

Permit Modification Fact Sheet

Changes from the previous permit fact sheet are highlighted in grey.

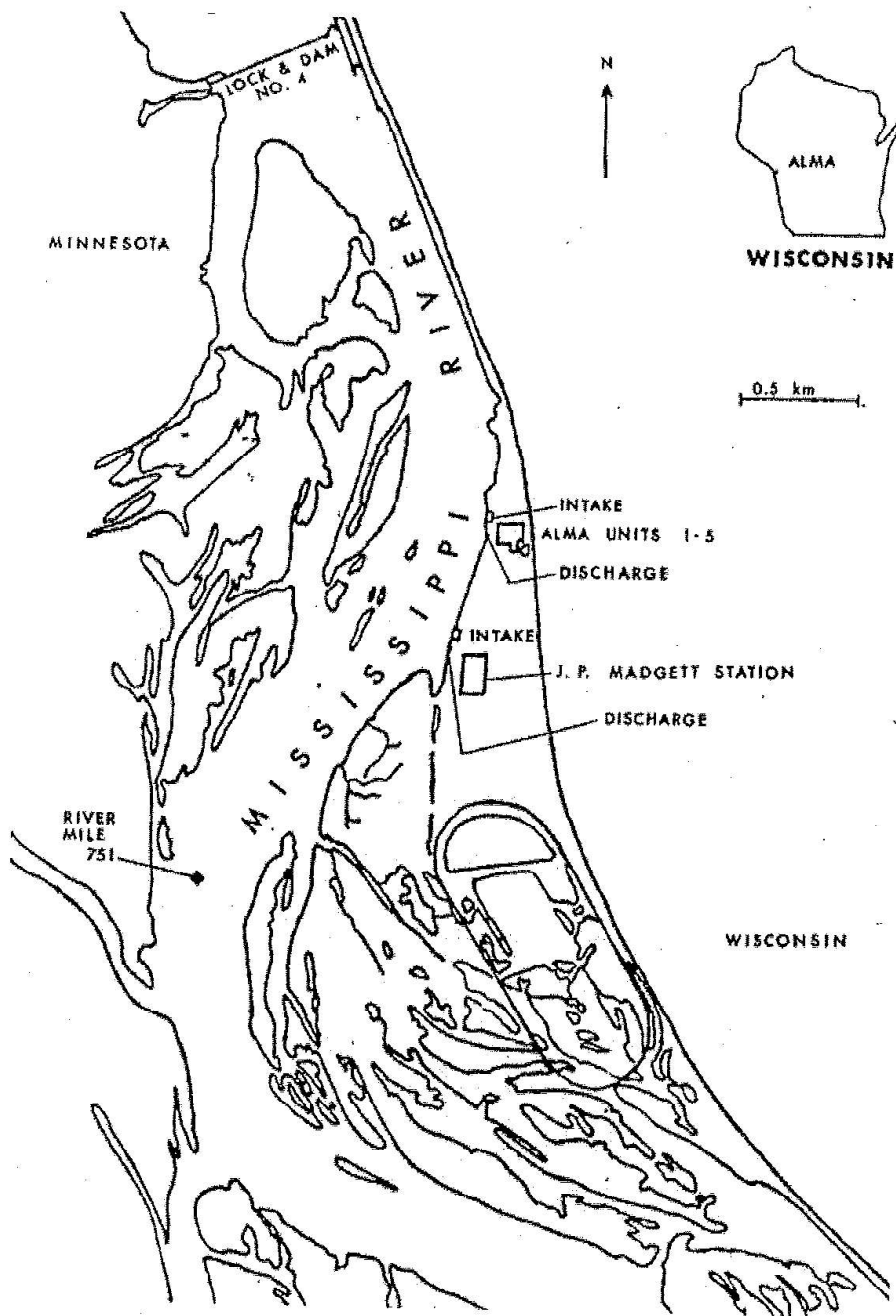
General Information

Permit Number:	WI-0040223-09-1
Permittee Name:	Dairyland Power Cooperative Alma
Address:	500 OLD STH 35
City/State/Zip:	ALMA WI 54610
Discharge Location:	East bank of Mississippi River, south of J.P. Madgett screenhouse. N44 18.363' W91 54.787'
Receiving Water:	Mississippi River
StreamFlow (Q _{7,10}):	6100 cfs
Stream Classification:	Warm Water Sport Fish Community, Non-public Water Supply

Facility Description

Dairyland Power Cooperative owns and operates the J.P. Madgett Unit coal-fired power station near Alma, Wisconsin. Previously the permittee operated Alma units 1-5 and J.P. Madgett Unit, however the final Alma units was taken offline in October 2014.

