

Permit Fact Sheet for Modification

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

General Information

| | |
|----------------------------------|--|
| Permit Number: | WI-0029289-09-3 |
| Permittee Name: | KIELER SANITARY DISTRICT No 1 |
| Address: | 3854 Kilian Ln |
| City/State/Zip: | Kieler WI 53812 |
| Discharge Location: | The headwaters of Sinnipee Creek, approximately 60 feet from the SW corner of the WWTP building at 3854 Kilian Lane, Kieler, WI 53812. Located in the SE ¼ of SE ¼ Section 33, T2N, R2W, Grant County. See Attachment 1 for map. |
| Receiving Water: | The Headwaters of Sinnipee Creek, Platte River watershed (GP02), Grant-Platte River Basin, Grant County |
| StreamFlow (Q _{7,10}): | Annual 7Q10 of Sinnipee Creek at the discharge is zero and 2.75 miles downstream of outfall is 0.15 cfs. |
| Stream Classification: | Limited Forage Fish Community from the WWTP outfall to Bluff Rd. From Bluff Rd to the Mississippi River the waterway is Warm Water Sport Fish. Non-public water supply |
| Design Flow(s) | Annual Average 0.091 MGD |
| Significant Industrial Loading? | Kieler Service Center, PSSI Chemical Innovations (formerly Packers Chemical), and Half Baked Powder Coatings. |
| Operator at Proper Grade? | Yes; Required: Basic A1, B, C, D, and SS. SS must be obtained during this permit term. |
| Approved Pretreatment Program? | N/A |

Facility Description

Kieler Sanitary District No. 1 (Kieler) is an existing discharger and operates a wastewater treatment plant with an annual average design capacity of 0.091 MGD. The actual annual average flow from July 2016 to June 2021 was 0.067 MGD. The SD operates a small activated sludge oxidation ditch with influent screw screen and final clarification. Effluent is disinfected via chlorination/dechlorination prior to discharge to the headwaters of Sinnipee Creek. Sludge handling and treatment consists of a two-cell storage tank with additional storage planned and final disposal to department approved land application sites.

Changes to the treatment train or increases in flow to the facility may be proposed during the proposed permit term depending on compliance schedules. The permittee will be taking steps to identify required actions in an Operational Needs Review.

Substantial Compliance Determination

Enforcement During Last Permit: After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a compliance inspection on December 16, 2020, this facility was found to not be in substantial compliance with their current permit. Enforcement actions include a 2018 Notice of Noncompliance, Notice

of Violations in 2018 and 2020, and a referral to the Department of Justice in 2021. A stipulation for judgement was signed on March 9, 2022. Those required actions have been included in the proposed permit. The department recognizes that violations of effluent limitations could continue until the Operational Needs Review actions are complete; however, the schedules in the proposed permit are to achieve compliance pursuant to the court order.

| Sample Point Designation | | |
|---------------------------------|--|--|
| Sample Point Number | Discharge Flow, Units, and Averaging Period | Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable) |
| 701 | 0.070 MGD (July 2016 – June 2021) | Influent: 24-Hr flow proportional sample collected after the parshall flume and screen. Flow meter located prior to the parshall flume after the screen. |
| 001 | 0.067 MGD (July 2016 – June 2021) | Effluent: 24-Hr flow proportional samples collected at the beginning of the last channel of the chlorine contact tank and grab samples collected at the end of the chlorine contact tank, prior to discharge to the headwaters of Sinnipee Creek. Flow meter located prior to exiting the chlorine contact tank. |
| 002 | 10.5 metric tons/year (5-year average) | Representative sludge samples shall be collected annually from the agitation pump outlet. |

1 Influent - Proposed Monitoring

Sample Point Number: 701- INFLUENT

| Monitoring Requirements and Limitations | | | | | |
|--|-------------------|------------------------|-------------------------|----------------------|--------------|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| Flow Rate | | MGD | Daily | Continuous | |
| BOD5, Total | | mg/L | 3/Week | 24-Hr Flow Prop Comp | |
| Suspended Solids, Total | | mg/L | 3/Week | 24-Hr Flow Prop Comp | |

Changes from Previous Permit

Changes are highlighted in the table above. Flow sample frequency changed to ‘Daily’ to reflect the appropriate sample. Sampling frequency for BOD and TSS increased to 3/week.

Explanation of Limits and Monitoring Requirements

Tracking of BOD₅, and Suspended Solids are required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code and in the Standard Requirements section of the permit. The parameters and sampling frequency proposed are standard for similar systems of this size. Influent sampling frequency is set equal to effluent sampling frequency. See explanation in the effluent session for more information on why sampling frequency was increased.

