

Permit Modification Fact Sheet

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

General Information

Permit Number:	WI-0000540-10-1
Permittee Name:	Kimberly Clark Corporation
Address:	3120 Riverside Ave
City/State/Zip:	Marinette WI 54143
Discharge Location:	Outfalls 001: South bank of the Menominee River, one quarter mile up stream of the Hattie Street Bridge Outfall 004: discharged into turbine generator intakes on south side of the Menominee River, one quarter mile upstream of the Hattie Street Bridge.
Receiving Water:	Menominee River (WBIC = 609000)
Stream Flow (Q _{7,10}):	1240 cfs
Stream Classification:	Warmwater sportfish community, not classified as a public water supply NOTES: 1) For bioaccumulative chemicals of concern (BCCs), criteria are based on a classification as a coldwater community and public water supply since this permittee is located in the Great Lakes basin. 2) The Menominee River at Marinette is currently classified as an Impaired Water for PFOS, mercury and PCBs. Of those, only mercury and PFOS is currently detected in Marinette's effluent.

Facility Description

Kimberly-Clark Corporation at Marinette operates a non-integrated paper mill and converting operations producing sanitary tissue paper products. Employing a single paper machine, #5 Tissue Machine, the Marinette Mill produces 193 air dry standard tons per day of sanitary tissue products from purchased pulp. Paper rolls are converted to consumer products on various converting units. Paper machine maximum production rates over the course of current permit: Daily max = 225.6 tons per day; Monthly max = 190.8 average tons per day; Yearly max = 171.7 average tons per day. The current permit rate of 193 tons per day continues to represent the paper making process maximum production capability.

Discharge Description

The Marinette Mill treats its process wastewaters in addition to groundwater seepage, stormwater, boiler blowdown and leachate from Kimberly-Clark's Oconto Falls Landfill using flocculation and sedimentation in a primary clarifier **aided by polymers** followed by polishing in an earthen lagoon. Sludge dewatering is aided by polymers using a belt press.

Substantial Compliance Determination

Enforcement During Last Permit: The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all discharge monitoring reports, CMARs, land app reports, compliance schedule items, and a site visit on September 19, 2023, this facility has been found to be in substantial compliance with their current permit. The treatment plant was found in compliance with the effluent limits and all terms and conditions of the permit. The following actions are needed:

- The facility will need an Operator with advanced certification and the following subclasses: Solids Separation (B) and Biological Solids/Sludge Handling, Processing & Reuse (C) by September 5, 2026.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)
702	N/A	Intake number 702 represents the surface water intake located at the Park Mill Powerhouse.
001	Two emergency overflows have occurred since the current permit issuance. These overflows happened on 5/24/2019 and 3/6/2020. The Maximum daily and maximum annual average occurred on 5/24/2019.	Contributing water sources include continuous discharge of uncontaminated groundwater seepage, stormwater and infrequent Filtered River Water Tank emergency overflow. Mill steam condensate and noncontact cooling water are recycled back to the Filtered River Water Tank. At Sampling Point 001, overflow from the Filtered River Water Tank shall be monitored prior to combining with groundwater seepage and stormwater and prior to discharge via Outfall 001 to the Menominee River one quarter mile upstream of the Hattie Street Bridge.
004	Maximum Daily of 2.860 MGD on 07/01/2018; Maximum annual average of 1.117 MGD in 2021.	Combined process wastewaters are treated and sampled prior to discharge. Discharge sources include papermaking and converting operations wastewater, Kimberly-Clark Oconto Falls Landfill leachate, steam plant and utilities operations water, groundwater and any other auxiliary mill process water and stormwater. At Sampling Point 004, wastewater treatment system lagoon effluent shall be monitored, after combining with clarifier effluent if bypassing of the lagoon occurs, but prior to discharge to the Menominee River one quarter mile upstream of the Hattie Street Bridge.
106	N/A	DMR Sample Point for Reporting Mercury Field Blank Results

1 Influent – Cooling Water Intake Structure - Proposed Monitoring

Sample Point Number: 702- Intake 702

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		Percent	Monthly	Calculated	

Changes from Previous Permit

None.

