

Permit Fact Sheet

General Information

Permit Number	WI-0066176-02-0
Permittee Name and Address	BelGioioso Cheese Inc 4200 Main St, Green Bay, WI 54311
Permitted Facility Name and Address	BelGioioso Cheese Inc Freedom Plant N4056 Vine Road, Freedom, WI 54913
Permit Term	July 01, 2026 to June 30, 2031
Discharge Location	About 0.3 miles to the east of the facility south of county road to Duck Creek
Receiving Water	Unnamed (WBIC 5019845) in Duck Creek Watershed of Green Bay River Basin in Outagamie County
Stream Flow (Q _{7,10})	0 cfs
Stream Classification	Limit Forage Fish (approx. 3 miles downstream of Outfall 001)
Discharge Type	Existing, Continuous

Facility Description

Belgioioso Cheese Inc. – Freedom (BC – Freedom) production facility produces mozzarella and ricotta cheese, whereas the Vine Road production facility produces hard Italian cheeses. BC - Freedom’s production is highest in the summer months, while Vine Road is highest in the winter months. The plants do not operate at full capacity at the same time. Whey from the cheese-making process is sent through reverse osmosis before being hauled offsite for further processing. Belgioioso currently uses approx. 4.8 million lbs/day of milk between the 2 production facilities. Sanitary (domestic) wastewater is sent to the Freedom Sanitary District POTW.

Effective December 2021, the BC – Freedom wastewater treatment facility accepts process wastewater from the Vine Road facility in addition to the Freedom facility. Wastewater treatment includes 2 process wastewater lift stations, high strength divert systems for each production facility, 3 equalization tanks, dissolved air floatation unit (DAF), 40,000-gallon anoxic selector silo, one 561,042-gallon aeration basin, one ultrafiltration (UF) membrane system, two 40,000-gallon sludge tanks, and two 2-stage sand filters. An additional life station for the polish water from the Vine Road production facility will combine with the treated WWTP water and utilize two cooling towers and effluent pump station. Effluent is discharged on a continuous basis via Outfall 001 to the north bank of an unnamed tributary (UT) to Duck Creek, just south of the facility’s stormwater pond.

Noncontact cooling water (NCCW) from both facilities is discharged on a continuous basis also to the north bank of the UT to Duck Creek, approx. 100 yards upstream of Outfall 001.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on July 18, 2024, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Heidi Schmitt Marquez on February 28, 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)
001	0.31 MGD (2025)	EFFLUENT: 24-hour flow proportional and grab sample of treated process wastewater from the Vine Road and Freedom Production facilities and NCCW/COW water from the Vine Road facility shall be obtained prior to discharge to the creek. Samples and flow are taken following the effluent lift station.
003	N/A – New outfall	EFFLUENT: Noncontact cooling water from both facilities (Belgioioso Freedom and Vine Road).
004	N/A – New outfall	COMBINED TOTAL: Combined total of Outfall 001 and Outfall 003 for total phosphorus and total suspended solids TMDL limits. Since daily loads from Outfall 001 and Outfall 003 are combined mathematically, no effluent sampling is required at Sample Point 004.
002	1,000 tons (per application)	LAND APPLICATION: Landspreading of co - mingled liquid wastewater and sludge to department approved sites and/or storage facilities. Representative samples of comingled waste shall be obtained prior to landspreading on Department approved landspreading sites.