2 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- EFFLUENT to SINNIPEE CREEK

| Monitoring Requirements and Limitations | | | | | |
|---|----------------------|-----------------|------------------|----------------------|---|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| Flow Rate | | MGD | Daily | Continuous | |
| BOD5, Total | Weekly Avg | 30 mg/L | 3/Week | 24-Hr Flow Prop Comp | November through April |
| BOD5, Total | Weekly Avg | 15 mg/L | 3/Week | 24-Hr Flow Prop Comp | May through October |
| BOD5, Total | Monthly Avg | 30 mg/L | 3/Week | 24-Hr Flow Prop Comp | November through April |
| BOD5, Total | Monthly Avg | 15 mg/L | 3/Week | 24-Hr Flow Prop Comp | May through October |
| BOD5, Total | Weekly Avg | 22.9 lbs/day | 3/Week | Calculated | November through April |
| BOD5, Total | Weekly Avg | 11.4 lbs/day | 3/Week | Calculated | May through October |
| Suspended Solids, Total | Weekly Avg | 30 mg/L | 3/Week | 24-Hr Flow Prop Comp | November through April |
| Suspended Solids, Total | Weekly Avg | 15 mg/L | 3/Week | 24-Hr Flow Prop Comp | May through October |
| Suspended Solids, Total | Monthly Avg | 30 mg/L | 3/Week | 24-Hr Flow Prop Comp | November through April |
| Suspended Solids, Total | Monthly Avg | 15 mg/L | 3/Week | 24-Hr Flow Prop Comp | May through October |
| Suspended Solids, Total | Weekly Avg | 22.9 lbs/day | 3/Week | Calculated | November through April |
| Suspended Solids, Total | Weekly Avg | 11.4 lbs/day | 3/Week | Calculated | May through October |
| Nitrogen, Ammonia Variable Limit | | mg/L | 3/Week | See Table | Using the daily effluent pH result, look up the daily maximum variable ammonia limit from the pH dependent table in the permit. Report the variable limit in the Nitrogen, Ammonia Variable Limit column of the eDMR. |
| Nitrogen, Ammonia (NH3-N) Total | Daily Max - Variable | mg/L | 3/Week | 24-Hr Comp | Enter the daily ammonia result and compare to Nitrogen, Ammonia Variable Limit to determine |

| Monitoring Requirements and Limitations | | | | | |
|---|--------------------------|-----------------|------------------|-------------|--|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| | | | | | compliance. |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 31 mg/L | 3/Week | 24-Hr Comp | November through April |
| Nitrogen, Ammonia (NH3-N) Total | Weekly Avg | 5.6 mg/L | 3/Week | 24-Hr Comp | May through October |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 12 mg/L | 3/Week | 24-Hr Comp | November through April |
| Nitrogen, Ammonia (NH3-N) Total | Monthly Avg | 2.2 mg/L | 3/Week | 24-Hr Comp | May through October |
| pH Field | Daily Max | 9.0 su | 5/Week | Grab | |
| pH Field | Daily Min | 6.0 su | 5/Week | Grab | |
| Dissolved Oxygen | Daily Min | 4.0 mg/L | 5/Week | Grab | |
| Fecal Coliform | Geometric Mean - Monthly | 400 #/100 ml | Weekly | Grab | Interim limit effective May through September annually until the final E. coli limit goes into effect per the Effluent Limitations for E. coli Schedule. |
| E. coli | | #/100 ml | Weekly | Grab | Monitoring only May through September annually until the final limit goes into effect per the Effluent Limitations for E. coli Schedule. |
| E. coli | Geometric Mean - Monthly | 126 #/100 ml | Weekly | Grab | Limit Effective May through September annually per the Effluent Limitations for E. coli Schedule. |
| E. coli | % Exceedance | 10 Percent | Monthly | Calculated | Limit Effective May through September annually per the Effluent Limitations for E. coli Schedule. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month. |
| Chlorine, Total Residual | Daily Max | 19 ug/L | 5/Week | Grab | May through September |

| Monitoring Requirements and Limitations | | | | | |
|--|-------------------|------------------------|-------------------------|----------------------|---|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| Chlorine, Total Residual | Weekly Avg | 7.3 ug/L | 5/Week | Grab | May through September |
| Chlorine, Total Residual | Monthly Avg | 7.3 ug/L | 5/Week | Grab | May through September |
| Phosphorus, Total | Monthly Avg | 6.7 mg/L | 3/Week | 24-Hr Flow Prop Comp | Limit effective throughout the permit term, as it represents a minimum control level. Final limits become effective July 1, 2023. See Water Quality Trading (WQT) sections for more information. |
| Phosphorus, Total | | lbs/day | 3/Week | Calculated | Report daily mass discharged using Equation 1a. in the Water Quality Trading (WQT) section. |
| WQT Credits Used (TP) | | lbs/month | Monthly | Calculated | Report WQT TP Credits used per month using Equation 2c. 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) | Monthly Avg | 0.225 mg/L | Monthly | Calculated | Limit is effective July 1, 2023. Report the WQT TP Computed Compliance value using Equation 4a. in the Water Quality Trading (WQT) section. Value entered on the last day of the month. |
| WQT Computed Compliance (TP) | 6-Month Avg | 0.075 mg/L | Monthly | Calculated | Limit is effective July 1, 2023. Value entered on the last day of the month. Value entered at the end of the six-month period (June 30 and December 31) . |
| WQT Computed Compliance (TP) | 6-Month Avg | 0.057 lbs/day | Monthly | Calculated | Limit is effective July 1, 2023. Report the WQT TP Computed Compliance value using Equation 4b. in |