Explanation of Limits and Monitoring Requirements

Flow and percent used exclusively for cooling are needed to determine applicable regulations for the intake structure.

Water Intake Structure: The Influent section includes the water intake structure description, authorization for use, and BTA (Best Technology Available) determination. The permittee is authorized to use the water intake structure which consists of the following:

Point of Compliance: The National Wildlife Federation vs. Gorsuch decision states that water passing through a dam does not constitute a discharge in the NPDES system. Therefore, it remains waters of the state as it passes through the dam. As a result, the point of withdrawal and point at which the through-screen velocity is calculated is inside the dam's turbine pits. At this facility, this is at the deep well pump and shallow well pump.

Location: The Marinette Mill obtains Menominee River water from the hydroelectric powerhouse located at Latitude 45°06'21.6", Longitude 87°39'05.7" (on the WKID: 4326 DMS datum) along the south bank of the Menominee River, upstream of the Hattie street bridge.

Maximum Through-Screen Design Intake Velocity: The through-Screen Design Intake Velocity at the fish guidance rack owned and operated by the dam is 1.8 feet per second (fps), and the sweeping velocity along the rack is 1.27 fps. However, the point at which the design intake velocity is calculated for purposes of evaluating the mill's intake (not including withdrawals by the dam for hydropower) is at the point at which water is withdrawn from waters of the state. At this mill, this is at deep well pump and shallow well pump, and the calculated maximum intake velocities are 8.2 fps and 1.8 fps respectively.

Source Waterbody Information:

- 7-Q₁₀ = 1240 cfs (cubic feet per second)
- 7-Q₂ = 1740 cfs
- 90-Q₁₀ = 1590 cfs
- Harmonic Mean Flow = 2650 cfs

General Description: General Description: two pumps are installed in the turbine room. The shallow well pump and the deep well pump are controlled with variable speed drives and only one pump can be operated at a time. The maximum design capacity of the larger, deep well pump is 11.5 MGD (17.793 cubic feet/second), significantly higher than the reported water usage of approximately 0.9 MGD. The maximum design capacity of the smaller, shallow well pump is 2.6 MGD (4.023 cubic feet / second). While both pumps can run at the same time, it is noted that the facility rarely does this.

Major Components: The shallow pump intake opening has a 14-inch diameter, 8-inch tall basket strainer that leads into a 10 and 3/4 inch diameter vertical suction pipe. The deep well intake has a 20-inch diameter opening that feeds into a 16 inch suction pipe. The deep pump does not have a screen or filter. Both pumps withdraw water from within the turbine room. The facility' intake does feature a fish guidance rack installed at a 45 degree angle that is owned and operated by Eagle Creek Renewable Energy and includes a rack cleaning system to provide mechanical assist to the manual cleaning process.

The height of the fish return rack is approximately 21 ft., and a width/length of 82 1/2 ft. The "Turbine Room" or flume is approximately 104 ft. long and 85 ft wide. The usual depth of the water is 18 ft deep to the bottom subfloor. Lastly, there is no way to hold back water at the discharge areas for the turbines. The openings at the discharge wall are smaller than the entire opening of the turbine room, according to the drawings, there are 8 discharge bays along the flume wall and they are approximately 8 ft. wide by 7 ft. tall.

- **Design and actual velocity and flow through the fish guidance rack:** The maximum approach velocity perpendicular to the rack is 1.8 feet per second (fps), and the sweeping velocity along the rack is 1.27 fps. A new rack cleaning system was also installed providing some mechanical assist to the manual cleaning process. There are no calculations to provide; the approach velocities were taken from 2013 fish guidance rack project documents.

- **Maximum Design Intake Flow (DIF):** 14.1 MGD
- **Actual Average Intake Flow:** The actual intake flow (DIF) is 0.9 MGD (1.393 cfs)
- **Actual Intake Velocity:** The maximum intake velocity is 0.01 fps through the shallow well pump and 0.09 fps through the deep well pump. The actual intake velocity is on average 0.004 fps through the shallow well pump at 0.9 MGD.
- **Percent Used Exclusively for Cooling:** 4.1 percent used exclusively for cooling.

Percent of intake water used compared to river flow is less than 5% of the mean annual flow: The estimated harmonic mean flow of the Menominee River's is 2,650 cfs with a 7Q10 flow of 1240 cfs. The design intake flow from the larger pump 11.5 MGD = 17.793 cfs, which is equivalent to approximately **0.83%** of the harmonic mean flow and approximately **1.7%** of the 7Q10.

Monitoring for flow rate and intake water used exclusively for cooling: Monitoring flow rate and percent used exclusively for cooling is required to determine applicability with section 316(b) of the Clean Water Act. The average intake over flow (river return) volume is 0.7 MGD. Intake water is used for noncontact cooling water and then reused as process water.

With the average pump rate of 1 MGD and 4.1% of the intake water being used exclusively for cooling purposes, the permittee must meet the requirements of 316(b) of the Clean Water Act on a case by case, best professional basis. If the design intake flow is greater than 2 MGD and if 25% or more of the intake water, based on actual intake flow, is used exclusively for cooling, BTA determinations for entrainment mortality and impingement mortality will be made in accordance with 40 CFR §125.90-98 and the permittee will be required to submit all the required information in 40 CFR §122.21(r). Existing facilities with intake flows less than 2 MGD or less than 25% intake water used exclusively for cooling only need to submit information specified in 40 CFR 122.21(r)(2), (3), (5), and (8) with their permit reissuance application.

Once per year, the permittee shall calculate an average daily intake flow rate in MGD (using the flow meter data) and report it electronically on the discharge monitoring form. The permittee shall also calculate and report the percent of intake water used exclusively for cooling. If all cooling water is reused as process water, report the percent intake water used exclusively for cooling as 0%. The sampling frequency is annually because the facility's pump does not have the ability to exceed 2 MGD and they use 0% of intake water exclusively for cooling.

BTA determination:

The intake structure is subject to 316(b) of the Clean Water Act and 283.31 (6) Wis. State Statute. The intake structure is not subject to 40 CFR 125 subpart J because less than 25% of the withdrawn water is used exclusively for cooling.

Pursuant to s. 283.31(6), Wis. Stats., Any WPDES discharge permit that limits the discharge of one or more pollutants may require that the location, design, construction, and capacity of the permittee facility's surface water intake structure reflect best technology available (BTA) for minimizing adverse environmental impacts. Section 316(b) of the Clean Water Act (33 U.S.C. 1326(b)) is similar but emphasizes cooling water intakes.

Since Kimberly-Clark holds a WPDES permit that limits the discharge of several pollutants and withdraws water from the Menominee River, a BTA determination is required.

The facility meets the bolded criteria below and is therefore meeting BTA. The Department therefore does believe that the facility's intake structure represents BTA for minimizing adverse environmental impact in accordance with the requirements in section 283.31 (6), Wis. Stats. and section 316 (b) of the Clean Water Act.

Best professional judgment BTA determinations are made using the Department's 2020 *Guidance for Evaluating Intake Structures Using Best Professional Judgment*. For existing intake structures, the guidance advises that intakes deemed BTA should fulfill at least one of the following eight criteria:

1. **Each water intake structure has a maximum design intake velocity of *less than 0.5 feet per second (fps)* OR a maximum actual intake velocity of 0.5 fps, demonstrated via measured or calculated values which show the maximum intake velocity as water passes through the intake system, measured perpendicular to the opening, does not exceed 0.5 fps at any point up until the first screen of mesh size 3/8" (or equivalent) or less. (the facility does meet this criteria.)**
2. The facility operates a closed-cycle recirculating system that only requires make-up water with > 3 cycles of concentration on at least a daily basis. Cycles of concentration can be measured as the ratio of chloride levels in the recirculated water or blowdown relative to the chloride levels in the source water, or makeup water; or the make-up water volume divided by the blowdown volume (provided there aren't other water losses); or the blowdown water conductivity divided by the make-up water conductivity. (The facility does not meet this criterion; it does not operate a closed-cycle recirculating system)
3. The facility operates an intake structure that minimizes impingement rates by nature of its location (e.g. offshore velocity cap). (The facility does not meet this criterion; it does not operate an intake structure that minimizes impingement rates by nature of its location)
4. **The facility employs a system of technologies (e.g. wedge-wire screens, barrier nets; acoustic, light, or pH deterrent systems; variable speed pumps, etc.) that minimize impingement mortality rates. (The facility does meet this criteria through use of the variable speed pumps and two different pump sizes; the water intake structure does provide aquatic life protection by means of the fish guidance rack and bypass system recently installed in the power canal.)**
5. The facility operates a modified traveling screen in an optimal manner that does not promote re-impingement or predation of returned organisms. (The facility does not meet this criteria; The facility does not operate a modified traveling screen)
6. The facility's intake withdraws water at > 0.25 fps less than or equal to 16% of the time up until the first screen of mesh size 3/8" (or equivalent) or less. (The facility does not meet this criteria.)
7. There is data indicating that the impingement mortality rate has been/will be reduced 80-95% compared to a once-through cooling system with 3/8" traveling screens; (The facility does not meet this criterion; There is not data that indicates this)
8. There is biological data that affirmatively demonstrates that: 1) the source water body does not include threatened or endangered species in the vicinity of the intake, and 2) there are no aquatic life and water quality problems partly or solely due to the presence or operation of the intake structure. (The facility does not meet this criteria because lake sturgeon are found within the waterbody; their proximity to the intake is highly variable and would depend on the time of year and discharge.)

And at least one of the following five criteria:

- **The total water withdrawn (actual intake flow) is $\leq 5\%$ of the mean annual flow of the river on which the intake is located (if on a river or stream) OR the total quantity of the water withdrawn is restricted to a level necessary to maintain the natural thermal stratification or turnover patterns (where present) except in cases where the disruption is beneficial (if on a lake or reservoir) (the facility meets this criteria because the 1% of the harmonic mean flow and approximately 2% of the 7Q10.)**
- The facility operates at < 8% capacity utilization rate (with pumps turned off or, if variable frequency drives exist, down substantially during periods of non-operation) or at full capacity only for portions of days during a few months or less on an annual basis. If located in a spawning area, the period of water intake operation should not correspond with times when spawning, peak egg/larval abundance, or larval recruitment is occurring (depending on species present, usually between April – October). (The facility does not operate at < 8% capacity utilization rate or at full capacity only for portions of days during a few months or less on an annual basis).
- The facility operates a closed-cycle recirculating system that only requires make-up water with ≥ 3 cycles of concentration on at least a daily basis. Cycles of concentration can be measured as the ratio of chloride levels in the recirculated water or blowdown relative to the chloride levels in the source water, or makeup water; or the make-up water volume divided by the blowdown volume (provided there aren't other water losses); or the blowdown water conductivity divided by the make-up water conductivity. (The facility does not operate a closed-cycle recirculating system).

- The facility utilizes other means such as variable speed pumps, unit retirements, etc. to decrease entrainment rates by greater than or equal to 60% compared to a once-through cooling system with 3/8" traveling screens. Flow rate may be used as a surrogate for entrainment rates when determining percent reduction. (The facility does not meet this criteria. The facility minimizes water usage by varying pump rates, although the department does not have information showing that this would not reduce the entrainment rates by greater than 60%.)
- There is biological data that affirmatively demonstrates that: 1) the source water body does not include threatened or endangered species in the vicinity of the intake, 2) there are no aquatic life and water quality problems partly or solely due to the presence or operation of the intake structure, and 3) the department biologist concurs that operation of the intake during periods of spawning, peak egg/larval abundance, and larval recruitment will not substantially impact populations or prey bases for the fishery. (The facility does not meet this criteria because lake sturgeon are found within the waterbody; their proximity to the intake is highly variable and would depend on the time of year and discharge. There are no known aquatic life or water quality problems partly or solely due to the presence or operation of the intake structure)

And the following criteria:

- **The facility-wide design intake flow (DIF) for all water intake structures is ≤ 2 MGD (all intake water, cooling and non-cooling, is included in the determination of whether this DIF threshold is met) OR $< 25\%$ of the total water withdrawn is used exclusively for cooling purposes (water from a public water system, treated effluents, process water, gray water, wastewater, reclaimed water, or water used in a manufacturing process before or after it is used for cooling is not considered cooling water for the purposes of this determination) (The facility's DIF is 11.5 MGD, which is greater than the 2 MGD threshold. However, the mill uses 4.1% of the water withdrawn exclusively for cooling purposes, which is below the 25% cooling water threshold.)**

Intake Screen Discharges and Removed Substances

Floating debris and accumulated trash collected on any 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.

Endangered Species Act

This permit does not authorize take of threatened or endangered species. 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.

Additional information: The dam's fish guidance rack reduces the amount of fish entering the turbine room which reduces the amount of fish available to be impinged or entrained by the mill's intake structure.

No impingement and entrainment studies of the Marinette Mill's fresh water intake pumps have been performed. However, fish entrainment and mortality studies of the hydro-electric plant were performed in 1987 and 1990 through 1991. The results of the studies as conducted by the mill's consultant, the Wisconsin DNR, and the Federal Energy Regulatory Agency ranged from 48,735 to 80,613 fish entrained per year and 11,846 to 30,561 fish killed per year (24.3-25.5% of fish entrained are killed by the turbines owned and operated by the dam.) The mill withdraws 1% of the mean harmonic flow of the river, meaning their portion of the withdrawal is responsible for approximately that fraction of the mortality.

2 In-plant - Proposed Monitoring and Limitations

Sample Point Number: 106- Field Blank Results

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Quarterly	Blank	
PFOS		ng/L	Monthly	Blank	
PFOA		ng/L	Monthly	Blank	

Changes from Previous Permit

The outfall name has been updated from “Mercury Field Blank Results” to “Field Blank Results”.

PFOS and PFOA blanks have been added to the permit. PFOS and PFOA field blank requirements have been removed due to the sample type used in PFOS/PFOA effluent monitoring; field blanks are not required for grab sampling.

Explanation of Limits and Monitoring Requirements

Field blank samples for mercury PFOA, and PFOS are needed to determine accuracy of samples taken at other sample points.

3 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- Filtered Water Tank

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

Changes from Previous Permit

None.

Explanation of Limits and Monitoring Requirements

It is necessary to provide a location on the DMRs for the facility to report flow in the case of a discharge from this outfall.

Sample Point Number: 003- 004 and 005 Combined

Changes from Previous Permit

This outfall has been removed.

Explanation of Limits and Monitoring Requirements

Since Outfall 005 is being removed it is no longer necessary to have the virtual combined outfall 003.

Sample Point Number: 004- Treated Process WW

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	5/Week	24-Hr Comp	
BOD5, Total	Daily Max	4,400 lbs/day	5/Week	Calculated	
BOD5, Total	Monthly Avg	2,413 lbs/day	5/Week	Calculated	
Suspended Solids, Total		mg/L	5/Week	24-Hr Comp	
Suspended Solids, Total	Daily Max	3,957 lbs/day	5/Week	Calculated	
Suspended Solids, Total	Monthly Avg	1,930 lbs/day	5/Week	Calculated	
Temperature Maximum		deg F	Daily	Continuous	
Mercury, Total Recoverable		ng/L	Quarterly	Grab	
pH (Maximum)	Daily Max	9.0 su	Daily	Continuous	
pH (Minimum)	Daily Min	5.0 su	Daily	Continuous	
pH Exceedances Greater Than 60 Minutes	Monthly Total	0 Number	Daily	Calculated	
pH Total Exceedance Time Minutes	Monthly Avg	446 minutes	Daily	Calculated	
Phosphorus, Total		mg/L	Quarterly	24-Hr Comp	
PFOS		ng/L	Quarterly	Grab	
PFOA		ng/L	Quarterly	Grab	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Acute WET		rTUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	

Changes from Previous Permit

PFOS and PFOA, and Temperature monitoring has been added to the permit as per the WQBEL memo dated May 15, 2023. The monitoring frequency for PFOS and PFOA has been reduced from Monthly to Quarterly.

BOD5 and TSS concentration reporting has been added to this permit.

Sample frequency for BOD5 and TSS has been changed from “at discharge” to “5/week”; the facility should report “no discharge” if no discharge occurred.

Categorical limits for BOD and TSS has been added to this outfall and removed from Outfall 003.

The pH exceedances total minutes and greater than 60 minutes has been added to this permit.

Explanation of Limits and Monitoring Requirements

Water Quality Based Limits and WET Requirements and Disinfection (if applicable)

Mercury- Mercury limits are not included at outfall 004 based on the Water Quality Based Effluent Memo. Mercury monitoring is remaining in the permit to allow for another reasonable potential analysis to be conducted at the next permit reissuance.

pH- The pH limits are required in accordance with s. NR 106.98(2), Wis. Adm. Code.

PFOS and PFOA- The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Previous monitoring produced a PFOS result of <0.113 ng/L and a PFOA result of 0.236 ng/L. Based on the discharge category PFOS and PFOA monitoring is recommended at a monthly frequency.

The department may add PFAS monitoring requirements to the permit for waste being hauled to licensed (Waste & Materials or out of state) landfill owned by a different entity. Adding monitoring requirements is current policy of the department.

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 period of sampling.

After a review of the data submitted with the Year 1 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.

Phosphorus- The discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion because the 30-day P99 of reported effluent total phosphorus data is less than the calculated WQBEL. Therefore, a WQBEL is not required, however monitoring is being included to allow for a reasonable potential analysis to be conducted at the next permit reissuance.

Temperature- No limits are necessary based on the procedures in s. NR 106.56, Wis. Adm. Code. Monitoring will be included in this permit term to allow for a reasonable potential analysis to be conducted at the next permit reissuance.

Whole Effluent Toxicity (WET)- The need for WET limits were made according to ss. NR 106.08 and 106.09, Wis.

Adm. Code. and the WET checklist.

Categorical Limits

The Total BOD5 and Total Suspended Solids limits are carried over from the previous permit. The permit application stated that the current permit rate of 193 tons per day continues to represent the paper making process maximum production capability.

BPT Effluent Limitations

Production Rates: Kimberly-Clark's reissuance applications indicate a peak annual average production rate of 193 ADST/day. Therefore, the proposed permit's TBELs are derived from 193 ADST/day.

BPT Effluent Limitations Calculation:

Applicable Limits from s. NR 284.12 (1), Wis. Adm. Code

Subcategory	Effluent Limitations
Nonintegrated-Tissue Papers s. NR 284.12 (1)(a)18.	22.8 lbs BOD ₅ /ton of production Daily Maximum
	12.5 lbs BOD ₅ /ton of production Monthly Average
	20.5 lbs TSS/ton of production Daily Maximum
	10.0 lbs TSS/ton of production Monthly Average

BOD₅:

193 TPD x 22.8 lbs BOD₅/T = 4,400 lbs BOD5 Daily Maximum

193 TPD x 12.5 lbs BOD₅/T = 2,413 lbs BOD5 Monthly Average

TSS:

193 TPD x 20.5 lbs BOD₅/T = 3,957 lbs TSS Daily Maximum

193 TPD x 10.0 lbs BOD₅/T = 1,930 lbs TSS Monthly Average

Sample Point Number: 005- Mill Emergency Overflow

Changes from Previous Permit

This outfall has been removed because the department does not permit emergency overflows. If an overflow occurs the facility is required to report it as described in the emergency discharge section of the permit.

Explanation of Limits and Monitoring Requirements

Consistent with other permits, emergency discharges are to not have their own outfall. Emergency discharges shall be reported as required in the Controlled Diversion subsection of the Standard Requirements section of the permit.

4 Off-site disposal - Sludge

4.1 Sampling Point (Outfall) 006 - Offsite Sludge Disposal

The permittee is required to electronically submit the Other Methods of Disposal or Distribution Report Form 3400-52 by January 31, each year whether or not waste is hauled to another facility, landfilled, or incinerated.

Changes from Previous Permit

This outfall is being added to the permit to record the wastewater treatment sludge sent off-site to a licensed landfill.

Explanation of Limits and Monitoring Requirements

This outfall is being added to require reporting of offsite disposal.

5 Schedules

5.1 Annual chlorophenolic-containing biocides Certification

The Permittee must submit a signed certification statement no later than January 31 for the previous year certifying that the facility did not use chlorophenolic-containing biocides.

Required Action	Due Date
Annual Intake Certification Statement: The Permittee must submit a signed certification statement no later than January 31 for the previous year certifying that the facility did not use chlorophenolic-containing biocides. See the Standard Requirements section of the permit for details on notification requirements if the permittee desires to use additional additives.	January 31 of each year.

Explanation for Annual chlorophenolic-containing biocides Certification: Wis Adm Code 284/12(2) requires facilities to have limits for PCP, TCP and zinc unless the facilities certify that they do not use chlorophenolic-containing biocides; this schedule gives the facility a place to certify the lack of chlorophenolic-containing biocides. If the permittee decides to start using chlorophenolic-containing biocides, the permittee will be required to request approval by the Department and will not be permittee to use chlorophenolic-containing biocides unless approved by the department. If the Department approves use chlorophenolic-containing biocides, the permit will be modified to include limits for PCP, TCP and zinc.

5.3 Sludge Management Plan

A management plan is required for the sludge management system.

Required Action	Due Date
Sludge Management Plan: Submit a management plan to optimize the land application performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	03/31/2027

Explanation for Sludge Management Plan: The department requires that the facility report the source of the sludge as well as treatment and disposal details to ensure the proper regulations are being met.

Special Reporting Requirements

None.

Other Comments:

Kimberly Clark submitted certification with the application that the Marinette Mill does not use chlorophenolic-containing biocides. Therefore, pursuant to s. NR284.12 (2) (b), the proposed permit does not contain technology-based limitations for either pentachlorophenol (PCP) or trichlorophenol (TCP).

The previous permit fact sheet did not include Schedule 5.2 PFOS/PFOA Minimization Plan Determination of Need even though this schedule was included in the final signed permit. Due to the reduction in PFOS/PFOA sampling frequency, and the information contained in the WQBEL memo stating that the discharge has no reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS nor PFOA, the Year 2 Report has been removed from the schedule in the modified permit. Since the Year 1 Report has already been received, and there are no remaining required schedule items, the schedule has not been included in the fact sheet at this time.

Attachments:

Water Quality-Based Effluent Limits

PFOS and PFOA Water Quality-Based Effluent Limitations for Kimberly Clark Corporation Marinette WPDES Permit No. (WI-0000540) in Marinette County, by Amy Garbe, PE, Wastewater Engineer, dated September 30, 2025

Proposed Expiration Date:

September 30, 2029

Justification Of Any Waivers From Permit Application Requirements

NA.

Prepared By:

Jonathan Hill Wastewater Engineer

Date: September 30, 2024

Revised By: Sarah Donoughe, Wastewater Specialist-Adv

Date: October 3, 2025

DATE: September 30, 2025

TO: Sarah Donoughe – NER

FROM: Kari Fleming – WY/3

SUBJECT: PFOS and PFOA Water Quality-Based Effluent Limitations for Kimberly Clark Corporation
Marinette WPDES Permit No. (WI-0000540) in Marinette County

This is in response to your request for an evaluation of the need for PFOS and PFOA limitations for Kimberly Clark Corporation Marinette. This industrial facility discharges to the Menominee River, located in the Wausaukee and Lower Menominee River Watershed in the Menominee River Basin.

The current permit, effective since October 2024, 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: Menominee River
- Classification: Warm water sport fish community, non-public water supply. Cold Water and Public Water Supply criteria are used for bioaccumulating compounds of concern, because the discharge is within the Great Lakes basin.
- Flow: The following 7-Q10 and 7-Q2 values are from the USGS Station for the Menominee River at Marinette where Outfalls 001, 004, and 005 are located. The Harmonic Mean has been estimated as recommended in State of Wisconsin Water Quality Rules Implementation Plan (Publ. WT-511-98)
 - 7-Q10 = 1240 cfs (cubic feet per second)
 - 7-Q2 = 1740 cfs
 - 90-Q10 = 1590 cfs (est. as 85% of 7-Q2)
 - Harmonic Mean Flow = 2650 cfs
- % of Flow used to calculate limits: a mixing zone of 100% was approved on July 23, 1990 based on discharge directly to the turbine intakes.

Effluent Information

- Flow rate(s): Outfall 004
 - Max annual average = 1.12 MGD (Million Gallons per Day)
 - Peak daily = 2.86 MGD
 - Peak weekly = 2.74 MGD
 - Peak monthly = 2.25 MGD
- For reference, the actual average flow from January 2024 through August 2025 was 1.06 MGD.
- Water source: 96% of wastewater discharged at outfall 001 is comprised of water from the Menominee River.
 - Effluent characterization: This facility is categorized as a primary industrial discharge

The following table lists the statistics for effluent PFOS and PFOA levels from April 2021 and October

2024 through August 2025.

	PFOS ng/L	PFOA ng/L
Mean*	0.69	0.020
Std	0.50	0.51
Sample Size	12	12
Range	<0.113-2.1	0.236 - <1.8

*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 s. NR 106.98(4), Wis. Adm. Code. Therefore, the effluent limit for PFOS is set equal to criteria (8 ng/L).

PFOA

The conservation of mass equation is described in s. NR 106.06(4)(b)1. Wis. Adm. Code, and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream PFOA concentrations (Cs) provided below.

$$\text{Limitation} = [(WQC)(Qs + (1-f) Qe) - (Qs - f Qe) (Cs)] / Qe$$

Where:

WQC = 95 ng/L for the Menomonie River

Qs = 100% of the harmonic mean pursuant s. NR 106.06(4)(c)10., Wis. Adm. Code = 2650 cfs

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

Qe = effluent flow rate = 1.12 MGD = 1.73 cfs

f = the fraction of effluent withdrawn from the receiving water = 0.96

After substituting the appropriate variables, the calculated PFOA limit is 145,000 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 average of reported effluent PFOS data is less than 1/5th of 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 average of reported effluent PFOA data is less than 1/5th of the calculated WQBEL (145,000 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 sampling. **After a review of the available data, the department has determined that it is warranted to reduce the sampling frequency in this case to quarterly.**

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: 9/30/25

cc: Laura Gerold, Basin Engineer – NER/Green Bay
Nate Willis, P.E., PFAS Implementation Coordinator – CO

Attachment 1 – PFOS and PFOA Data

	Outfall 004	
	PFOS Data [ng/L]	PFOA Data [ng/L]
Apr-21	<0.113	0.236
Oct-24	<0.83	<1.6
Nov-24	<0.85	<1.7
Dec-24	<0.8	<1.6
Jan-25	<0.89	<1.7
Feb-25	2.1	<0.99
Mar-25	0.82	<0.48
Apr-25	1.9	<0.98
May-25	0.96	<0.97
Jun-25	0.91	<0.96
Jul-25	1.6	<1.8
Aug-25	<0.78	<0.97