Permit Fact Sheet

General Information

Permit Number:	WI-0054470-08-0
Permittee Name:	Lactalis USA, Inc. - Belmont
Address:	218 Park St
City/State/Zip:	BELMONT WI 53510
Discharge Location:	1000 ft. from County Trunk G bridge in Belmont
Receiving Water:	Bonner Branch of the Sugar-Pecatonica River Basin (Middle Pecatonica Watershed, SP-08)
StreamFlow ($Q_{7,10}$):	1.1 cfs
Stream Classification:	Warm water sport fish community
Discharge Type:	Existing, Continuous

Facility Description

Lactalis USA, Inc. – Belmont (Lactalis) filters whole milk to separate the whey and standardize the milk protein. The milk is used to make specialty Brie and Feta cheeses. Milk fat that is removed through the ultra-filtration system can be blended back in to assure appropriate fat levels for various cheese recipes. Some of the whey resulting from the cheese production is concentrated from reverse osmosis (RO) membranes and is shipped to a different facility for further processing. Equipment is cleaned in place on a daily basis.

Lactalis operates an activated sludge wastewater treatment facility consisting of four high strength storage tanks, two RO storage silos, a vertical fine screen, aerated EQ tank, selector tank, aeration tank, DAF system, final clarifier, four tertiary sand filters, reaeration tank, and chemical phosphorus removal. Treated effluent is discharged to the Bonner Branch via a storm sewer pipe (Outfall 002). Industrial sludge from the treatment process is thickened with a disk thickener and stored onsite before being land applied via Outfall 003. An upgrade was completed in 2021 with the addition of a new vertical fine screen, selector tank, aeration tank, and final clarifier; installation of the two additional tertiary sand filters was completed in 2022. Additional landspreading Outfalls 004 and 005 accommodate land application of high strength industrial liquid wastes consisting mainly of whey, whey process waste, and RO permeate from the whey concentration operation.

Substantial Compliance Determination

Enforcement During Last Permit: Violations of effluent limitations, nitrogen loading, and land application practices occurred during the previous permit term. The facility is in the process or has completed the previously required actions as part of the enforcement process.

After a desk top review of all discharge monitoring reports, land application reports, compliance schedule items, and a site visit on 09/20/2022, this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
002	0.143 MGD (November 2017-October 2022)	Effluent: 24-Hr flow proportional composite sampler located at the reaeration tank. Representative grab samples collected from the reaeration tank, except for temperature which is monitored

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
		continuously at the outfall at Bonner Branch. Flow meter located between the tertiary filters and reaeration tank.
003	2,701,000 gallons/year (avg. 2017-2021)	Land Application: Representative grab samples of industrial sludge from the industrial process wastewater collected prior to land application at the sludge storage tank.
004	508,000 gallons/year (avg. 2017-2022)	Land Application: Representative grab samples of the industrial liquid high strength wastes (consisting mainly of whey and whey process waste) collected prior to land application at the high-strength storage tanks.
005	0 gallons/year (2017-2022)	Land Application: Representative grab samples of industrial liquid wastewater (reverse osmosis filtered wastewaters) collected at the RO silos prior to land application. Monitoring is only required when land application occurs.

1 Surface Water - Monitoring and Limitations

Sample Point Number: 002- Treated Process Wastewater

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	32 mg/L	3/Week	24-Hr Flow Prop Comp	November through April
BOD5, Total	Weekly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	May through October
BOD5, Total	Daily Max	19 lbs/day	3/Week	Calculated	
BOD5, Total	Monthly Avg	9.7 lbs/day	3/Week	Calculated	
Suspended Solids, Total	Weekly Avg	32 mg/L	3/Week	24-Hr Flow Prop Comp	November through April
Suspended Solids, Total	Weekly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	May through October
Suspended Solids, Total	Daily Max	24 lbs/day	3/Week	Calculated	
Suspended Solids, Total	Monthly Avg	12 lbs/day	3/Week	Calculated	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
Dissolved Oxygen	Daily Min	6.0 mg/L	5/Week	Grab	
Nitrogen, Ammonia Variable Limit		mg/L	3/Week	24-Hr Flow Prop Comp	Look up the variable ammonia limit from the 'Variable Ammonia Limitation' table and report the variable limit in the Ammonia Variable Limit column on the eDMR.
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	3/Week	24-Hr Flow Prop Comp	Report the daily maximum Ammonia result in the Nitrogen, Ammonia (NH3-N) Total column of the eDMR. See Ammonia Limitation Section.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	8.8 mg/L	3/Week	24-Hr Flow Prop Comp	April
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	7.1 mg/L	3/Week	24-Hr Flow Prop Comp	May through September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	6.7 mg/L	3/Week	24-Hr Flow Prop Comp	October through March
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.2 mg/L	3/Week	24-Hr Flow Prop Comp	April
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	3.6 mg/L	3/Week	24-Hr Flow Prop Comp	May through September
Chloride		mg/L	Monthly	24-Hr Flow Prop Comp	Monitoring only in 2028.
Temperature Maximum		deg F	Daily	Continuous	Monitoring year-round. See temperature section.
Phosphorus, Total	Monthly Avg	0.225 mg/L	3/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	6-Month Avg	0.075 mg/L	3/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	6-Month Avg	0.11 lbs/day	3/Week	Calculated	
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite +		mg/L	Quarterly	24-Hr Flow	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrate Total				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	Daily Max	1.0 TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	
Chronic WET	Monthly Avg	2.0 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.