| Monitoring Requirements and Limitations | | | | | |
|--|-------------------|------------------------|-------------------------|----------------------|---|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| | | | | | the Water Quality Trading (WQT) section. Value entered at the end of the six-month period (June 30 and December 31). |
| WQT Credits Used (TP) | Annual Total | 140.6 lbs/yr | Annual | Calculated | Limit effective for 2023. The sum of total monthly credits used may not exceed Table 2 values listed below. |
| WQT Credits Used (TP) | Annual Total | 241 lbs/yr | Annual | Calculated | Limit effective annually starting in 2024. The sum of total monthly credits used may not exceed Table 2 values listed below. |
| Chloride | Weekly Avg | 400 mg/L | 4/Month | 24-Hr Flow Prop Comp | Sampling shall be conducted on four consecutive days each month. |
| Chloride | Monthly Avg | 400 mg/L | 4/Month | 24-Hr Flow Prop Comp | Sampling shall be conducted on four consecutive days each month. |
| Chloride | Weekly Avg | 300 lbs/day | 4/Month | Calculated | Chloride mass discharge shall be calculated using the daily concentration (mg/L) x daily flow (MGD) x 8.34. |
| Nitrogen, Total Kjeldahl | | mg/L | See Listed Qtr(s) | 24-Hr Flow Prop Comp | Annual in rotating quarters. See Nitrogen Series Monitoring section below. |
| Nitrogen, Nitrite + Nitrate Total | | mg/L | See Listed Qtr(s) | 24-Hr Flow Prop Comp | Annual in rotating quarters. See Nitrogen Series Monitoring section below. |
| Nitrogen, Total | | mg/L | See Listed Qtr(s) | Calculated | Annual in rotating quarters. See Nitrogen Series Monitoring section below. Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen. |

| Monitoring Requirements and Limitations | | | | | |
|---|-------------|-----------------|-------------------|----------------------|--|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| Temperature Maximum | | deg F | 3/Week | Continuous | Monitoring only in 2026. |
| Acute WET | | TUa | See Listed Qtr(s) | 24-Hr Flow Prop Comp | See WET section. |
| Chronic WET | Monthly Avg | 1.3 TUc | See Listed Qtr(s) | 24-Hr Flow Prop Comp | See WET section. |
| PFOS | | ng/L | Annual | Grab | Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule. |
| PFOA | | ng/L | Annual | Grab | Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule. |

Changes from Previous Permit

Changes are highlighted in the table above. Sample frequency for BOD, TSS, Ammonia and Phosphorus increased to 3/week. Sample frequency for pH and DO were increased to 5/week. Ammonia limits updated including a new pH variable daily maximum limit along with weekly and monthly average limits every month of the year. Sample frequency increased for pH, dissolved oxygen, and temperature. Chlorine daily maximum limit reduced and monthly average limit added. Chloride monthly average limits added. Phosphorus interim limit and final compliance steps updated. Nitrogen series monitoring added. WET testing frequency updated and chronic WET limit added.

~~PFOS and PFOA monitoring once every two months is included in the permit in accordance with s. NR 106.98(2)(c), Wis. Adm. Code.~~

PFOS and PFOA – The monitoring frequency for PFOS and PFOA has been reduced from 1/ 2 months to Annual.

Fecal coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits. E. coli monitoring is required at the permit effective date. An interim fecal coliform limit of 400 #/100 ml as a monthly geometric mean will apply from the permit effective date through the end of a compliance schedule. At the end of the compliance schedule, E. coli limits of 126 #/100 ml as a monthly geometric mean that may not be exceeded and 410 #/100 ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month will apply.

Explanation of Limits and Monitoring Requirements

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

Refer to the Water Quality Based Effluent Limitations (WQBELs) memo for Kieler, prepared by Sarah Luck dated October 19, 2021 used for this reissuance.

BODs, pH, DO, and Total Suspended Solids – The categorical limitations and requirements for BODs, TSS, pH, and DO are carried over into this permit. These limitations are not subject to change at this time because the receiving water characteristics have not changed. Additional monthly average limitations were added in accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable. Sample frequencies were increased to 3/Week for BOD and TSS. Sample frequency for pH and DO increased to 5/Week; these are the standard sample frequency and were warranted because data submitted during the

previous permit term shows noncompliance with permit limitations and operational variability that requires increased operational actions (see Monitoring Frequency).

Fecal Coliform - On May 1, 2020 revisions to the bacteria surface water criteria became effective. Therefore, this permit has been updated to include the existing fecal coliform limit as an interim limit along with *E. coli* monitoring and a compliance schedule to meet required *E. coli* limits. The interim fecal coliform limit is effective until the final *E. coli* limits becomes effective per the schedule.

E. Coli - Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying *E. coli* WPDES permit implementation procedures became effective May 1, 2020. The new rule requires that WPDES permits for facilities with required disinfection include monitoring for *E. coli* while facilities are disinfecting during the recreation period, and establish effluent limitations for *E. coli* established in s. NR 210.06 (2), Wis. Adm. Code. The administrative code rule changes included the following actions: revised the bacteria water quality criteria from fecal coliform to *E. coli* to protect recreation in ch. NR 102, Wis. Adm. Code.; removed fecal coliform criteria for certain individual waters from ch. NR 104, Wis. Adm. Code.; revised permit requirements for publicly and privately owned sewage treatment works in ch. NR 210, Wis. Adm. Code.; and, updated approved analytical methods for bacteria in ch. NR 219, Wis. Adm. Code.