The J.P. Madgett Unit has been in commercial operation since November 1979. The single unit station has a generating capacity of 400 MW of electricity. All discharges covered by this permit are to the Mississippi River with the exception of the coal pile runoff which would discharge to groundwater. The only time the coal pile basins have had any water in them is when the river levels are high. Outfall 006 is process wastewater from a treatment system which consists of chemically assisted settling. De-ice water and intake and screen backwash water are diversions of cooling water and river water and are listed as Outfalls for reporting purposes. Stormwater from Outfalls 011 and 012 will continue to be covered by the facility's industrial stormwater permit. The facility's dry Flue Gas Desulfurization (FGD) system does not contribute wastewater. See Figure 1 for the site map.



Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, land app reports, compliance schedule items, and a site visit on April 14, 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)
703	Maximum design intake volume: 322.6 MGD. Average intake volume: 322.6 MGD.	Intake screening system and intake water monitoring. The intake is located approximately 1.5 miles downstream of USACE Lock and Dam No. 4 on the east bank of the Mississippi River at RM 751.2 and oriented parallel to the river flow. The intake has four fore bays with a skimmer wall, trash rack, and traveling screens which feed two pump bays. A skimmer wall is located at the face of the intake and extends down to El. 659.0 ft, approximately 1 ft below normal pool level. The invert of the structure is El. 640.0 ft. The temperature probe is mounted on northwest corner of screen house on river side of travelling water screens. The temperature probe is mounted on northwest corner of screen house on river side of travelling water screens.
001	Noncontact cooling water average flow: 219.2 MGD Maximum daily flow: 322.6 MGD	Condenser cooling water. East bank of the Mississippi River, South of J.P. Madgett screenhouse. N44 18.363' W91 54.787'. Non-contact condenser cooling water from J.P. Madgett. No treatment provided. Temp probe is mounted on northwest corner of screen house on river side of travelling water screens. The facility is approved to estimate flow at this sample point. Temperature and pH are collected from the northwest corner of the outfall structure prior to water entering river.
002	Maximum daily flow: 0 MGD	Coal pile runoff from Alma 1-5. East bank of the Mississippi River, North of J.P. Madgett screenhouse. N44 18.435' W91 54.797'. Treatment consists of settling. The facility is approved to estimate flow at this sample point.
003	Average flow: 0.4749 MGD Daily Maximum 1.84 MGD	Intake screen backwash. East bank of the Mississippi River, at the J.P. Madgett screenhouse. N44 18.370' W91 54.815'. J.P. Madgett intake screen backwash. No treatment provided. The facility is approved to estimate flow at this sample point.
004	Average flow: 0.2556 MGD Daily Maximum 0.9921 MGD	Fish Return. East bank of the Mississippi River at the J.P. Madgett screenhouse. N44 18.370' W91 54.815'. J.P. Madgett fish return, screen backwash. No treatment provided. The facility is approved to estimate flow at this sample point.
005	Average flow: 23.75 MGD Daily Maximum 25.23 MGD	J.P. Madgett intake de-icing water. East bank of the Mississippi River, at the J.P. Madgett screenhouse. N44° 18.370' W91° 54.815'.. No treatment provided. The facility is approved to estimate flow at this sample point.
006	Daily Maximum flow: 0.9984 MGD includes process wastewater, coal ash landfill leachate, stormwater, and boiler blowdown.	East bank of the Mississippi River, South of J.P. Madgett screenhouse. N44° 18.183' W91° 54.808'. Boiler blowdown, demineralization wastewater, coal ash landfill leachate, stormwater, metal cleaning wastewater, and other power plant low volume wastewaters. Treatment consists of pH adjustments and settling. Wastewater from 006 may be diverted after treatment to combine

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)
		with outfall 001 after being sampled at outfall 106, prior to comingling with the non-contact condenser cooling water being sampled at outfall 001. During months when these waste streams are combined the water quality based effluent limits at outfall 001 are applicable but the ones at outfall 006 are not applicable. Grab samples are pulled from secondary lagoon weir prior to water cascading over weir teeth. Composite sample is pulled between the secondary weir and the parshall flume. Flow is measured using a radar transmitter.
007	There has only been one release of water from this discharge point due to an extreme rain event in August of 2016 with a daily maximum flow of 270,000 gallons.	Coal pile run off. South of the bottom ash dewatering building. Outfall discharges to the Mississippi river backwater area. N44° 17.948' W91° 54.719'. J.P. Madgett coal pile runoff. Treatment consists of settling. Samples are collected at end of pipe.
008	Average 0.10 MGD per precipitation event	Seepage from the Alma 1-5 coal pile runoff basin to groundwater. The facility is approved to estimate flow at this sample point.
009	Average 0.10 MGD per precipitation event	Seepage from the J.P. Madgett coal pile runoff basin to groundwater. The facility is approved to estimate flow at this sample point.
101	N/A	Field blank sample collected at the same time as the effluent sample
106	New sample point.	This sample point is at the same location as outfall 006 and samples are taken in the same manor. This outfall is where low volume wastewater will be sampled and reported. This allows for a consistent sampling location and reporting location on the DMRs regardless of if the low volume wastewater is discharged after treatment at outfall 006 or at outfall 001. Grab samples are pulled from secondary lagoon weir prior to water cascading over weir teeth. Composite sample is pulled between the secondary weir and the parshall flume. Flow is measured using a radar transmitter.