Permit Requirements

1 Surface Water - Monitoring and Limitations

1.1 Sample Point Number: 001- PROCESS WASTEWATER

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Daily Max	30 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Monthly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Daily Max	137 lbs/day	3/Week	Calculated	
BOD5, Total	Monthly Avg	68.5 lbs/day	3/Week	Calculated	
Suspended Solids, Total	Daily Max	30 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids,	Monthly Avg	20 mg/L	3/Week	24-Hr Flow	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Total				Prop Comp	
Suspended Solids, Total	Daily Max	171.6 lbs/day	3/Week	Calculated	TBEL limit.
Suspended Solids, Total	Monthly Avg	86.1 lbs/day	3/Week	Calculated	TBEL limit.
Suspended Solids, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of TSS. See "TMDL Combined Loads" permit section.
Suspended Solids, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of TSS. See "TMDL Combined Loads" permit section.
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	
Halogen, Total Residual as Cl2	Daily Max	19 ug/L	3/Week	24-Hr Flow Prop Comp	
Halogen, Total Residual as Cl2	Weekly Avg	7.3 ug/L	3/Week	24-Hr Flow Prop Comp	
Halogen, Total Residual as Cl2	Monthly Avg	7.3 ug/L	3/Week	24-Hr Flow Prop Comp	
Nitrogen, Ammonia Variable Limit		mg/L	3/Week	See Table	Look up 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	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	4.4 mg/L	3/Week	24-Hr Flow Prop Comp	Effective April - May.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	3.0 mg/L	3/Week	24-Hr Flow Prop Comp	Effective June - October.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	Effective November - March.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	1.8 mg/L	3/Week	24-Hr Flow Prop Comp	Effective April - May.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	1.2 mg/L	3/Week	24-Hr Flow Prop Comp	Effective June - October.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.1 mg/L	3/Week	24-Hr Flow Prop Comp	Effective November - March.
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		lbs/day	3/Week	Calculated	
Phosphorus, Total		lbs/month	3/Week	Calculated	Calculate the Total Monthly Discharge of Phosphorus. See "TMDL Combined Loads" permit section.
Phosphorus, Total		lbs/yr	3/Week	Calculated	Calculate the 12-month rolling sum of Total Monthly Discharge of Phosphorus. See "TMDL Combined Loads" permit section.
Chloride	Daily Max	760 mg/L	3/Week	24-Hr Flow Prop Comp	
Chloride	Weekly Avg	400 mg/L	3/Week	24-Hr Flow Prop Comp	
Chloride	Monthly Avg	400 mg/L	3/Week	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	Monthly monitoring in 2027 only.
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 + Nitrite

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					Nitrogen.
Temperature	Daily Max	78 deg F	Daily	Continuous	Limit effective January.
Temperature	Daily Max	79 deg F	Daily	Continuous	Limit effective February and December.
Temperature	Daily Max	80 deg F	Daily	Continuous	Limit effective March and November.
Temperature	Daily Max	81 deg F	Daily	Continuous	Limit effective April.
Temperature	Daily Max	84 deg F	Daily	Continuous	Limit effective May.
Temperature	Daily Max	85 deg F	Daily	Continuous	Limit effective June and September.
Temperature	Daily Max	86 deg F	Daily	Continuous	Limit effective July and August.
Temperature	Daily Max	83 deg F	Daily	Continuous	Limit effective October.
Temperature	Weekly Avg	54 deg F	Daily	Continuous	Limit effective January - February and November - December.
Temperature	Weekly Avg	57 deg F	Daily	Continuous	Limit effective March.
Temperature	Weekly Avg	63 deg F	Daily	Continuous	Limit effective April and October.
Temperature	Weekly Avg	70 deg F	Daily	Continuous	Limit effective May.
Temperature	Weekly Avg	77 deg F	Daily	Continuous	Limit effective June.
Temperature	Weekly Avg	81 deg F	Daily	Continuous	Limit effective July.
Temperature	Weekly Avg	79 deg F	Daily	Continuous	Limit effective August.
Temperature	Weekly Avg	73 deg F	Daily	Continuous	Limit effective September.
Acute WET	Daily Max	1.0 TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET Section.
Chronic WET		TUa	Quarterly	24-Hr Flow Prop Comp	See WET Section.

1.1.1 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.

- **Total Suspended Solids TMDL Limits-** Interim limits of 30 mg/L as a daily maximum and 20 mg/L as a monthly average go into effect upon reissuance and will remain in effect unless a more stringent limit is required or the limit is relaxed following procedures outlined in ch. NR 207, Wis. Adm. Code. Discharge effluent concentration (mg/L) shall

be reported 3 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 4.6 lbs/day as a daily max and 2.2 lbs/day as a monthly average will go into effect in accordance with the Total Suspended Solids - TMDL Derived WQBELs for TSS Compliance Schedule. Compliance with the final limits will be calculated and determined at Outfall 004.

- **Halogen, Total Residual as Cl₂** – Daily max, weekly, and monthly average limits added.
- **Phosphorus TMDL Limits**- Mass-based phosphorus limits have been added to the permit to comply with requirements of the Lower Fox River Basin TMDL. Effluent concentration (mg/L) shall be monitored and reported three times per week upon permit reissuance and will be used to calculate amounts reported for mass-based limits. 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. Total phosphorus limits for Outfalls 001 and 003 have been combined and compliance is measured at Outfall 004.
- **Total Nitrogen Monitoring (TKN, NO₂+NO₃ and Total N)**: Quarterly monitoring was added to the permit.
- **Acute WET** – Monitoring frequency increased to two times per year during the permit term.
- **Chronic WET** – Monitoring frequency increased to quarterly during the permit term.

1.1.2 Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated February 11, 2025 and technology based effluent limits (TBEL) memo dated February 11, 2025.

Monitoring Frequencies- The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. Temperature monitoring increased from 3/week to daily because the permittee has a continuous temperature meter and therefore has daily data that is required to be reported.

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 averages whenever practicable.

TMDL: Reporting of TMDL calculations is required at Outfall 001 and 003 to provide the required data for reporting the combined TSS and TP mass discharge at Outfall 004. Collection of flow data on the same day as TSS and TP samples are taken at both Outfalls is critical to the calculation of total TP and TSS mass discharge for compliance with the TMDL limitations. This data is used for all water quality based effluent calculations including TMDL mass limitations. Accurate flow measurements are also a requirement of all industrial wastewater dischargers pursuant to s. NR 218.05, Wis. Adm. Code.

Total Halogens - Total halogen WQBELs are typically used to control the discharge of any additives that are chlorine-based, halogen-based, or any additives that remove them from the discharge. Because sodium metabisulfite, sodium hypochlorite, XY-12, Principal, and REG 13 additives are added in the waste stream to Outfall 001, daily maximum and weekly average limits were added to the reissued permit. The monthly average limit is required during the reissued permit term to satisfy the expression of limits requirements as described in s. NR 106.07, Wis. Adm. Code.

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.

1.2 Sample Point Number: 003- NCCW DISCHARGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total	Monthly Avg	160 mg/L	3/Week	24-Hr Flow Prop Comp	Interim limit effective upon permit issuance until the completion of the BOD - WQBELs for BOD Compliance Schedule.
BOD ₅ , Total	Daily Max	30 mg/L	3/Week	24-Hr Flow Prop Comp	Effective following the BOD - WQBELs for BOD Compliance Schedule.
BOD ₅ , Total	Monthly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	Effective following the BOD - WQBELs for BOD Compliance Schedule.
Suspended Solids, Total	Daily Max	30 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	20 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		lbs/day	3/Week	Calculated	
Suspended Solids, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of TSS. See "TMDL Combined Loads" permit section.
Suspended Solids, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of TSS. See "TMDL Combined Loads" permit section.
pH Field	Daily Min	6.0 su	Daily	Grab	
pH Field	Daily Max	9.0 su	Daily	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	Daily	Grab	
Oil & Grease (Hexane)	Daily Max	15 mg/L	3/Week	Grab	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Oil & Grease (Hexane)	Monthly Avg	15 mg/L	3/Week	Grab	
Temperature	Daily Max	78 deg F	Daily	Continuous	Limit effective January
Temperature	Daily Max	79 deg F	Daily	Continuous	Limit effective February and December.
Temperature	Daily Max	80 deg F	Daily	Continuous	Limit effective March and November.
Temperature	Daily Max	81 deg F	Daily	Continuous	Limit effective April.
Temperature	Daily Max	84 deg F	Daily	Continuous	Limit effective May.
Temperature	Daily Max	85 deg F	Daily	Continuous	Limit effective June and September.
Temperature	Daily Max	86 deg F	Daily	Continuous	Limit effective July and August.
Temperature	Daily Max	83 deg F	Daily	Continuous	Limit effective October.
Temperature	Weekly Avg	54 deg F	Daily	Continuous	Limit effective January - February and November - December.
Temperature	Weekly Avg	57 deg F	Daily	Continuous	Limit effective March.
Temperature	Weekly Avg	63 deg F	Daily	Continuous	Limit effective April.
Temperature	Weekly Avg	70 deg F	Daily	Continuous	Limit effective May.
Temperature	Weekly Avg	77 deg F	Daily	Continuous	Limit effective June.
Temperature	Weekly Avg	81 deg F	Daily	Continuous	Limit effective July.
Temperature	Weekly Avg	79 deg F	Daily	Continuous	Limit effective August.
Temperature	Weekly Avg	73 deg F	Daily	Continuous	Limit effective September.
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		lbs/day	3/Week	Calculated	
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of Phosphorus. See "TMDL Combined Loads" permit section.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					rolling sum of Total Monthly Discharge of Phosphorus. See "TMDL Combined Loads" permit section.