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). The data demonstrates that the annual monthly average phosphorus loading is less than 150 lbs/month, which is the threshold for municipalities in accordance to s. NR 217.04 (1) (a) 1, Wis. Adm. Code, and therefore no technology-based limit is required. In this case, the WQBEL is 0.225 mg/L (monthly average), 0.075 mg/L & 0.057 lbs/day (6-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 0.3 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 current interim limit of 6.7 mg/L will be retained in the permit as a minimum control value. The wastewater treatment facility is not able to meet the WQBEL. 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-2022-0002) or approved amendments thereof. The total ‘WQT TP Credits’ available are designated in the approved WQT Plan. The permittee is implementing the management practice of streambank stabilization. The WQT Plan proposes the generation of a range of 241 lbs/yr of phosphorus credits for the next five years with 2023 prorated.

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

The department has determined at this time that an increase in monitoring frequency for phosphorus from Monthly to 3/week is warranted because data submitted during the previous permit term shows noncompliance with permit limitations, the reduced monitoring frequency in the current permit has been increased to the standard sampling frequency as outlined in the Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges. A sampling frequency of 3/week is standard for Phosphorus to ensure representative data per s. 205.066(1), Wis. Adm. Code (see Monitoring Frequency).

Ammonia - Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia. The proposed ammonia daily maximum, weekly and monthly

average limits were calculated based on ch. NR 106 and available effluent and stream data. Weekly average limits November through April are required with this permit reissuance in accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable. See the attached WQBEL memo for detailed explanations. The permittee requested during permit drafting process to have a pH variable daily maximum limit. Sample frequency increased to 3/Week, the standard sample frequency, warranted because data submitted during the previous permit term shows noncompliance with permit limitations and operational variability that requires increased operational actions (see Monitoring Frequency).

Chlorine – These limitations are based on Chs. NR 105 and 106, Wis. Adm. Code. The total residual chlorine limits were reevaluated and daily max limits were reduced. In accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable therefore monthly average limit was required.

Chloride - Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code. Subchapter VII of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. Weekly average concentration and mass limits were calculated in accordance with s. NR 106.05(4)(b), Wis. Adm. Code. Sampling frequency remains at the recommended 4/month, 4 consecutive days per month. In accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable. The addition on monthly average limits was required to be in compliance with the federal regulation. During the previous permit term, Kieler withdrew its application for a chloride variance, which resulted in the chloride WQBELs becoming effective. With the chloride WQBELs in effect, Kieler must maintain compliance with the existing limits.

Temperature - Requirements for Temperature are included in NR 102 Subchapter II Water Quality Standards for Temperature and NR 106 Subchapter V Effluent Limitations for Temperature. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects. Monitoring for one full year is again recommended. Sample frequency was increased to the standard 3/week frequency to ensure adequate and representative data. The department also recommends a dissipative cooling study be conducted in the month of November. Temperature monitoring set to 2024 to be concurrent with completion of the DC study.

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. 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. Annual tests are scheduled in the rotating quarters listed in the 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 municipal dischargers with an average flow rate less than 1 MGD, to be evaluated on a case-by-case basis to determine if monitoring is required pursuant to s. NR 106.98(3)(b), Wis. Adm. Code. The department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites 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 POTW has an indirect discharger(s) that may be a potential source of PFOS/PFOA.

Therefore, monitoring once every two months is included. The initial determination of the need for 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.

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.

Whole Effluent Toxicity: Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09 Wis. Adm. Code, as revised August 2016. (See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at <http://dnr.wi.gov/topic/wastewater/wet.html>). Annual chronic WET testing in rotating quarters, as listed in the permit, is required whenever a limit is required. Two annual Acute WET tests are required. Sampling WET concurrently with any chemical-specific toxic substances is recommended.

Municipal Effluent Limits – In accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable. Additional effluent limits for BOD, TSS, Ammonia, Chlorine and Chloride were required.

Monitoring Frequency - The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. The sample frequency for BOD, TSS, Ammonia and Phosphorus increased from ‘2/Week’ to ‘3/Week’. The sample frequency was set below the standard minimum frequency. After a review of the operations in the last year, the department determined an increase to the standard minimum frequency is warranted due to the operational issues at the WWTF that resulted in enforcement action. The viability of the data and effluent limit violations warrant increased sampling to the standard sample frequency for similar sized facilities.