Changes from Previous Permit

Changes highlighted in the table above.

The order of parameters has been updated in this section to reflect the standard order. This will aid in completing permit reissuance and compliance in the future.

Sample frequency increased for BOD, TSS, Ammonia, and Total Phosphorus.

Flow sample type updated to continuous to reflect the current flow meter used on site.

BOD and TSS mass TBELs updated. TSS concentration limits added.

Chloride sampling period updates. The sample unit was corrected to be mg/L.

Temperature sampling year-round included with notification of potential for limits next permit term.

Total Phosphorus mass limit added.

Quarterly Nitrogen series monitoring added.

Acute and Chronic WET testing updated.

Explanation of Limits and Monitoring Requirements

Refer to the WQBEL memo for the detailed calculations, prepared by the Water Quality Bureau dated February 13, 2023, used for this reissuance. The TBEL memo for detailed calculations for Technology Based Effluent Limits, prepared by Jonathon Hill dated January 26, 2024, was also used for this reissuance.

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 fairness and 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. Based on these considerations, sampling frequencies for BOD, TSS, ammonia, and phosphorus increased to 3/week. Sampling frequency for DO is increased to the standard frequency of 5/week. Dissolved Oxygen monitoring is a process control parameter that is tested in-house. This parameter can quickly provide information on how well a treatment system is performing and help identify compliance issues. The increased monitoring frequency ensures

better calibration of sampling equipment, improves data reliability, and ensures more frequent operator oversight of the treatment plant.

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. Minor changes have been made to chlorine.

BOD and TSS - This facility is subject to technology based effluent limits (TBELs). These categorical limits are production-based limits that are reevaluated at each permit term. The TBELs are expressed as daily maximum and monthly average mass limits have changed for both BOD and TSS since the last permit issuance based on the specific production information provided by the permittee. See TBEL memo for the detailed calculation of these limits. Additional, water quality based effluent limits for TSS expressed as concentration limits set equal to BOD limitations are warranted in accordance with s. NR 102.04(1)(a), Wis. Adm. Code. These limits are in addition to the TBEL mass TSS limits.

pH and DO - Limitations for pH and DO have not changed from the previous permit. DO sampling has been increased to 5/week. The pH limit in the permit is a TBEL for this facility requiring the pH must remain within the pH range of 6.0 to 9.0 s.u. Dissolved oxygen sampling has been increased to 5/week.

Ammonia - Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia. No changes to the ammonia limits were warranted. The daily maximum variable table was updated and did have several changes. Ammonia monitoring has been increased to 3/week.

Chlorine – The permittee utilizes the additive San-I-King 451 to chlorinate filters and previous chlorine data results have shown chlorine is present in final discharge. During the permit reissuance process the permittee provided additional chlorine data that indicates chlorine (Total Residual Chorine) limits are not warranted. The permittee will complete chlorine testing again at the next permit application and will notify the department if changes to additives are made.

Chloride - Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code. Subchapter VII of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. The chloride data indicates that there is no reasonable potential to exceed chloride limitations; however, monitoring for one year is included to ensure adequate data for permit reissuance.

Thermal - Requirements for Temperature are included in NR 102 Subchapter II Water Quality Standards for Temperature and NR 106 Subchapter V Effluent Limitations for Temperature. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects.

In the WQBEL memo dated February 13, 2023, a flow-weighted combined limit of 59°F for November was recommended due to the proximity of the outfalls from Lactalis Belmont and Belmont Wastewater Treatment Facility. However, the department does not have enough information at this time to determine compliance with this limit Therefore, no limits are recommended at this time, but thermal monitoring during the entire permit term is recommended.

It should be noted that if temperatures and/or flow rates continue to increase, thermal limits will likely be triggered in the future. Efforts should be made during this permit term to assess temperature at the outfall and in conjunction with Belmont Wastewater Treatment Facility. Efforts to ensure temperature data is representative and properly calibrated should be taken. This permit includes temperature monitoring year-round to allow additional data to be collected for use at the next permit reissuance.