1 Influent – Cooling Water Intake Structure - Proposed Monitoring

Sample Point Number: 703- Influent from Mississippi R.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ug/L	Monthly	Grab	
Temperature Average		deg F	Daily	Continuous	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow rate		MGD	Daily	Continuous	
Intake Water Used Exclusively For Cooling		%	Daily	Calculated	

Changes from Previous Permit

Influent monitoring requirements were re-evaluated for the proposed permit term and the following changes were made from the previous permit;

Intake Water: Annual percentage reporting for Intake Water Used Exclusively For Cooling has been added.

Flow Rate: Flow Rate in MGD shall be reported Daily, with a Max Variable Flow Rate Limit only in effect when surface water elevation falls below top of the water intake screen. Flow Rate- feet/sec is only reported when Daily Max Variable Limit is in effect and does not need to be reported when surface water elevations are above the top of the water intake screen. See permit for additional reporting instructions and information.

Narrative Requirements: New requirements added per ch. NR 111 Wis. Adm. Code., promulgated in 2020.

1.1.1 Explanation of Limits and Monitoring Requirements

The cooling water intake is not approved as BTA (Best Technology Available) for minimizing adverse environmental impacts in accordance with the requirements in s. 283.31(6), Wis. Stats., and section 316(b) of the Clean Water Act. The facility is in compliance with impingement mortality BTA when operated optimally in accordance with the intake optimization study which the facility is in the process of finalizing. The facility is in compliance with intake entrainment BTA.

See Appendix B for an evaluation of candidate technologies for entrainment and impingement BTA. Further description of the intake is provided in that appendix as well.

Floating debris and accumulated trash collected on the intake structure and screens shall be removed and disposed of in a manner to prevent any pollutant from the material from entering the waters of the State pursuant to s. NR 205.07 (3) (a), Wis. Adm. Code.

Intake Water: Annual percentage reporting for Intake Water Used Exclusively For Cooling has been added to analyze applicability criteria in s. NR 111.02, Wis. Adm. Code.

Flow Rate: Flow Rate monitoring has been added to analyze applicability criteria in s. NR 111.02, Wis. Adm. Code.

1.1.1.1 Operation of the modified traveling screens

The modified traveling screens shall be operated in an optimized manor in accordance with the optimization study.

1.1.1.2 Future BTA

Requirements in this section of the permit have been established in accordance with ch. NR 111, Wis. Adm. Code. Refer to Dairyland Alma's Water Intake Structure BTA Determination (Appendix B) and the WPDES permit for more information.

1.1.1.3 Visual or Remote Inspections

The permittee is required to conduct visual or remote inspections of the intake structure at least weekly during periods of operation, pursuant to s. NR 111.14(4), Wis. Adm. Code.

1.1.1.4 Reporting Requirements

The permittee is required to submit an annual certification statement and report, pursuant to s. NR 111.15(1)(c), Wis. Adm. Code.

1.1.1.5 Intake Screen Discharges and Removed Substances

Floating debris and accumulated trash collected on the cooling water intake trash rack shall be removed and disposed of in a manner to prevent any pollutant from the material from entering the waters of the State pursuant to s. NR 205.07 (3) (a), Wis. Adm. Code, except that backwashes may contain fine materials that originated from the intake water source such as sand, silt, small vegetation or aquatic life.

1.1.1.6 Endangered Species Act

This permit does not authorize take of threatened or endangered species. 40 CFR §125.98 (b) (1) requires the inclusion of this provision in all permits subject to 316(b) requirements. Contact the state Natural Heritage Inventory (NHI) staff with inquiries regarding incidental take of state-listed threatened and endangered species and the US Fish and Wildlife Service with inquiries regarding incidental take of federally-listed threatened and endangered species.

1.1.1.7 Requirement for USF&W Service Review

As part of the departments review of the surface water intake structure, the department had the US Fish and Wildlife Service review the intake structure under 40 § CFR 125.98(h). The US Fish and Wildlife Service had no comments, suggested changes, or required changes.

2 Inplant - Proposed Monitoring and Limitations

Sample Point Number: 101- Effluent field blank

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ug/L	Monthly	Grab	

Changes from Previous Permit:

Temperature monitoring has been removed from this sample point.

Explanation of Limits and Monitoring Requirements

Mercury samples are required to be taken along with a field blank. This sample point gives the facility a place on the DMRs to report the mercury field blank sample.

Sample Point Number: 106- Low Volume Wastewater

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Estimated	
Suspended Solids, Total	Daily Max	100 mg/L	Daily	24-Hr Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	Daily	24-Hr Comp	
Oil & Grease (Hexane)	Daily Max	20 mg/L	Quarterly	Grab	
Oil & Grease (Hexane)	Monthly Avg	15 mg/L	Quarterly	Grab	
Mercury, Total Recoverable	Daily Max	4.6 ng/L	Monthly	Grab	Sample Point Number 101 will be used to report the effluent field blank.
Iron, Total Recoverable	Daily Max	1.0 mg/L	See Permit Note	24-Hr Comp	Samples are only required on days with a metal cleaning wastewater is discharged to the river.
Copper, Total Recoverable	Daily Max	100 µg/L	Daily	24-Hr Comp	Samples are only required on days with a metal cleaning wastewater is discharged to the river.
Copper, Total Recoverable	Daily Max	1.2 lb/Day	Daily	Calculated	Samples are only required on days with a metal cleaning wastewater is discharged to the river.
PFOS		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
PFOA		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.

Changes from Previous Permit:

This sample point is being added to clarify when and where effluent monitoring and limits are applicable for the Low Volume Wastewater.

Explanation of Limits and Monitoring Requirements

Mercury-

The 30-day P₉₉ of representative data is 1.64 ng/L, which is greater than the most stringent limit (wildlife criterion of 1.3 ng/L); therefore, a limit is required for mercury. The current permit includes a mercury variance with an alternative effluent limit of 4.6 ng/L at Outfall 006; this limit is also included in this permit.

PFOS and PFOA – NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. At the first reissuance of a WPDES permit after August 1, 2022, the new rule requires WPDES permits for industrial dischargers to be evaluated on a case-by-case basis to determine if monitoring is required pursuant to s. NR 106.98(2)(d), Wis. Adm. Code. The department evaluated the need for PFOS and PFOA monitoring taking into consideration industry type and other potential sources of PFOS or PFOA. Based on information available at the time the proposed permit was drafted, it was identified that the industrial discharger category may be a potential source of PFOS/PFOA, and previous PFOS/PFOA sample results were within 1/5 of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code. Therefore, monthly monitoring is included. The initial determination of need sampling shall be conducted for up to two years in order to determine if the permitted discharge has the reasonable potential to cause or contribute to an exceedance of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code.

The monitoring frequency for PFOS and PFOA has been reduced from Monthly to 1/ 2 Months. Pursuant to s. NR 205.066, Wis. Adm. Code, the department may specify the monitoring frequency for PFOS and PFOA on a case-by-case basis after the initial 24 months of sampling.

After a review of the data submitted with the Year 2 Report on Effluent Discharges, the department has determined that it is warranted to reduce the sampling frequency in this case. The department is requiring continued monitoring of these compounds to complete the permit term to ensure that the current effluent quality is maintained. At the next permit reissuance, the department will make another determination as to whether further reduction or removal of monitoring is warranted, based on the continued sampling results.

Categorical Limits

S. NR 290 includes the categorical limit for total suspended solids, oil and grease, iron, and copper for Metal Cleaning Wastes.

The Effluent Limitation Guidelines (ELG) the Steam Electric Power Generating Point Source Category effective on January 4, 2016. The revised ELG requires Dairyland Power- Alma to meet the following requirements:

- "No Discharge" from Bottom Ash Transport Water. The facility has completed a facility upgrade and is no longer discharging bottom ash transport water.
- Combustion Residual Leachate (Coal Ash Landfill leachate) Oil and Grease, and Total Suspended Solids limits. The limits in the revised ELG are the same as what is already required at outfall 006 where the Coal Ash Landfill Leachate discharges to following treatment; neither the sample location nor the limits are changing.

The Coal Ash Landfill Leachate TSS and Oil and Grease ELGs are the same as their current limits for at outfall 006 for Metal Cleaning Wastes; therefore the Coal Ash Landfill Leachate Oil and Grease, and Total Suspended Solids limits will not change in this permit cycle, only where the facility reports them on the DMRs.

3 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- CONDENSER COOLING WATER - JPM

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
Temperature Maximum		deg F	Daily	Continuous	
pH Field	Daily Max	9.0 su	Weekly	Grab	
pH Field	Daily Min	6.0 su	Weekly	Grab	

Changes from Previous Permit

Temperature Difference is being removed in this sample point.

Explanation of Limits and Monitoring Requirements

Based on the comparison of effluent data to the calculated limits, the discharge from Outfall 001 would trigger weekly average temperature limits in June, July, and August. However, the thermal mixing zone study dated January 21, 2013 demonstrated that the plume from Outfall 001 occupies a small percentage of the river width and an adequate zone of free passage exists in accordance with s. NR 106.06(4)(c)3, Wis. Adm. Code.

The pH limitation of 6.0-9.0 is a water quality standard.

Categorical Limits

No Categorical Limits are applicable for this Outfall.

Sample Point Number: 002- COAL PILE RUNOFF - ALMA

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Estimated	
Suspended Solids, Total	Daily Max	50 mg/L	Daily	24-Hr Flow Prop Comp	Sample required during any day with a coal pile runoff discharge to the river.
pH Field	Daily Max	9.0 su	Daily	Grab	Sample required during any day with a coal pile runoff discharge to the river.
pH Field	Daily Min	6.0 su	Daily	Grab	Sample required during any day with a coal pile runoff discharge to the river.

Changes from Previous Permit

There are no changes from the previous permit.

Explanation of Limits and Monitoring Requirements

The limits based on best professional judgement and to prevent backsliding.

Sample Point Number: 003- INTAKE SCREEN BACKWASH - JPM; 004- FISH RETURN - JPM; 005- DE-ICING WATER - JPM

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Monthly	Estimated	

Changes from Previous Permit

There are no changes from the previous permit.

Explanation of Limits and Monitoring Requirements

The flow rate is being monitored to allow for adequate flow based calculations and evaluation of the intake structure.

Sample Point Number: 006- TREATED PROCESS WW

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
Temperature Maximum	Daily Max	Deg F	Daily	Grab	Monitoring only from the effective date of this permit through 06/30/2028. Limits become effective on 07/01/2028 per the compliance schedule. See temperature sections and table in the permit.
Temperature Maximum	Monthly Avg	Deg F	Monthly	Calculated	Monitoring only from the effective date of this permit through 06/30/2028. Limits become effective on 07/01/2028 per the compliance schedule. See temperature sections and table in the permit.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Chlorine, Total Residual	Daily Max	38 ug/L	Daily	Grab	
Chlorine, Total Residual	Monthly Avg	38 ug/L	Daily	Grab	
Phosphorus, Total	Monthly Avg	0.19 mg/L	Monthly	24-Hr Flow Prop Comp	
Phosphorus, Total	6-Month Avg	0.064 mg/L	Monthly	24-Hr Flow Prop Comp	
Phosphorus, Total	6-Month Avg	0.08 lbs/day	Monthly	Calculated	
pH (Minimum)	Daily Min	4.0 su	Daily	Continuous	See Section 3.2.4.6 of the permit.
pH (Maximum)	Daily Max	11 su	Daily	Continuous	See Section 3.2.4.6 of the permit.
pH Total Exceedance Time Minutes	Monthly Total	446 minutes	Monthly	Calculated	pH Total Exceedance Time Minutes
pH Exceedances Greater Than 60 Minutes	Daily Max	0 Number	Daily	Calculated	pH Exceedances Greater Than 60 Minutes

Changes from Previous Permit

Chlorine, Total Residual has been added to the permit.

Whole Effluent Toxicity(WET) monitoring has been removed due to a current lack of reasonable potential to violate WET limits.

The Temperature limits have been updated based on current discharge and stream characteristics.

TBELs and mercury monitoring have been moved from this outfall to outfall 106.

Explanation of Limits and Monitoring Requirements

Please see the attached Water Quality Based Effluent Limits Memo for full explanation of water quality limits.

Water Quality Based Limits

It was determined that the effluent from Outfall 006 enters a backwater section of the Mississippi River, limiting the amount of mixing available at the point of discharge. Recent changes to NR 102 and 217 include new phosphorus criteria related procedures for calculating water quality based effluent limitations for phosphorus. See the September 12, 2011 Water Quality-Based Effluent Limitations for Dairyland Power Cooperative, Alma 1-5 and J.P. Madgett (WI-0040223) memorandum, the March 30, 2012 Revision, and the September 15, 2015 Mercury Limitations for Dairyland Power Cooperative, Alma 1-5 and J.P. Madgett memorandum for further details.

Chlorine, Total Residual -

Chlorine daily maximum and monthly average limits have been added based on reasonable potential for the facility to violate water quality based effluent limits.

Temperature -

The Temperature limits have been recalculated based on updated flow and thermal effluent data and are shown in the table below. These limits apply when discharge from Outfall 006 is being discharged directly to the receiving waterbody and not being routed to outfall 001.

Month	Weekly maximum °F	Daily maximum °F
January	59	86
February	59	87
March	59	87
April	58	90
May	69	91
June	77	90
July	82	90
August	80	89
September	76	91
October	63	88
November	54	89
December	59	90

Phosphorus -

Because the discharge is to an impaired water, a mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code. The mass limit of 0.080 lbs/day in the current permit was calculated based on an effluent flow rate of 0.15 MGD ($0.064 \text{ mg/L} \times 8.34 \times 0.15 \text{ MGD} = 0.080 \text{ lbs/day}$). The effluent flow rate has increased slightly to 0.167 MGD, which would correspond to a higher phosphorus mass limit. However, to allow an increase in a limit above an existing limit the facility must demonstrate the need for the higher limits consistent with s. NR 207.04(1), Wis. Adm. Code and meet the anti-backsliding requirements in s. NR 207.12, Wis. Adm. Code. This would require one of the two conditions under s. NR 207.12(3)(a)2 to be met. Neither of these conditions are met and therefore **the current phosphorus mass limit of 0.080 lbs/day should be continued in the reissued permit.**

According to s. NR 217.14 (2), Wis. Adm. Code, because the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of **0.064 mg/L may be expressed as a six-month average**. This code specifies that the limit should be expressed as a six-month average and not an annual average. If a concentration limitation expressed as a six-month average is included in the permit, **a monthly average concentration limitation of 0.19 mg/L**, equal to three times the WQBEL calculated under s. NR 217.13, Wis. Adm. Code shall also be included in the permit. The six-month average should be averaged during the months of May – October and November – April.

Zebra mussel control-

The facility previously used chlorine to control zebra mussel. The facility has ceased use of chlorine for zebra mussel control and now manually controls zebra mussel and does not currently have plans to control zebra mussel by other means. If the facility determines that additional control is needed, the facility will need to get approval for the control, most likely by getting coverage under the Short Duration Discharge General Permit.

pH-

The permittee shall maintain the pH of the discharge within the range of 6.0 to 9.0 standard units (s.u.) except excursions are permitted subject to the following conditions:

- The pH is monitored continuously;
- The total time during which the pH is outside the range of 6.0 to 9.0 s.u. shall not exceed 446 minutes in any calendar month;
- No individual pH excursion outside the range of 6.0 to 9.0 s.u. shall exceed 60 minutes in duration;
- No individual pH excursion shall be outside the range of 4.0 to 11.0 s.u.; and
- On a daily basis, the permittee shall report the minimum and maximum pH, the total time that the pH is outside the range of 6.0 to 9.0 s.u.

Sample Point Number: 007- COAL PILE RUNOFF - JPM

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Estimated	
Suspended Solids, Total	Daily Max	50 mg/L	Daily	24-Hr Comp	
pH Field	Daily Max	9.0 su	Weekly	Grab	
pH Field	Daily Min	6.0 su	Weekly	Grab	

Changes from Previous Permit

There are no changes from the previous permit.

Explanation of Limits and Monitoring Requirements

The limits based on best professional judgement and to prevent backsliding.

The 50 mg/L daily maximum limit for TSS is an effluent limit guideline from 40 CFR 423.12(b)(9).

4 Land Treatment – Proposed Monitoring and Limitations

Sample Point Number: 008- COAL PILE RUNOFF BSN - ALMA and 009- COAL PILE RUNOFF BSN - JPM

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Monthly	Estimated	

Changes from Previous Permit:

None.

5 Schedules

5.1 Mercury Pollutant Minimization Program

As a condition of the variance to the water quality based effluent limitation(s) for mercury granted in accordance with s. NR 106.145(6), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
Annual Mercury Progress Reports: Submit an annual mercury progress report related to the pollutant minimization activities for the previous year. The annual mercury progress report shall: Indicate which mercury pollutant minimization activities or activities outlined in the Pollutant Minimization Program Plan have been implemented and state which, if any, activities from the Pollutant Minimization Program Plan were not pursued and why; Include an assessment of whether each implemented pollutant minimization activity appears to be effective or ineffective at reducing pollutant discharge concentrations and identify actions planned for the upcoming year; Identification of barriers that have limited program effectiveness and adjustments to the program that will be implemented during the next year to help address these barriers; Include an analysis of trends in total effluent mercury concentrations based on mercury sampling; and Include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury. The first annual mercury progress report is to be submitted by the Due Date.	01/31/2026
Annual Mercury Progress Report #2: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.	01/31/2027
Annual Mercury Progress Report #3: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.	01/31/2028
Annual Mercury Progress Report #4: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.	01/31/2029
Final Mercury Report: Submit a final report documenting the success in reducing mercury concentrations in the effluent, as well as the anticipated future reduction in mercury sources and mercury effluent concentrations. The report shall: Summarize mercury pollutant minimization activities that have been implemented during the current permit term and state which, if any, activities from the Pollutant Minimization Program Plan were not pursued and why; Include an assessment of which pollutant minimization activities appear to have been effective or ineffective. Evaluate any needed changes to the pollutant reduction strategy accordingly; Identification of barriers that have limited program effectiveness and adjustments to the program that will be implemented during the next variance term (if applicable) to help address these barriers; Include an analysis of trends in mercury concentrations based on sampling and data during the current permit term; and	03/31/2029

Include an analysis of how influent and effluent mercury varies with time and with significant loadings of mercury. If the permittee intends to reapply for a mercury variance per s. NR 106.145, Wis. Adm. Code, for the reissued permit, a detailed Pollutant Minimization Program Plan outlining the pollutant minimization activities proposed for the upcoming permit term shall be submitted along with the final report. An updated pollutant minimization plan shall: Include an explanation of why or how each pollutant minimization activity will result in reduced discharge of the target pollutant; Evaluate any new available information on pollutant sources, timing, and concentration to update the mass balance assumptions and expected sources of the pollutant, and Identify any information needs that would help to better determine pollutant sources and make plans to collect that information.	
Annual Mercury Reports After Permit Expiration: In the event that this permit is not reissued by the date the permit expires, the permittee shall continue to submit annual mercury reports for the previous year following the due date of Annual Mercury Progress Reports listed above. Annual Mercury Progress reports shall include the information as defined above.	

5.2 PFOS/PFOA Minimization Plan Determination of Need

Submit sampling data to be used to determine the need for PFOS and PFOA monitoring and limits.

Required Action	Due Date
Report on Effluent Discharge: Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.	03/31/2026
Report on Effluent Discharge and Evaluation of Need: Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results. The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan. If the Department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for Department approval no later than 90 days after written notification was sent from the Department. The Department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued. If, however, the Department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further	03/31/2027

action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.	
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5.3 Cooling Water Intake Structure (CWIS) Annual Certification Statement

Submit an annual certification statement as required by the influent 'Annual Certification Statement and Report' section of the permit.

Required Action	Due Date
Annual Certification Statement: Submit an Annual Certification on the water intake structure, as required by section 1.3.3.1.	01/31/2026
Annual Certification Statement: Submit an Annual Certification on the water intake structure, as required by section 1.3.3.1.	01/31/2027
Application Materials Exemption Request: Submit a statement by the due date on whether or not the permittee wishes to request a 316(b) application materials exemption. If no exemption is being requested, all applicable requirements in s. NR 111.40(2)(c), Wis. Adm. Code shall be submitted with the application for reissuance of this permit.	09/30/2027
Annual Certification Statement: Submit an Annual Certification on the water intake structure, as required by section 1.3.3.1.	01/31/2028
Annual Certification Statement: Submit an Annual Certification on the water intake structure, as required by section 1.3.3.1.	01/31/2029
Annual Certification Statement: Submit the application materials required in NR 111.40(2)(c), Wis. Adm. Code with the application for reissuance of this permit.	07/01/2029

5.4 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.	07/01/2025
Action Plan: Submit an action plan for complying with all effluent temperature limits that remain following the Department's review for necessity.	07/01/2026
Construction Plans: Submit construction plans (if construction is required for complying with effluent temperature limits) and include plans and specifications with the submittal.	07/01/2027
Initiate Actions: Initiate actions identified in the plan.	01/01/2028
Complete Actions: Complete actions necessary to achieve compliance with effluent temperature limits.	07/01/2028

Explanation of Compliance Schedules

Cooling Water Intake Structure Annual Certification Statement: The facility shall submit an annual certification statement as required by Section 1.3.3.1.

Mercury Pollutant Minimization Program: As a condition of the variance to the water quality based effluent limitation(s) for mercury granted in accordance with s. NR 106.145(6), Wis. Adm. Code.

PFOS/PFOA Determination of Need: The facility shall submit information in accordance with this schedule to allow for future calculations of determinations of need for PFOS and PFOA monitoring and limits.

Temperature limits: the facility is required to determine options to address temperature limits at outfall 006 and either perform operational changes or install treatment to come into compliance with temperature limits.

Special Reporting Requirements

Not applicable.

Other Comments:

None.

Attachments:

PFOS and PFOA Water Quality-Based Effluent Limitations for Dairyland Power Cooperative Alma - WPDES Permit No. (WI-0040223) in Buffalo County, by Amy Garbe, PE, Wastewater Engineer, dated August 28, 2026

Proposed Expiration Date:

December 31 2029

Justification Of Any Waivers From Permit Application Requirements

Not Applicable.

Prepared By:

Jonathan Hill Wastewater Engineer

Date: September 16, 2024

Revised By: Sarah Donoughe, Wastewater Specialist-Adv

Date: September 15, 2026

DATE: August 28, 2026

TO: Sarah Donoughe – NER

FROM: Kari Fleming – WY/3

SUBJECT: PFOS and PFOA Water Quality-Based Effluent Limitations for Dairyland Power Cooperative Alma -WPDES Permit No. (WI-0040223) in Buffalo County

This is in response to your request for an evaluation of the need for PFOS and PFOA limitations for the Dairyland Power Cooperative Alma in Buffalo County. This primary industrial facility discharges to the Mississippi River, located in the Mississippi River Basin.