3 Land Application - Proposed Monitoring and Limitations

| Municipal Sludge Description | | | | | | |
|--|-----------------------|------------------------------|---------------------------|--------------------------|------------------|--|
| Sample Point | Sludge Class (A or B) | Sludge Type (Liquid or Cake) | Pathogen Reduction Method | Vector Attraction Method | Reuse Option | Amount Reused/Disposed (Dry Tons/Year) |
| 002 | B | Liquid | Fecal Coliform Testing | Incorporation, Injection | Land Application | 10.5 metric tons/year (5 year average) |
| Does sludge management demonstrate compliance? No, See ONR Schedule | | | | | | |
| Is additional sludge storage required? No | | | | | | |
| Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No | | | | | | |
| If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility | | | | | | |

| Municipal Sludge Description | | | | | | |
|---|-----------------------|------------------------------|---------------------------|--------------------------|--------------|--|
| Sample Point | Sludge Class (A or B) | Sludge Type (Liquid or Cake) | Pathogen Reduction Method | Vector Attraction Method | Reuse Option | Amount Reused/Disposed (Dry Tons/Year) |
| Is a priority pollutant scan required? No | | | | | | |
| Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD. | | | | | | |

Sample Point Number: 002- SLUDGE

| Monitoring Requirements and Limitations | | | | | |
|---|--------------|-----------------|------------------|-------------|-------|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| Solids, Total | | Percent | Annual | Composite | |
| Arsenic Dry Wt | Ceiling | 75 mg/kg | Annual | Composite | |
| Arsenic Dry Wt | High Quality | 41 mg/kg | Annual | Composite | |
| Cadmium Dry Wt | Ceiling | 85 mg/kg | Annual | Composite | |
| Cadmium Dry Wt | High Quality | 39 mg/kg | Annual | Composite | |
| Copper Dry Wt | Ceiling | 4,300 mg/kg | Annual | Composite | |
| Copper Dry Wt | High Quality | 1,500 mg/kg | Annual | Composite | |
| Lead Dry Wt | Ceiling | 840 mg/kg | Annual | Composite | |
| Lead Dry Wt | High Quality | 300 mg/kg | Annual | Composite | |
| Mercury Dry Wt | Ceiling | 57 mg/kg | Annual | Composite | |
| Mercury Dry Wt | High Quality | 17 mg/kg | Annual | Composite | |
| Molybdenum Dry Wt | Ceiling | 75 mg/kg | Annual | Composite | |
| Nickel Dry Wt | Ceiling | 420 mg/kg | Annual | Composite | |
| Nickel Dry Wt | High Quality | 420 mg/kg | Annual | Composite | |
| Selenium Dry Wt | Ceiling | 100 mg/kg | Annual | Composite | |
| Selenium Dry Wt | High Quality | 100 mg/kg | Annual | Composite | |
| Zinc Dry Wt | Ceiling | 7,500 mg/kg | Annual | Composite | |
| Zinc Dry Wt | High Quality | 2,800 mg/kg | Annual | Composite | |
| Nitrogen, Total Kjeldahl | | Percent | Annual | Composite | |
| Nitrogen, Ammonium (NH4-N) Total | | Percent | Annual | Composite | |

| Monitoring Requirements and Limitations | | | | | |
|---|--------------|-----------------|------------------|-------------|--------------|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| Phosphorus, Total | | Percent | Annual | Composite | |
| Phosphorus, Water Extractable | | % of Tot P | Annual | Composite | |
| Potassium, Total Recoverable | | Percent | Annual | Composite | |
| PCB Total Dry Wt | Ceiling | 50 mg/kg | Once | Composite | Once in 2024 |
| PCB Total Dry Wt | High Quality | 10 mg/kg | Once | Composite | Once in 2024 |

Changes from Previous Permit:

The department determined no changes were required.

Explanation of Limits and Monitoring Requirements

Requirements for land application of municipal sludge are determined in accordance with ch. NR 204 Wis. Adm. Code. Ceiling and high quality limits for metals in sludge are specified in s. NR 204.07(5), Wis. Adm. Code. Limitations for PCBs are addressed in s. NR 204.07(3)(k), Wis. Adm. Code.

4 Schedules

4.1 Effluent Limitations for E. coli

The permittee shall comply with surface water limitations for E. coli as specified. No later than 14 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance. If a submittal is required, a timely submittal fulfills the notification

| Required Action | Due Date |
|---|------------|
| <p>Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.</p> | 11/21/2023 |
| <p>Operational Evaluation Report: The permittee shall prepare and submit an Operational Evaluation Report to the Department for review and approval. The report shall include an evaluation of collected effluent data and proposed operational improvements that will optimize efficacy of disinfection at the treatment plant during the period prior to complying with final E. coli limitations and, to the extent possible, enable compliance with the final E. coli limitations. The report shall include a plan and schedule for implementation of the operational improvements. These improvements shall occur as soon as possible, but not later than April 30, 2025. The report shall state whether the operational improvements are expected to result in compliance with the final E. coli limitations.</p> <p>The permittee shall implement the operational improvements in accordance with the approved plan and schedule specified in the Operational Evaluation Report and in no case later than April 30, 2025.</p> <p>If the Operational Evaluation Report concludes that the operational improvements are expected to result in compliance with the final E. coli limitations, the permittee shall comply with the final E. coli limitations by April 30, 2025 and the permittee is not required to comply with subsequent milestones identified below in this compliance schedule ('Submit Facility Plan', 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet Limitations', 'Construction Upgrade Progress Report', 'Complete</p> | 10/31/2024 |

| | |
|---|------------|
| Construction', 'Achieve Compliance'). FACILITY PLAN - If the Operational Evaluation Report concludes that operational improvements alone are not expected to result in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final E. coli limitations using the existing treatment system with only operational improvements, the Department may reopen and modify the permit to include an implementation schedule for achieving the final E. coli limitations sooner than April 30, 2028 . | |
| Submit Facility Plan: If the Operational Evaluation Report concluded that the permittee cannot achieve final E. coli limitations with operational improvements alone, the permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor. | 04/30/2025 |
| Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to achieve compliance with final E. coli limitations and a schedule for completing construction of the upgrades by the complete construction date specified below. | 03/31/2026 |
| Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41, Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. 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. | 09/30/2026 |
| Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades. | 09/30/2027 |
| Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. | 03/31/2028 |
| Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations. | 04/30/2028 |