1.2.1 Changes from Previous Permit

N/A – New outfall

1.2.2 Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated February 11, 2025.

Monitoring Frequencies- The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

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

TMDL: Reporting of TMDL calculations is required at Outfall 001 and 003 to provide the required data for reporting the combined TSS and TP mass discharge at Outfall 004. Collection of flow data on the same day as TSS and TP samples are taken at both Outfalls is critical to the calculation of total TP and TSS mass discharge for compliance with the TMDL limitations. This data is used for all water quality based effluent calculations including TMDL mass limitations. Accurate flow measurements are also a requirement of all industrial wastewater dischargers pursuant to s. NR 218.05, Wis. Adm. Code.

1.3 Sample Point Number: 004- COMBINED TOTAL

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Suspended Solids, Total		lbs/day	3/Week	24-Hr Flow Prop Comp	
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 Combined Loads" permit section.
Suspended Solids,		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Total					mass of TSS and report on the last day of the month on the DMR. See "TMDL Combined Loads" permit section.
Phosphorus, Total		lbs/day	3/Week	24-Hr Flow Prop Comp	
Phosphorus, Total		lbs/month	Monthly	Calculated	See "TMDL Combined Loads" and Phosphorus TMDL permit sections.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See "TMDL Combined Loads" and Phosphorus TMDL permit sections.
WQT Credits Used (TSS)		lbs/month	Monthly	Calculated	Report WQT TSS Credits used per month using Equation 2c in the Water Quality Trading (WQT) section. Available TSS credits are specified in Table 2 and in the approved Water Quality Trading Plan.
WQT Computed Compliance (TSS)	Daily Max	4.6 lbs/day	Monthly	Calculated	Report the WQT TSS Computed Compliance value using Equation 4b in the Water Quality Trading (WQT) section. Value shall be entered on the last day of the month.
WQT Computed Compliance (TSS)	Monthly Avg	2.2 lbs/day	Monthly	Calculated	Report the WQT TSS Computed Compliance value using Equation 4b in the Water Quality Trading (WQT) section. Value shall be entered on the last day of the month.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
WQT Credits Used (TSS)	Annual Total	14,600 lbs/yr	Annual	Calculated	The sum of total monthly credits used may not exceed Table 2 values listed.
WQT Credits Used (TP)		lbs/month	Monthly	Calculated	Report WQT TSS Credits used per month using Equation 1b in the Water Quality Trading (WQT) section. Available TP credits are specified in Table 2 and in the approved Water Quality Trading Plan.
WQT Computed Compliance (TP)	6-Month Avg	0.24 lbs/day	Monthly	Calculated	Compliance with the six-month average limit is evaluated at the end of the six-month period on June 30 and December 31.
WQT Computed Compliance (TP)	Monthly Avg	0.71 lbs/day	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3a in the Water Quality Trading (WQT) section. Value shall be entered on the last day of the month.
WQT Credits Used (TP)	Annual Total	49 lbs/yr	Annual	Calculated	The sum of total monthly credits used may not exceed Table 2 values listed for 2026 thru 2029.
WQT Credits Used (TP)	Annual Total	23.61 lbs/yr	Annual	Calculated	The sum of total monthly credits used may not exceed Table 2 values listed for 2030 and 2031.

1.3.1 Changes from Previous Permit

Outfall 004 is a new outfall that was created to track compliance with the TMDL limits for the facility that are applied to the sum of outfalls 001 and 003.

1.3.2 Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated February 11, 2025.

Lower Fox River Basin Total Maximum Daily Load (TMDL): The permitted facility is located within the Lower Fox River Basin Total Maximum Daily Load (LFRB TMDL), which was approved by EPA May 18, 2012. 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 74 lbs/yr for phosphorus and 544 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 2024 *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).

For phosphorus, continuously discharging facilities covered by the LFRB 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 0.029 mg/L at Outfall 001 and 0.11 mg/L at Outfall 003 were calculated for the facility, thus, TMDL-based mass limits are expressed as a monthly average of 0.71 lbs/day and a six-month average of 0.24 lbs/day.

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

Facilities with LFRB 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 maximum 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 requirements are based on the Phosphorus Rules that became effective December 1, 2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. Currently in NR 217 Wis. Adm. Code there are two methods used to determine if a phosphorus limit is needed: a technology based effluent limit (TBEL) and a water quality based effluent limit (WQBEL). Based on the size and classification of the stream, the water quality criteria for the Unnamed Tributary is 0.075 mg/L. In this case, the WQBEL is 0.225 mg/L as a monthly average and 0.075 mg/L as a 6-month average and 0.71 lbs/day as a monthly average and 0.24 lbs/day as a six-month average. 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 it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly value. The final effluent limit for phosphorus is expressed as a six-month average. It is also expressed as a monthly average equal to three times the derived WQBEL (which equates to 0.225 mg/L). This final effluent limit was derived from and complies with the applicable water quality criterion. A phosphorus concentration limit is necessary to prevent backsliding during the term of the permit.

The wastewater treatment facility is not able to meet the WQBELs for TSS and TP. This permit authorizes the use of trading as a tool to demonstrate compliance with the phosphorus WQBELs. This permit includes terms and conditions related to the Water Quality Trading Plan (WQT-2025-0018) or approved amendments thereof. The total 'WQT TP Credits' available are designated in the approved WQT Plan. The permittee is implementing management practices including cropland conversion into perennial vegetation and grassland. The WQT Plan proposes the generation of 49 lbs/yr of phosphorus credits for the next five years.

Additional WQT subsections in the permit provide information on compliance determinations, annual reporting and re-opening of the permit.

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

2.1 Sample Point Number: 002- CO-MINGLED IND WW & 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	Monthly	Grab	
Nitrogen, Ammonia (NH3-N) Total		Percent	Monthly	Grab	
Phosphorus, Total		Percent	Monthly	Grab	
Phosphorus, Water Extractable		% of Tot P	Monthly	Grab	
Potassium, Total Recoverable		Percent	Monthly	Grab	
Lead Dry Wt		mg/kg	Quarterly	Grab	
Zinc Dry Wt		mg/kg	Quarterly	Grab	
Copper Dry Wt		mg/kg	Quarterly	Grab	
Cadmium Dry Wt		mg/kg	Quarterly	Grab	
Nickel Dry Wt		mg/kg	Quarterly	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.

2.1.1 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.

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

2.1.2 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 Schedules

3.1 BOD5 - WQBELs for BOD (Outfall 003)

The permittee shall comply with the WQBELs (Water Quality Based Effluent Limits) for BOD5 as specified.

Required Action	Due Date
<p>Operational Evaluation Report: The permittee shall prepare and submit to the Department for approval an operational evaluation report. The report shall include an evaluation of collected effluent data, possible source reduction measures, operational improvements or other minor facility modifications that will optimize reductions in BOD discharges from the treatment plant during the period prior to complying with final BOD WQBELs and, where possible, enable compliance with final BOD WQBELs by April 1, 2029. The report shall provide a plan and schedule for implementation of the measures, improvements, and modifications as soon as possible, but not later than April 1, 2029 and state whether the measures, improvements, and modifications will enable compliance with final BOD WQBELs. Regardless of whether they are expected to result in compliance, the permittee shall implement the measures, improvements, and modifications in accordance with the plan and schedule specified in the operational evaluation report.</p> <p>If the operational evaluation report concludes that the facility can achieve final BOD WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the permittee shall comply with the final BOD WQBEL by April 1, 2029 and is not required to comply with the milestones identified below for years 3 through 5 of this compliance schedule ("Preliminary Compliance Alternatives Plan", "Final Compliance Alternatives Plan", "Final Plans and Specifications", "Treatment Plant Upgrade to Meet WQBELs", "Complete Construction", "Achieve Compliance").</p> <p>STUDY OF FEASIBLE ALTERNATIVES - If the Operational Evaluation Report concludes that the permittee cannot achieve final BOD WQBELs with source reduction measures, operational improvements and other minor facility modifications, the permittee shall initiate a study of feasible alternatives for meeting final BOD WQBELs and comply with the remaining required actions of this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final BOD WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the Department may reopen and modify the permit to include an implementation schedule for achieving the final BOD WQBELs sooner than May 31, 2031.</p>	<p>10/01/2026</p>
<p>Compliance Alternatives, Source Reduction, Improvements and Modifications Status: The permittee shall submit a 'Compliance Alternatives, Source Reduction, Operational Improvements and Minor Facility Modification' status report to the Department. The report shall provide an update on the permittee's: (1) progress implementing source reduction measures, operational improvements, and minor facility modifications to optimize reductions in BOD discharges and, to the extent that</p>	<p>04/01/2027</p>

such measures, improvements, and modifications will not enable compliance with the WQBELs, (2) status evaluating feasible alternatives for meeting BOD WQBELs.	
Preliminary Compliance Alternatives Plan: The permittee shall submit a preliminary compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee's wastewater treatment facility is necessary to achieve final BOD WQBELs, the submittal shall include a preliminary engineering design report.	10/01/2027
Final Compliance Alternatives Plan: The permittee shall submit a final compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee's wastewater treatment is necessary to meet final BOD WQBELs, the submittal shall include a final engineering design report addressing the treatment plant upgrades, and a facility plan if required pursuant to ch. NR 110.	04/01/2028
Progress Report on Plans & Specifications: Submit progress report regarding the progress of preparing final plans and specifications. Note: See 'Alternative Approaches' above.	10/01/2028
Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final BOD WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance is subject to s. 283.53(2) Stats.) Note: See 'Alternative Approaches' above.	04/01/2029
Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41, Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications. Note: See 'Alternative Approaches' above.	10/01/2029
Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches' above.	04/01/2030
Construction Upgrade Progress Report #2: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches' above.	10/01/2030
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches' above.	01/01/2031
Achieve Compliance: The permittee shall achieve compliance with final BOD WQBELs. Note: See 'Alternative Approaches' above.	05/31/2031

3.1.1 Explanation of Schedule

This compliance schedule requires the permittee to comply with the final water quality-based BOD limits within 5 years.

The permittee may be required to meet the final BOD WQBEL sooner than May 31, 2031 (less than 5 years) if the required “Operational Evaluation Report” concludes that the BOD WQBEL can be met using the existing treatment system with only source reduction measures, operational improvements and minor facility modifications. Also, the permittee will conduct a “Study of Feasible Alternatives” to determine whether Water Quality Trading or Adaptive Management, either alone or in combination with plant upgrades will allow the plant to meet the BOD WQBEL. The department believes that the compliance schedule suggested in the draft permit provides the appropriate length of time for the permittee to evaluate these options, implement the chosen option and meet the final BOD limits (WQBELs).

3.2 Total Suspended Solids - TMDL Derived WQBELs for TSS

The permittee shall comply with the TMDL (Total Maximum Daily Load) derived WQBELs (Water Quality Based Effluent Limits) for TSS as specified.

Required Action	Due Date
<p>Operational Evaluation Report: The permittee shall prepare and submit to the Department for approval an operational evaluation report. The report shall include an evaluation of collected effluent data, possible source reduction measures, operational improvements or other minor facility modifications that will optimize reductions in TSS discharges from the treatment plant during the period prior to complying with final TSS WQBELs and, where possible, enable compliance with final TSS WQBELs by October 1, 2028. The report shall provide a plan and schedule for implementation of the measures, improvements, and modifications as soon as possible, but not later than October 1, 2028 and state whether the measures, improvements, and modifications will enable compliance with final TSS WQBELs. Regardless of whether they are expected to result in compliance, the permittee shall implement the measures, improvements, and modifications in accordance with the plan and schedule specified in the operational evaluation report.</p> <p>If the operational evaluation report concludes that the facility can achieve final TSS WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the permittee shall comply with the final TSS WQBEL by October 1, 2028 and is not required to comply with the milestones identified below for years 3 through 5 of this compliance schedule ("Preliminary Compliance Alternatives Plan", "Final Compliance Alternatives Plan", "Final Plans and Specifications", "Treatment Plant Upgrade to Meet WQBELs", "Complete Construction", "Achieve Compliance").</p> <p>STUDY OF FEASIBLE ALTERNATIVES - If the Operational Evaluation Report concludes that the permittee cannot achieve final TSS WQBELs with source reduction measures, operational improvements and other minor facility modifications, the permittee shall initiate a study of feasible alternatives for meeting final TSS WQBELs and comply with the remaining required actions of this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final TSS WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the Department may reopen and modify the permit to include an implementation schedule for achieving the final TSS WQBELs sooner than May 31, 2031.</p>	10/01/2026
<p>Compliance Alternatives, Source Reduction, Improvements and Modifications Status: The permittee shall submit a 'Compliance Alternatives, Source Reduction, Operational Improvements and Minor Facility Modification' status report to the Department. The report shall provide an update on the permittee's: (1) progress implementing source reduction measures, operational improvements, and minor facility modifications to optimize reductions in TSS discharges and, to the extent that such measures, improvements, and modifications will not enable compliance with the WQBELs, (2) status evaluating feasible alternatives for meeting TSS WQBELs.</p>	04/01/2027

<p>Preliminary Compliance Alternatives Plan: The permittee shall submit a preliminary compliance alternatives plan to the Department.</p> <p>If the plan concludes upgrading of the permittee’s wastewater treatment facility is necessary to achieve final TSS WQBELs, the submittal shall include a preliminary engineering design report.</p> <p>If the plan concludes Adaptive Management will be used, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 without the Adaptive Management Plan.</p> <p>If water quality trading will be undertaken, the plan must state that trading will be pursued.</p>	10/01/2027
<p>Final Compliance Alternatives Plan: The permittee shall submit a final compliance alternatives plan to the Department.</p> <p>If the plan concludes upgrading of the permittee’s wastewater treatment is necessary to meet final TSS WQBELs, the submittal shall include a final engineering design report addressing the treatment plant upgrades, and a facility plan if required pursuant to ch. NR 110.</p> <p>If the plan concludes Adaptive Management will be implemented, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 and an engineering report addressing any treatment system upgrades necessary to meet interim limits.</p> <p>If the plan concludes water quality trading will be used, the submittal shall identify potential trading partners.</p> <p>Alternative Approaches: Rather than upgrading the wastewater treatment facility to comply with WQBELs for TSS, the permittee may use Water Quality Trading or the Adaptive Management Option to achieve compliance, provided that the permit is modified, revoked and reissued, or reissued to incorporate any such alternative approach. If the Final Compliance Alternatives Plan concludes that a variance will be pursued, the Plan shall provide information regarding the basis for the variance.</p>	04/01/2028
<p>Progress Report on Plans & Specifications: Submit progress report regarding the progress of preparing final plans and specifications.</p> <p>Note: See 'Alternative Approaches' above.</p>	10/01/2028
<p>Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Water Quality Trading measures the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final TSS WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance is subject to s. 283.53(2) Stats.)</p> <p>Note: See 'Alternative Approaches' above.</p>	04/01/2029
<p>Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41, Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.</p> <p>Note: See 'Alternative Approaches' above.</p>	10/01/2029
<p>Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades.</p>	04/01/2030