Phosphorus - Phosphorus requirements are based on the Phosphorus Rules that became effective 12/1/2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217, Wis. Adm. Code, addresses point source dischargers of phosphorus to surface waters. The code categorically limits industrial

dischargers of more than 60 pounds of phosphorus per month and municipal dischargers of more than 150 pounds of phosphorus per month to 1.0 mg/L unless an alternative limit is approved. NR 217 also specifies WQBELs (water quality based effluent limits) for discharges of phosphorus to surface waters of the state from publicly and privately owned wastewater facilities, noncontact cooling water discharges which contain phosphorus, concentrated animal feeding operations that discharge through alternative treatment facilities and a facility/site that is regulated under NR 216 where the standards in NR 151 and 216 are not sufficient to meet phosphorus criteria. WQBELs for phosphorus are needed whenever the discharge contains phosphorus at concentrations or loadings that will cause or contribute to an exceedance of the water quality standards. Sampling frequency has been increased to 3/week. The current phosphorus concentration limits are retained. The final phosphorus limits also require a mass limit in accordance with S. NR 217.14(1)(a), Wis. Adm. Code, because the discharge is to a surface water that is to or upstream of a phosphorus impaired water.

Total Nitrogen Monitoring (NO2+NO3, TKN and Total N) - The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under §§ 283.55(1)(e), Wis. Stats., which allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. Quarterly effluent monitoring for Total Nitrogen is included in the permit because of the potential for higher nitrogen loading resulting from higher flows (major facilities), higher concentrations, or both. More information on the justification to include total nitrogen monitoring in wastewater permits can be found in the "Guidance for Total Nitrogen Monitoring in Wastewater Permits" dated October 1, 2019.

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

Whole Effluent Toxicity - Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09 Wis. Adm. Code, as revised August 2016. (See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance, and test methods at http://dnr.wi.gov/topic/wastewater/wet.html). WET testing is required twice annually for this permit term.

The Acute WET limit remains in effect with increased twice annual acute WET testing upon reissuance. The chronic WET limit is changed to 2.0 TUc monthly average and twice annual testing is now required.

2 Land Application - Sludge/By-Product Solids (industrial only)

Sample Point Number: 003- Treatment Plant Sludge

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Monthly	Grab	
Nitrogen, Total Kjeldahl		Percent	Monthly	Grab	
Chloride		Percent	Monthly	Grab	
pH Field		su	Annual	Grab	
Nitrogen, Ammonium		Percent	Annual	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
(NH4-N) Total					
Phosphorus, Total		Percent	Annual	Grab	
Phosphorus, Water Extractable		% of Tot P	Annual	Grab	
Potassium, Total Recoverable		Percent	Annual	Grab	
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information. *(Populated by picklist)*

Changes from Previous Permit:

Sampling frequency updated for all parameters to the standard frequency for dairy industrial permits.

PFAS – Annual monitoring is included in the permit pursuant s. NR 214.18(5)(b), Wis. Adm. Code.

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 is currently developing a risk assessment to determine future land application rates and expects to release this risk assessment by the end of 2024. In the interim, the department has developed the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS."

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

Sample Point Number: 004- High Strength Waste

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

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Chloride		mg/L	Monthly	Grab	
pH Field		su	Annual	Grab	
BOD5, Total		mg/L	Annual	Grab	
Phosphorus, Total		mg/L	Annual	Grab	
Phosphorus, Water Extractable		% of Tot P	Annual	Grab	

Changes from Previous Permit:

Sampling frequency updated for all parameters to the standard frequency for dairy industrial permits.

Explanation of Limits and Monitoring Requirements

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

Sample Point Number: 005- R/O filtered wastewaters

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	
pH Field		su	Annual	Grab	
Phosphorus, Total		mg/L	Annual	Grab	
Phosphorus, Water Extractable		% of Tot P	Annual	Grab	

Changes from Previous Permit:

Sampling frequency updated for all parameters to the standard frequency for dairy industrial permits.

Explanation of Limits and Monitoring Requirements

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

3 Schedules

3.1 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative	07/01/2027

Code ch. NR 214.	

Explanation of Schedules

This schedule requires a Land Application Management Plan be submitted to ensure sludge management practices comply with ch. NR 214, Wis. Adm. Code, pursuant to ss. NR 214.17(6)(c) and NR 214.18(6)(c), Wis. Adm. Code. Any changes to the landspreading practices, site approvals, variance/exemption approvals, etc., may warrant a revised management plan prior to the due date.

Special Reporting Requirements

None

Other Comments:

None

Attachments:

Water Quality Based Effluent Limits with Maps dated – February 13, 2023

Technology Based Effluent Limits dated – January 26, 2024

Proposed Expiration Date:

June 30, 2029

Justification of Any Waivers from Permit Application Requirements

No waivers were requested in the permit application.

Prepared By: Jennifer Jerich, Wastewater Specialist

Date: 1/26/2024, 3/8/2024, 3/21/2024

Revision date post fact check: 5/22/2024

Revision date post public notice & hearing: