard deviation divided by the mean of mass data. However, it is believed that the optimization of the wastewater treatment system to achieve the WLA-derived permit limits will reduce effluent variability. Thus, the maximum anticipated coefficient of variation expected by the facility is 0.6. This value, along with monitoring frequency, is used to select the multiplier. The current permit specifies TSS monitoring as 2/week; if a different monitoring frequency is used, the stated limits should be reevaluated.

Daily maximum and monthly average mass effluent limits are recommended for this discharge. The limits are equivalent to concentrations of 55 mg/L and 28 mg/L, respectively, at the maximum annual average flow of 0.77 MGD.

Since wasteload allocations are expressed as annual loads (lbs/yr), permits with TMDL-derived monthly average permit limits should require the permittee to calculate and report rolling 12-month sums of total monthly loads for TSS. Rolling 12-month sums can be compared directly to the annual wasteload allocation.

The currently effective mass-based TSS TBELs for Agropur are more restrictive than the TMDL limits calculated in this evaluation. If Agropur would like to request an increase to the existing permit limits, an assessment of their effluent data must be provided. This evaluation is on a parameter by parameter basis and includes consideration of operations, maintenance and temporary upsets. Agropur can meet the

currently effective TBELs. Without a demonstration of need for higher limits in accordance with ch. NR 207, Wis. Adm. Code, **the current TSS limits should be continued in the reissued permit.**

Effluent Data

The following table summarizes effluent TSS monitoring data from 02/01/2021 – 01/26/2026.

Total Suspended Solids Effluent Data

	TSS mg/L	TSS lbs/day
1-day P_{99}	16.8	102
4-day P_{99}	9.77	55.8
30-day P_{99}	5.25	26.6
Mean*	3.35	20.6
Std	3.65	23.8
Sample size	526	526
Range	<2 – 34	<0 – 247

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

PART 7 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in 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 02/01/2021 – 01/31/2026.

The table below summarizes the maximum temperatures reported during monitoring from 02/01/2021 – 01/31/2026.

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	79	82	**49**	**76**
FEB	82	84	**50**	**76**
MAR	81	83	**52**	**77**

Attachment #1

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)
APR	83	84	**55**	**79**
MAY	83	85	**65**	**82**
JUN	84	85	**76**	**84**
JUL	83	85	**81**	**85**
AUG	83	85	**81**	**84**
SEP	82	83	**73**	**82**
OCT	82	82	**61**	**80**
NOV	80	84	**49**	**77**
DEC	82	83	**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. Based on this analysis, **daily maximum and weekly average maximum temperature limits are needed year-round. A compliance schedule may be included in the reissued permit, with the current daily maximum limit of 86 deg F effective immediately upon reissuance as an interim limit.** The complete thermal table is in Attachment #3.

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.
- Monthly low receiving water flows: Contract with USGS to generate monthly low flow estimates for the receiving water to be used in place of the annual low flow.

- Mixing zone studies: A demonstration of rapid and complete mixing may allow for the use of a mixing zone other than the default 25%.
- 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*
https://dnr.wisconsin.gov/topic/Wastewater/Thermal.html

PART 8 – WHOLE EFFLUENT TOXICITY (WET)

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

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC_{50} (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.
- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC_{25} (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The **IWC of 100%,** shown in the WET Checklist summary below, was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

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

Where:

Q_e = annual average flow = 0.77 MGD = 1.19 cfs
f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = ¼ of the 7-Q_{10} = 0 cfs ÷ 4 = 0 cfs

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.
- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfall 009 shall be a grab sample collected from

the receiving water location, upstream and out of the influence of the mixing zone and any other known discharge. The specific receiving water location must be specified in the WPDES permit.

- Shown below is a tabulation of all available WET data for Outfall 009. Efforts are made to ensure that decisions about WET monitoring and limits are made based on representative data, as specified in s. NR 106.08(3), Wis. Adm Code. Data which is not believed to be representative of the discharge was not included in reasonable potential calculations. The table below differentiates between tests used and not used when making WET determinations. Significant changes were made to WET test methods in 2004 and these changes were assumed to be fully implemented by certified labs by no later than June 2005. Data collected before July 1, 2005 is excluded in this evaluation.

WET Data History

Date Test Initiated	Acute Results LC_{50} %				Chronic Results IC_{25} %					Footnotes or Comments
	C. dubia	Fathead minnow	Pass or Fail?	Used in RP?	*C. dubia*	Fathead Minnow	Algae (IC_{50})	Pass or Fail?	Use in RP?	
01/16/2008	>100	>100	Pass	Yes						
03/12/2008	>100	>100	Pass	Yes						
01/04/2011	>100	>100	Pass	No	75.72	>100		Fail	No	1
02/25/2014					>100	>100		Pass	Yes	
04/29/2014	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
09/16/2014	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
12/09/2014	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
02/24/2015	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
06/09/2015	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
09/22/2015	>100	>100	Pass	Yes						
10/06/2015					>100	>100		Pass	Yes	
12/15/2015	>100	>100	Pass	Yes		>100		Fail	No	2
03/29/2016	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
11/29/2016	>100	>100	Pass	Yes						
12/13/2016					>100	>100		Pass	Yes	
06/27/2017					>100	>100		Pass	Yes	
02/06/2018					>100	9.78		Fail	Yes	
03/27/2018	>100	>100	Pass	Yes	>100	21.4	>100	Fail	Yes	
05/01/2018					>100	60.8		Fail	Yes	
08/07/2018	>100	>100	Pass	Yes	>100	>100	>100	Pass	Yes	
12/04/2018	>100	>100	Pass	Yes	>100	>100	>100	Pass	Yes	
01/22/2019						>100		Pass	Yes	
02/19/2019						>100		Pass	Yes	
05/14/2019						>100		Pass	Yes	
07/30/2019					>100	>100		Pass	Yes	
08/13/2019	>100	>100	Pass	Yes	98	>100		Pass	Yes	
11/12/2019					>100	>100		Pass	Yes	
12/16/2019										
12/10/2019	>100	>100	Pass	Yes	>100	6.3	>100	Fail	Yes	
03/10/2020						>100		Pass	Yes	
04/24/2020										
04/28/2020						>100		Pass	Yes	

Attachment #1

Date Test Initiated	Acute Results LC_{50} %				Chronic Results IC_{25} %					Footnotes or Comments
	C. dubia	Fathead minnow	Pass or Fail?	Used in RP?	*C. dubia*	Fathead Minnow	Algae (IC_{50})	Pass or Fail?	Use in RP?	
05/12/2020						>100		Pass	Yes	
06/16/2020						84.4		Fail	Yes	
07/28/2020						>100		Pass	Yes	
09/28/2021					>100	>100		Pass	Yes	
05/31/2022	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
11/01/2022					39.5	>100	>100	Fail	Yes	
11/01/2022					>100	>100		Pass	No	3
01/24/2023					90.9	>100	>100	Fail	Yes	
02/28/2023					26.6	>100		Fail	Yes	
07/17/2023					76.4	>100		Fail	Yes	
07/18/2023					61	>100		Fail	Yes	
08/08/2023					89.3	>100		Fail	Yes	
09/19/2023					>100	>100		Pass	Yes	
10/10/2023					>100	>100		Pass	Yes	
11/07/2023					>100	>100		Pass	Yes	
12/12/2023					>100	>100		Pass	Yes	
01/23/2024					>100	>100		Pass	Yes	
02/20/2024					>100	>100		Pass	Yes	
04/30/2024					>100	>100		Pass	Yes	
07/30/2024					>100	>100		Pass	Yes	
09/24/2024					72.5	>100	>100	Fail	Yes	
10/27/2025					57.2	>100	>100	Fail	Yes	

Footnotes:

1. *Tests done by S-F Analytical, July 2008 – March 2011.* The DNR has reason to believe that WET tests completed by SF Analytical Labs from July 2008 through March 31, 2011 were not performed using proper test methods. Therefore, WET data from this lab during this period has been disqualified and was not included in the analysis.
2. *Qualified or Inconclusive Data.* Data quality concerns were noted during testing which calls into question the reliability of the test results.
3. *Qualified Data.* Unusual or upset conditions were present at the treatment plant during testing which calls into question the representativeness of the test results.

- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. **WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.**

  Acute Reasonable Potential = [(TUa effluent) (B)(AMZ)]
  Chronic Reasonable Potential = [(TUc effluent) (B)(IWC)]

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

Acute Reasonable Potential = 0 < 1.0, reasonable potential is not shown, and a limit is not required.

Chronic Reasonable Potential = [(TU_c effluent) (B)(IWC)]

Chronic WET Limit Parameters

TUc (maximum) $100/IC_{25}$	**B** (multiplication factor from s. NR 106.08(6)(c), Wis. Adm. Code, Table 4)	IWC
100/6.3= 15.9	1.5 Based on 14 detects	100%

[(TUc effluent) (B)(IWC)] = 23.9 > 1.0

Therefore, reasonable potential is shown for chronic WET limits using the procedures in s. NR 106.08(6), Wis. Adm. Code, and representative data from 02/25/2014 – 10/27/2025.

Expression of WET limits
Chronic WET limit = [100/IWC] TU_c = 1.0 TU_c expressed as a monthly average

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

WET Checklist Summary

	Acute	**Chronic**
AMZ/IWC	Not Applicable. **0 Points**	IWC = 100%. **15 Points**
Historical Data	17 tests used to calculate RP. No tests failed. **0 Points**	44 tests used to calculate RP. 12 tests failed. **0 Points**
Effluent Variability	There is a history of WET failures. **10 Points**	Same as Acute. **10 Points**
Receiving Water Classification	WWSF classification. **5 Points**	Same as Acute. **5 Points**

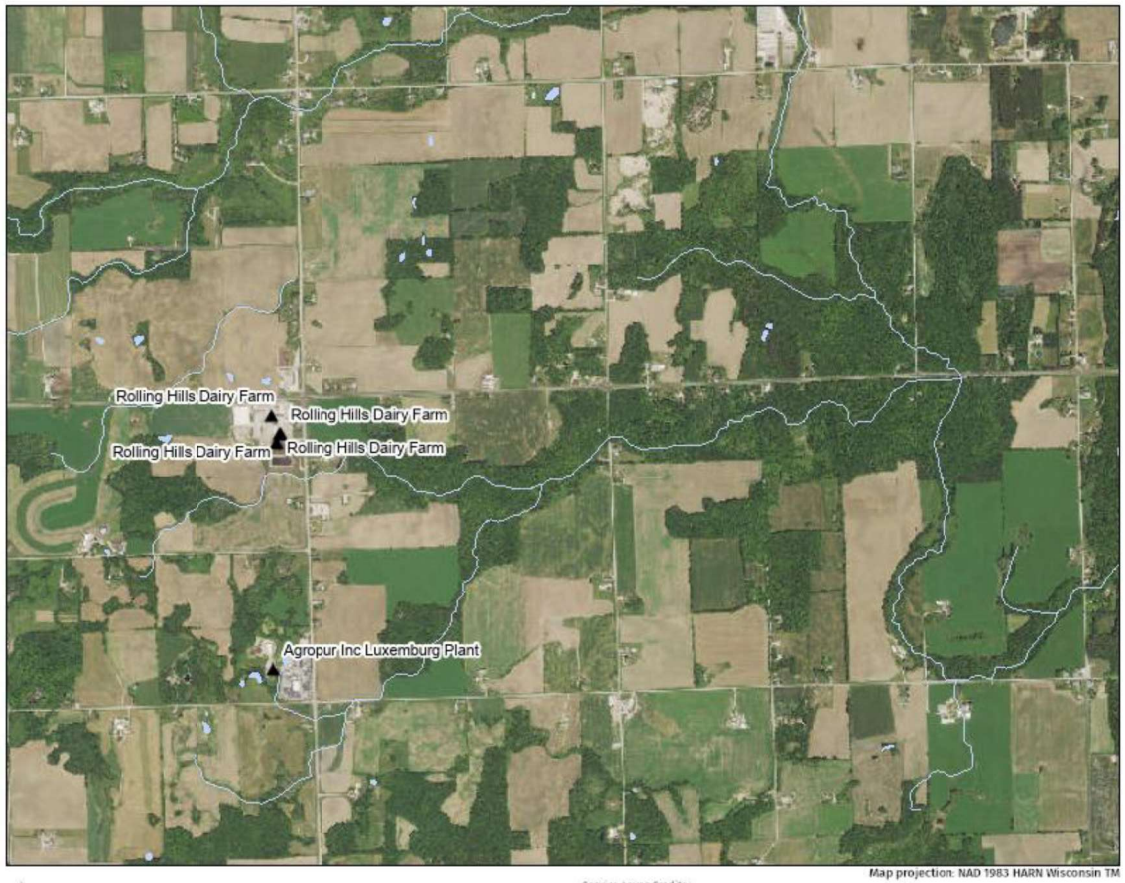
Attachment #1

	Acute	Chronic
Chemical-Specific Data	Reasonable potential for limits for chlorine based on ATC; nickel, chloride, and ammonia detected. Additional Compounds of Concern: None. **8 Points**	Reasonable potential for limits for chlorine based on CTC; nickel, chloride, and ammonia detected. Additional Compounds of Concern: None. **8 Points**
Additives	No Biocides and 4 Water Quality Conditioners added. Permittee has proper P chemical SOPs in place: Yes. **4 Points**	3 additives used more than once per 4 days. **3 Points**
Discharge Category	Dairy **20 Points**	Same as Acute. **20 Points**
Wastewater Treatment	Secondary or better. **0 Points**	Same as Acute. **0 Points**
Downstream Impacts	No impacts known. **0 Points**	Same as Acute. **0 Points**
Total Checklist Points:	**47 Points**	**61 Points**
Recommended Monitoring Frequency (from Checklist):	2x yearly	2x yearly
Limit Required?	No	Limit = 1.0 TU_c
TRE Recommended? (from Checklist)	No	Yes

- After consideration of the guidance provided in the Department's *WET Program Guidance Document* (2022) and other information described above, 2x annual acute and chronic WET tests are recommended in the reissued permit. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge. Testing should continue after the permit expiration date (until the permit is reissued).
- Although there is a history of toxicity, Agropur has completed a TRE in the current permit term and has investigated and removed sources of toxicity, so a TRE schedule is not recommended in the reissued permit.
- According to the requirements specified in s. NR 106.08, Wis. Adm. Code, a chronic WET limit is required. The chronic WET limit shall be expressed as 1.0 TUc as a monthly average in the effluent limits table of the permit.
- A minimum of annual chronic monitoring is required because a chronic WET limit is required. Federal regulations in 40 CFR Part 122.44(i) require that monitoring occur at least once per year when a limit is present.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Agropur Outfall Location



Legend: (some map layers may not be displayed)

- Surface Water Outfalls
- Rivers and Streams
- Intermittent Streams
- Open Water
- Rivers and Streams
- Intermittent Streams
- Open Water
- Latest Leaf On Imagery

Notes:

Map projection: NAD 1983 HARN Wisconsin TM

N

Map: 0 2,000 4,000 Feet / 0 620 1,240 Meters

Service Layer Credits:
Permits: WI DNR Bureau of Watershed Management, DNR Basic Feature VTL (WTM): Wisconsin Department of Natural Resources, GIS Section, Surface Waters: WiDNR, USGS, and other data, Latest Leaf On:

This map is a product generated by a DNR web mapping application.

Date Printed: 3/4/2026 1:40 PM

Attachment #3

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	Agropur		**7-Q_{10}:**	0.00	cfs		
Outfall(s):	009		**Dilution:**	25%		**Start:** 02/01/21	02/01/21
Date Prepared:	3/10/2026		**f:**	0		**End:** 01/31/26	01/31/26
Design Flow (Qe):	0.77	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	0.00	0.865	0.920	0	79	82	49	76
FEB	34	50	76	0.00	0.800	0.899	0	82	84	50	76
MAR	38	52	77	0.00	0.793	0.900	0	81	83	52	77
APR	48	55	79	0.00	0.810	0.894	0	83	84	55	79
MAY	58	65	82	0.00	0.833	1.038	0	83	85	65	82
JUN	66	76	84	0.00	0.834	0.903	0	84	85	76	84
JUL	69	81	85	0.00	0.788	0.869	0	83	85	81	85
AUG	67	81	84	0.00	0.847	0.913	0	83	85	81	84
SEP	60	73	82	0.00	0.841	0.901	0	82	83	73	82
OCT	50	61	80	0.00	0.839	1.000	0	82	82	61	80
NOV	40	49	77	0.00	0.813	0.924	0	80	84	49	77
DEC	35	49	76	0.00	0.819	0.954	0	82	83	49	76

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: 03/23/2026

TO: Ashley Clark – NER

FROM: Nicole Krueger – SER Nicole Krueger

SUBJECT: Technology-Based Effluent Limitations for Agropur Inc Luxemburg
WPDES Permit No. WI-0050237-10

Technology-Based Effluent Limitations (TBELs) Recommended for Outfall 009:

Parameter	Daily Maximum	Daily Minimum	Monthly Average
BOD_5, Total	158 lbs/day		79 lbs/day
TSS	201 lbs/day		100 lbs/day
pH	9.0 su	6.0 su	

PART 1 – BACKGROUND INFORMATION

Agropur Inc in Luxemburg operates a cheese manufacturing and whey processing facility in southern Kewaunee County.

PART 2 – INDUSTRIAL CATEGORIES

Chapter NR 240, Wis. Adm. Code, specifies effluent guidelines for discharges from dairy product categories of point sources and subcategories. Agropur falls under the "Natural and Processed Cheese, "Condesned Whey", and "Dry Whey" subcategories as defined in s. NR 240.02, Wis. Adm. Code. These guidelines are based on federal effluent guidelines in 40 CFR Part 405 Subparts F, K, and L. The permittee must meet the applicable effluent limit guidelines as described in this chapter. These effluent limit guidelines include:

- Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT) in s. NR 240.10, Wis. Adm. Code.
- Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) in s. NR 240.11, Wis. Adm. Code.
- If determined to be a new source, new source performance standards (NSPS) in s. NR 240.12, Wis. Adm. Code.

If the calculated limits are less than or equal to the limits in the current permit, then the limits would be set equal to the recalculated limits. If the recalculated limits are less restrictive than the limits from the current permit, they cannot be increased unless the the antidegradation and anti-backsliding provisions of ch. NR 207, Wis. Adm. Code, are met.

Section NR 220.13, Wis. Adm. Code, includes provisions that address cases where federal and state rule differ. Section 283.11, Wis. Stats., address compliance with federal standards. In this case, the state rules are consistent with federal rules with a few exceptions. In such cases, the permit will in all cases be based on the state rule notwithstanding the federal regulations. The omissions are described below.

- The state or federal rules do not specify a date for the definition for a new source. Therefore, it is necessary to review available federal guidance. The Boornazian memo (September 28, 2006) specifies a new source date for 40 CFR Part 405 Subparts A – L of May 28, 1974. The Department relies on the Boornazian memo to establish date of applicability for NSPS.
- State rules incorrectly list best available treatment (BAT) standards for BOD, TSS, and pH. BAT applies to priority pollutants and nonconventional pollutants and does not apply to BOD, TSS or pH.
- The federal standard rule lists revised BCT standards requirements. All BCT limitations are set to be the same as the best practicable control technology (BPT) standards. State rules in ch. NR 240, Wis. Adm. Code, do not list standards for BCT.

PART 3 – LEVELS OF CONTROL

All production processes had construction commenced after May 28, 1974. Therefore, the process wastewater from these lines is subject to BPT, BCT, BAT and NSPS standards for the "Natural and Processed Cheese", "Condensed Whey" and "Dry Whey" subcategories are applicable as specified in 40 CFR Part 405 Subparts F, K, and L and ch. NR 240.12, Wis. Adm. Code.