The current permit, effective since January 2025, has monitoring only for PFOS and PFOA. The following review is based on new regulations which are now in effect throughout the state of Wisconsin and recommendations are made in accordance with chapters NR 102, 104, 105, 106, 207, and 217 of the Wisconsin Administrative Code, where applicable.

Receiving Water Information

- Name: Mississippi River. Outfall 001 is located on the main channel and Outfall 006 is located on a backwater of the Mississippi River
- Classification: Warm Water Sport Fish (WWSF) community, non-public water supply.
- Flow:
 - Outfall 006: A ten-to-one dilution ratio will be used for calculating effluent limitations based on chronic or long-term impacts, in accordance with s. NR 106.06(4)(b)2, Wis. Adm. Code, because the receiving water does not exhibit a unidirectional flow at the point of discharge.

Effluent Information

- Flow (Outfall 006):
 - Maximum 365-Day Average: 0.167 MGD
 - Peak Daily: 0.998 MGD
 - Peak 7-Day Average: 0.619 MGD
 - Peak 30-Day Average: 0.332 MGD

For reference, the actual average flow from January 2025 to June 2026 for Outfall 006 was 0.073 MGD.

- Effluent characterization: This facility is categorized as a primary industry.

The following table lists the statistics for effluent (sampling point 106) PFOS and PFOA levels from March 2021 and January 2025 through June 2026.

	PFOS ng/L	PFOA ng/L
Mean*	0.23	0.41
Std	0.33	0.51
Sample Size	18	18
Range	<0.38-1.2	<0.35-2.09

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

Water Quality Based Limit – PFOS and PFOA

Administrative rules for PFOS and PFOA took effect on August 1, 2022. These rule revisions include additions to ch. NR 102 (s. NR 102.05), Wis. Adm. Code, which establish PFOS and PFOA standards for surface waters. Revisions to ch. NR 106 (s. NR 106, Subchapter VIII), Wis. Adm. Code, establish procedures for determining water quality based effluent limits for PFOS and PFOA, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

PFOS

Due to PFOS being a bioaccumulating compound of concern (BCC), no mixing zone is allowed pursuant to s. NR 106.98(4), Wis. Adm. Code. Therefore, the effluent limit for PFOS is set equal to criterion (8 ng/L).

PFOA

The conservation of mass equation is described in s. NR 106.06(4)(b)2., Wis. Adm. Code, and includes variables of water quality criterion (WQC) and upstream PFOA concentrations (Cs) provided below.

$$\text{Limitation} = 11(\text{WQC}) - 10(\text{Cs})$$

Where:

WQC = 95 ng/L for the Mississippi River

Cs = background concentration of PFOA in the receiving water pursuant to s. NR 106.06(4)(e), Wis. Adm. Code

After substituting the appropriate variables, the calculated PFOA limit is 1,045 ng/L.

Reasonable Potential Determination

In accordance with s. NR 106.98(4)(b), Wis. Adm. Code, **the discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS** because the arithmetic average of reported effluent PFOS data is less than 1/5th the calculated WQBEL (8 ng/L). Therefore, **a WQBEL is not required.**

The discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOA because the arithmetic average of reported effluent PFOS data is less than 1/5th the calculated WQBEL (1,045 ng/L). Therefore, **a WQBEL is not required.**

Conclusions

The discharge has no reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS nor PFOA. Therefore, no WQBELs are required.

Pursuant to s. NR 205.066, Wis. Adm. Code, the department may specify the monitoring frequency for PFOS and PFOA on a case-by-case basis after the initial 24 months (or 12 samples) of sampling. **After a review of the available data, the department has determined that it is warranted to reduce the sampling frequency at Outfall 106 in this case to every other month.**

If there are any questions or comments on these recommendations, please contact Amy Garbe by telephone at (608) 716-9968 or by email at Amy.Garbe@wisconsin.gov.

Attachments (1) – PFOS and PFOA Data

PREPARED BY:



Amy Garbe, P.E., Wastewater Engineer

date: 8/28/26

cc: Michael Chang, Compliance Staff – WCR/Eau Claire
Nate Willis, P.E., PFAS Implementation Coordinator – CO

Attachment 1 – PFOS and PFOA Data

In Plant Sample Point 106		
	PFOS Data	PFOA Data
	[ng/L]	
Mar-21	0.726	2.09
Jan-25	0.34	<0.35
Feb-25	<0.4	<0.49
Mar-25	<0.38	<0.47
Apr-25	0.41	0.53
May-25	<0.38	<0.48
Jun-25	<0.39	0.6
Jul-25	<0.36	0.5
Aug-25	<1.4	<1.7
Sep-25	<0.39	<0.48
Oct-25	<0.52	0.56
Nov-25	0.55	0.59
Dec-25	<0.53	<0.46
Jan-26	<0.53	<0.46
Feb-26	<0.54	<0.47
Apr-26	0.92	0.94
May-26	1.2	1
Jun-26	<0.54	0.55