Note: See 'Alternative Approaches' above.	
Construction Upgrade Progress Report #2: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches' above.	10/01/2030
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches' above.	01/01/2031
Achieve Compliance: The permittee shall achieve compliance with final TSS WQBELs. Note: See 'Alternative Approaches' above.	05/31/2031

3.2.1 Explanation of Schedule

This compliance schedule requires the permittee to comply with the final water quality-based TSS limits within 5 years. The permittee may be required to meet the final TSS WQBEL sooner than May 31, 2031 (less than 5 years) if the required “Operational Evaluation Report” concludes that the TSS WQBEL can be met using the existing treatment system with only source reduction measures, operational improvements and minor facility modifications. Also, the permittee will conduct a “Study of Feasible Alternatives” to determine whether Water Quality Trading or Adaptive Management, either alone or in combination with plant upgrades will allow the plant to meet the TSS WQBEL. The department believes that the compliance schedule suggested in the draft permit provides the appropriate length of time for the permittee to evaluate these options, implement the chosen option and meet the final TSS limits (WQBELs).

3.3 Water Quality Trading (WQT) Annual Report

Required Action	Due Date
<p>Annual WQT Report: Submit an annual WQT report that shall cover the first year of the permit term. The WQT Report shall include:</p> <p>The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance;</p> <p>The source of each month’s pollutant reduction credits by identifying the approved water quality trading plan that details the source;</p> <p>A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and</p> <p>Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.</p>	01/31/2027
Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year.	01/31/2028
Annual WQT Report #3: Submit an annual WQT report that shall cover the previous year.	01/31/2029

Annual WQT Report #4: Submit the 4th annual WQT report. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	01/31/2030
Annual WQT Report #5: Submit the 5th annual WQT report. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	01/31/2031
Annual WQT Report Required After Permit Expiration: In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of noncompliance or failure to implement any terms or conditions of the approved water quality trading plan for the previous calendar year.	

3.3.1 Explanation of Schedule

Reports are required that include the following information:

- Verification that site inspections occurred;
- Brief summary of site inspection findings;
- Identification of noncompliance or failure to implement any terms or conditions of the permit or trading plan that have not been reported in discharge monitoring reports;
- Any applicable notices of termination or management practice registration; and
- A summary of credits used each month over the calendar year

3.4 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	07/01/2027

3.4.1 Explanation of Schedule

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

Attachments

Water Quality Based Effluent Limitations for Belgioioso Cheese Inc. – Freedom WPDES Permit No. WI-0066176-02-0, Michael Polkinghorn, dated February 11, 2025

Technology-Based Effluent Limitations for Belgioioso Cheese Inc. – Freedom WPDES Permit No. WI-0066176-02-0, Michael Polkinghorn, dated February 11, 2025

Belgioioso Cheese, Inc. – Freedom Plant Water Quality Trading Plan – Conditional Approval, Laura Gerold, Wastewater Engineer, dated October 20, 2025

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: May 7, 2026