PART 4 – CURRENT PRODUCTION LEVELS

The current levels of production for each Subcategory are provided by Agropur.

Natural and Processed Cheese

Process	Material Used (lbs/day)
Cheese Production	3,135,000

Whey

Process	Material Used (lbs/day)
Reverse Osmosis	3,027,000
Evaporator	1,500,000
Drier	420,000

PART 5 – BOD INPUT

The BOD_5 input is the 5-day biochemical oxygen demand of raw materials that enter the process. The current production levels in Part 4 are converted to BOD input equivalents by multiplying the amount of raw material by BOD factors specified in s. NR 240.03(1) or s. NR 240.07 Wis. Adm. Code and 40 CFR Part 405.

Process	Material Used (lbs/day)	BOD Factor[1] (lbs/100 lbs)	Adjusted Total BOD Input[2] (lbs/day)
Cheese Production	3,135,000	10.39	325,727
Total			**325,727**
Reverse Osmosis	3,027,000	4.72	142,874
Evaporator	1,500,000	4.72	70,800
Drier	420,000	65.07	273,2949
Total			**486,968**

Footnotes:

1. The BOD Factors are listed in ch. NR 240.07 Wis. Adm. Code, Table 1 for generally accepted published values for protein, fat, and carbohydrate content.

2. Adjusted BOD input = BOD input * BOD factor / 100

PART 6 – TBEL CALCULATIONS

pH
Any discharge subject to BPT, BCT, or NSPS limitations or standards in this part must remain within the pH range of 6.0 to 9.0.

New Source Performance Standards (NSPS)
The cheese production processes commenced construction after May 28th, 1974. Therefore, the NSPS limitations of 40 CFR Part 405.65 would apply.

Total BOD Input (lbs/day)	NSPS Effluent Limitations				Calculated Limits			
	BOD (lbs/1,000 lbs)		TSS (lbs/1,000 lbs)		BOD (lbs/day)[1]		TSS (lbs/day)[1]	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max
325,727	0.08	0.16	0.10	0.20	26	52	33	65

Footnotes:
1. The limits (lbs/day) = total BOD input (lbs/day) / 1000 * NSPS limitations

The reverse osmosis and evaporator processes for whey production commenced construction after May 28th, 1974. Therefore, the NSPS limitations of 40 CFR Part 405.115 and 405.125 would apply.

Total BOD Input (lbs/day)	NSPS Effluent Limitations				Calculated Limits			
	BOD (lbs/1,000 lbs)		TSS (lbs/1,000 lbs)		BOD (lbs/day)[1]		TSS (lbs/day)[1]	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max
486,968	0.11	0.22	0.14	0.28	54	107	68	136

Footnotes:
1. The limits (lbs/day) = total BOD input (lbs/day) / 1000 * NSPS limitations

PART 7 – FINAL CALCULATED LIMITS

Per s. NR 240.06(3) Wis. Adm. Code, the total discharge limits shall be the total of the amounts calculated from the BOD input in the final product subcategory and all of the other subcategories with intermediate products in Part 6 of this memo.

Final Calculated Effluent Limitations			
Parameter & Units	**Daily Maximum**	**Daily Minimum**	**Monthly Average**
BOD_5	159 lbs/day		80 lbs/day
TSS	201 lbs/day		101 lbs/day
pH	9.0 su	6.0 su	

The Department has determined that calculated limits are greater than the limits calculated in the previous permit. Therefore, the limits for BOD_5 and TSS remain the same as in the current permit. If Agropur would like to request an increase to the existing permit limits, an assessment of their effluent data must be

provided. This evaluation is on a parameter by parameter basis and includes consideration of operations, maintenance and temporary upsets. Without a demonstration of need for a higher limit in accordance with ch. NR 207, Wis. Adm. Code, the current limits should be continued in the reissued permit.

The daily maximum and monthly average concentration limits in the WQBEL memo are also recommended to be included in the reissued permit along with the mass concentrations that are recommended in this TBEL memo.