Explanation of Schedules

A compliance schedule is included in the permit to provide time for the permittee to investigate options for meeting new effluent *E. coli* water quality-based effluent limits while coming into compliance with the limits as soon as reasonably possible.

4.2 Operation and Needs Review (ONR)

The permittee shall submit an Operation and Needs Review (ONR) that complies with Wis. Admin. Code § NR 208.03(7) to evaluate the ability of the treatment works to maintain effluent limits and meet permit conditions.

| Required Action | Due Date |
|--|------------|
| Submit ONR Report: The ONR shall evaluate operation and maintenance procedures; existing equipment; unit process design capacities relative to current flows and loads; influent sources to ensure compliance with Wis. Admin. Code § NR 205.07(2)(b), and prohibited wastes as required by Wis. Admin. Code § NR 211.10; and shall recommend actions such as operational changes, pretreatment, revisions to and enforcement of sewer use ordinance, inflow/infiltration reductions, or minor/major upgrades of the treatment works. | 11/01/2022 |

| | |
|---|------------|
| The ONR shall categorize all actions recommended in the ONR as either short-term, intermediate, or long-term. | |
| ONR Revision Submission: The permittee shall correct any ONR deficiencies identified by DNR and resubmit the ONR within 14 calendar days after receiving notice of deficiencies from the DNR. | |
| ONR Progress Report: The Permittee shall complete all short-term and intermediate actions identified within the ONR, as approved by the DNR. The permittee shall certify in a submittal to DNR that all short-term and intermediate actions identified in the ONR and approved by the DNR have been completed. | 05/01/2023 |
| Facility Plan: The permittee shall submit a Comprehensive Facility Plan to DNR for approval in compliance with Wis. Admin. Code ch. NR 110. The Comprehensive Facility Plan must evaluate alternatives for compliance with limits and the long-term actions identified by the ONR and shall identify if further actions are needed for upgrades or if equipment replacement is planned. | 06/01/2023 |
| Facility Plan Revision Submission: The permittee shall submit a revised Comprehensive Facility Plan to DNR, correcting any deficiencies in the Comprehensive Facility Plan identified by DNR, within 30 calendar days after receiving notice of deficiencies. | |
| Plans and Specifications (P&Ss): The permittee shall submit final construction plans and specifications for review in accordance with s. 281.41, Wis. Stats., for compliance with Ch. NR 108 and 110, Wis. Adm. Code. P&Ss are due at least 270 days after the Comprehensive Facility Plan is approved if reviewable projects, pursuant to Ch. NR 108, Wis. Adm. Code, and s. 281.41, Wis. Stats., are identified in the approved Comprehensive Facility Plan. | |
| Initiating Construction Notification: 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. Notification is due at least 90 days after approval of the approved plans and specifications. | |
| Progress Report(s): The permittee shall submit a progress report on the construction upgrades. The first progress report shall be submitted no later than 180 days after construction commences. A construction progress report shall be submitted every 180 days after the initial progress report is received and will continue until substantial completion is confirmed. | |
| Substantial Completion Confirmation: The permittee shall complete construction of wastewater treatment system upgrades and provide confirmation that construction of the wastewater treatment system upgrades has been substantially completed within 90 days of construction completion. | |

Explanation of Schedules

This schedule requires the permittee to complete an ONR and submit reports on completed actions.

4.3 Water Quality Trading (WQT) Management Plan

| Required Action | Due Date |
|--|------------|
| Submit Progress Report on Management Practices Installation: Submit a progress report on the installation of management practices as identified in the Water Quality Trading Plan WQT-2022-0002 as approved by the Department and shall certify in the progress report that Kieler has received approval of all local, state, and federal permits and/or licenses required to implement and construct | 11/01/2022 |

| | |
|---|------------|
| the management practices. | |
| Complete Installation of Management Practices: Complete the installation of management practices as identified in the Water Quality Trading Plan WQT-2022-0002 as approved by the Department. | 05/01/2023 |
| Management Practices: The Management Practices as identified in the Water Quality Trading Plan shall become effective and the permittee shall submit a completed Management Practice Registration Form 3400-207 for each site to certify proper installation of management practices in accordance with WQT-2022-0002. | 05/31/2023 |
| Comply with Total Phosphorus Limits: Shall comply with the phosphorus water quality-based effluent limits (WQBELs) as specified in Table 2.2.1 through the combination of WQT and in-plant chemical phosphorus removal. The permittee shall certify in a submittal to DNR that Kieler is complying with the phosphorus WQBELs and that the nonpoint source management practices installed to generate pollutant reduction credits are operated and maintained in a manner consistent with that specified in WQT-2022-0002. | 07/01/2023 |

Explanation of Schedules

Water Quality Trading (WQT) Management Plan - This schedule requires the permittee to submit a progress report on the installation of practices identified in the Water Quality Trading Plan. The schedule also requires the permittee to install and manage the identified practices in the approved Water Quality Trading Management Plan to comply with the total phosphorus limits specified the permit.

4.4 Annual Water Quality Trading (WQT) 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> | 01/31/2024 |
| Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year. | 01/31/2025 |
| Annual WQT Report #3: Submit an annual WQT report that shall cover the previous year. | 01/31/2026 |
| 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. | 01/31/2027 |
| 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. | |
|---|--|

Explanation of Schedules

Reports are required, starting for calendar year 2024, 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.

4.5 Dissipative Cooling Evaluation Month of November

| Required Action | Due Date |
|---|------------|
| Report on Effluent Discharges: Submit ‘Dissipative Cooling Demonstration – Weekly Average Limits’ in the month of November following the procedures for demonstration of dissipative cooling per NR 106.59, as well as re-evaluation of limits pursuant to NR 106 Subchapters V & VI or NR 102.26, Wis. Adm. Code. | 01/31/2025 |

Explanation of Schedules

The limit memo requested a Dissipative Cooling study in the month of November prior to the next permit reissuance.

4.6 PFOS/PFOA Minimization Plan Determination of Need

| Required Action | Due Date |
|---|------------|
| <p>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.</p> <p>This report shall include all PFOS and PFOA data collected including any voluntary influent, intake, in-plant, collection system sampling, and blank sample results.</p> | 09/30/2023 |
| <p>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.</p> <p>This report shall include all PFOS and PFOA data collected including any voluntary influent, intake, in-plant, collection system sampling, and blank sample results.</p> <p>The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan.</p> <p>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</p> | 09/30/2024 |

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 action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.

Explanation of Schedules

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 municipal dischargers with an average flow rate less than 1 MGD, to be evaluated on a case-by-case basis to determine if monitoring is required pursuant to s. NR 106.98(2)(c), Wis. Adm. Code. The department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites 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 POTW has an indirect discharger(s) that may be a potential source of PFOS/PFOA.

Therefore, monitoring once every two months is included. The initial determination of the need for 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.

Special Reporting Requirements

None

Other Comments:

None

Attachments:

~~Water Quality Based Effluent Limits with Map(s) — 10/22/2021~~

~~Public Notice~~

~~Water Quality Trading Plan — 8/31/2021 revised 12/17/2021~~

~~Water Quality Trading Approval Letter — 1/4/2022~~

~~Stipulated Judgement — 3/9/2022~~

PFOS and PFOA Water Quality-Based Effluent Limitations for the Kieler Sanitary District #1 WWTF -WPDES Permit No. (WI-0029289) in Grant County, by Amy Garbe, PE, Wastewater Engineer, dated 11/14/24

Proposed Expiration Date:

September 30, 2027

Justification Of Any Waivers From Permit Application Requirements

No waivers

Prepared By: Jennifer Jerich, Wastewater Specialist

Date: 3/30/2022; 4/21/22; 7/6/2022

Date post Fact Check: 8/02/2022

Date post Public Notice: 9/28/2022 – clerical edits made to ensure the fact sheet and permit tables match.

Revised By: Sarah Donoughe, Wastewater Specialist-Adv

Date: November 20, 2024

DATE: November 14, 2024

TO: Sarah Donoughe – NER

FROM: Kari Fleming – WY/3

SUBJECT: PFOS and PFOA Water Quality-Based Effluent Limitations for the Kieler Sanitary District #1 WWTF -WPDES Permit No. (WI-0029289) in Grant County

This is in response to your request for an evaluation of the need for PFOS and PFOA limitations for the Kieler Sanitary District #1 WWTF. The wastewater treatment plant discharges effluent to the headwaters of Sinnipee Creek in the Platte River Watershed (GP02) of the Grant-Platte River Basin.

The current permit, effective since October 2022, 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: Sinnipee Creek
- Classification:
 - Limited forage fish community, non-public water supply, from the outfall downstream to Bluff Road (approximately 2.75 miles)
 - Warm water sport fish by default from Bluff Road to the Mississippi River
- Flow:
 - At outfall:
 - 7-Q10 = 0 cfs (cubic feet per second)
 - 7-Q2 = 0 cfs
 - At classification change, approximately 2.75 miles downstream of the outfall:
 - 7-Q10 = 0.15 cfs
 - 7-Q2 = 0.28 cfs
- % of Flow used to calculate limits: Not applicable where the receiving water low flows are zero

Effluent Information

- Flow: Average Design Flow = 0.091 MGD, for reference, the actual average flow from October 2022 to September 2024 was 0.077 MGD.
- Effluent characterization: This facility is categorized as a minor municipality

The following table lists the statistics for effluent PFOS and PFOA levels from January 2023 through September 2024.

| | PFOS ng/L | PFOA ng/L |
|------------------------|--------------|--------------|
| 1-day P ₉₉ | 2.73 | 8.78 |
| 4-day P ₉₉ | 1.87 | 5.73 |
| 30-day P ₉₉ | 1.43 | 4.17 |
| Mean | 1.21 | 3.43 |

| | PFOS ng/L | PFOA ng/L |
|-------------|--------------|--------------|
| Std | 0.48 | 1.61 |
| Sample Size | 13 | 13 |
| Range | 0.658-2.0 | 1.6-7.51 |

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 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 Sinnipee Creek

Qs = 0 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 = 0.091 MGD = 0.14 cfs

f = the fraction of effluent withdrawn from the receiving water = 0

After substituting the appropriate variables, the calculated PFOA limit is 95 ng/L.

Reasonable Potential Determination

In accordance with s. NR 106.98(4)(a), 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 30-day P₉₉ of reported effluent PFOS data is less than 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 30-day P₉₉ of reported effluent PFOA data is less than the calculated WQBEL (95 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 of 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 annually.**

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 (2) – P99 Calculations

PREPARED BY:



Amy Garbe, P.E., Wastewater Engineer

date: 11/14/24

cc: Caitlin O'Connell, Basin Engineer – SCR/Dodgeville
Nate Willis, P.E., PFAS Implementation Coordinator – CO

Attachment 1 – PFOS P99 Calculation

| EFFLUENT VARIABILITY ANALYSIS - | | | | |
|---------------------------------|----------|----------|----------|---|
| | = | = | = | = |
| SUBSTANCE: | | | | |
| NUMBER OF VALUES: | | | | |
| TOTAL | 13 | | | |
| DETECTED | 13 | | | |
| NON-DETECTED | 0 | | | |
| d | 0 | | | |
| m | 1.210154 | | | |
| mean of all data | 1.210154 | | | |
| s | 0.477962 | | | |
| n | 1 | 4 | 30 | |
| d^n | 0 | 0 | 0 | |
| p | 0.99 | 0.99 | 0.99 | |
| Z_p | 2.326785 | 2.326785 | 2.326785 | |
| 1+(s/m)^2 | 1.155993 | 1.155993 | 1.155993 | |
| (sigma_d)^2 | 0.14496 | 0.14496 | 0.14496 | |
| mu_d | 0.118268 | 0.118268 | 0.118268 | |
| (sigma_dn)^2 | 0.14496 | 0.038257 | 0.005186 | |
| mu_dn | 0.118268 | 0.171619 | 0.188154 | |
| P_99 exponent | 1.004158 | 0.626725 | 0.35572 | |
| P_99 | 2.73 | 1.87 | 1.43 | |

| Data Summary | |
|--------------|-------|
| Jan-23 | 0.87 |
| Feb-23 | 1.4 |
| Mar-23 | 1 |
| Mar-23 | 2 |
| Jun-23 | 0.694 |
| Jul-23 | 1.04 |
| Sep-23 | 1.88 |
| Dec-23 | 0.726 |
| Jan-24 | 0.744 |
| Mar-24 | 0.658 |
| Jun-24 | 1.45 |
| Jul-24 | 1.67 |
| Sep-24 | 1.6 |

Attachment 2 – PFOA P99 Calculation

| EFFLUENT VARIABILITY ANALYSIS - | | | | |
|---------------------------------|----------|----------|----------|---|
| | = | = | = | = |
| SUBSTANCE: | | | | |
| NUMBER OF VALUES: | | | | |
| TOTAL | ----- | | | |
| DETECTED | 13 | | | |
| NON-DETECTED | 13 | | | |
| | 0 | | | |
| d | 0 | | | |
| m | 3.433846 | | | |
| mean of all data | 3.433846 | | | |
| s | 1.61111 | | | |
| | ----- | ----- | ----- | |
| n | 1 | 4 | 30 | |
| d^n | 0 | 0 | 0 | |
| p | 0.99 | 0.99 | 0.99 | |
| Z_p | 2.326785 | 2.326785 | 2.326785 | |
| 1+(s/m)^2 | 1.220135 | 1.220135 | 1.220135 | |
| (sigma_d)^2 | 0.198961 | 0.198961 | 0.198961 | |
| mu_d | 1.1342 | 1.1342 | 1.1342 | |
| (sigma_dn)^2 | 0.198961 | 0.053573 | 0.007311 | |
| mu_dn | 1.1342 | 1.206895 | 1.230025 | |
| P_99 exponent | 2.172065 | 1.745447 | 1.428976 | |
| | ----- | ----- | ----- | |
| P_99 | 8.78 | 5.73 | 4.17 | |
| | ----- | ----- | ----- | |

Data Summary

| | |
|--------|------|
| Jan-23 | 1.6 |
| Feb-23 | 2.9 |
| Mar-23 | 3.1 |
| Mar-23 | 4.5 |
| Jun-23 | 1.85 |
| Jul-23 | 2.67 |
| Sep-23 | 4.64 |
| Dec-23 | 7.51 |
| Jan-24 | 2.53 |
| Mar-24 | 1.82 |
| Jun-24 | 4.52 |
| Jul-24 | 3.01 |
| Sep-24 | 3.99 |