

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

NOTICE OF FINAL DETERMINATION TO REISSUE A WISCONSIN POLLUTANT DISCHARGE  
ELIMINATION SYSTEM (WPDES) PERMIT No. WI-0025194-10-0

Permittee: Racine Wastewater Utility, 2101 Wisconsin Ave, Racine, WI, 53403-3372

Facility Where Discharge Occurs: Racine Wastewater Utility, 2101 Wisconsin Avenue

Receiving Water And Location: Lake Michigan, Approximately 500 feet east of Lake Michigan shoreline in Racine County.

**Brief Facility Description:** The Racine Wastewater Utility is designed to treat 36 MGD and treats on average 21 MGD. Preliminary and primary treatment are achieved by mechanical bar screens, grit chamber, and clarification for solids removal. Ferric chloride is added prior to primary treatment for chemical phosphorus removal. Secondary treatment is performed by conventional activated sludge via aeration basins where naturally occurring metabolizing microorganisms present in the wastewater break down organic matter and final clarification. Tertiary treatment is achieved through year-round UV disinfection. Two equalization basins are used during high flow conditions when influent flows exceed peak flow treatment capacity to prevent flood damage and process upsets. This wastewater is re-routed back to the head of the plant when influent flow decreases for full treatment or undergoes chlorinated disinfection/de-chlorination and blends with post-tertiary treatment wastewater. The option to discharge blended effluent during wet weather events will be continued in the reissued permit. Effluent is discharged year-round to Lake Michigan approximately 500 feet offshore. Sludge treatment occurs by anaerobic digestion, gravity belt thickening, belt filter press dewatering, and is either land applied on Department approved sites or landfilled. The Department has found the facility to be in substantial compliance with its current permit.

**Permit Drafter's Name, Address and Phone:** Melanie Burns, 1027 W St Paul Ave, Milwaukee, WI, 53233, (414) 373-8523

**Basin Engineer's Name, Address, and Phone:** Jacob Van Susteren-Wedeky, 1027 W St Paul Ave, Milwaukee, WI 53233, (414) 239-1480

**Date Permit Signed/Issued:** December 30, 2024

**Date of Effectiveness:** January 1, 2025

**Date of Expiration:** December 31, 2029

**Public Informational Hearing Held On:** N/A

Following the public notice period the Department has made a final determination to reissue the WPDES permit for the above-named permittee for this existing discharge. The permit application information from the WPDES permit file, comments received on the proposed permit and applicable Wis. Adm. Codes were used as a basis for this final determination.

The Department has the authority to issue, modify, suspend, revoke and reissue or terminate WPDES permits and to establish effluent limitations and permit conditions under ch. 283, Stats.

Following is a summary of significant comments and any significant changes which have been made in the terms and conditions set forth in the draft permit:

Comments Received from the Applicant, Individuals or Groups and Any Permit Changes as Applicable

**Racine Water Utility (RWU) Comment #1:** Page 11 (In Fact Sheet) - The utility finds the daily maximum limit for mercury concerning. The change from 4.0 ng/l to 2.5 ng/l is a significant change from the current permit. The 4.0 ng/l limit is already stringent because it is a daily maximum limit and therefore, offers no relief from an exceedance. Rising sludge is an operational concern that sometimes leads to higher concentrations,

**DNR Response to RWU Comment #1:** Refer to the WQBEL. The 1-Day P-99 2.2ng/l. Under normal operating conditions, rising sludge should not be a concern.

**RWU Comment #2:** Section 3.1 - Sampling point 037, lift station 7 (LO7) is listed as a safety site location. This is not a safety site. As such, there is no flow meter or bypass notification system in place.

**DNR Response to RWU Comment #2:** Acknowledged. This sample point will remain because Lift Station 07 was identified in the 2020 Facilities Plan as one of the 16 untreated wastewater overflow sites located throughout the conveyance system (11 Safety Sites & 5 Lift Station discharge sites). There is an additional discharge site at the headworks of the WWTF. The Department has the authority to require sampling and monitoring at overflow locations.

**RWU Comment #3:** 3.2.1 Sampling Point - Frequency. The Utility requests that the frequency for monitoring for fecal coliform and E. coli be limited to five times per week based on guidance in DNR's Implementation of Bacteria Water Quality Standards in Wastewater Permits, January 13, 2021. The guidance suggests minimum monitoring frequency of twice weekly. The Utility is of the opinion that past data supports this request. Language in the permit

to be retained which allows additional sampling at Utility discretion. This allows for more sampling when indicated by the number of samples needed to show compliance with the E. coli percent limit subsection. As the utility makes operational adjustments to lower the E. coli, is it acceptable to take additional samples, provided results are reported? Is the result then considered separately in the calculation or is only the highest result for each day used? Additionally, the utility requests comment about the Bacteria Water Quality Standards in Wastewater Permits, January 13,2021.

**DNR Response to RWU Comment #3:** The Department decreased the sample frequency for fecal and E. coli from daily to 5/week. Additional samples can be taken. On the applicable eDMR, the highest result should be reported.

**RWU Comment #4:** Section 3.2.2.1 - E. coli data for safety site overflows. Sampling sites 010 through 039.

Overflows are variable in duration and staff may not be able to get to every location during the overflow event in order to take the sample. Some overflows are so short in duration that staff cannot mobilize quickly enough. What would happen if we missed sampling from an active overflow? E. coli results are highly variable depending on when the sample is taken during the overflow (early in the rain event/overflow should produce higher E. coli results whereas later in the rain event/overflow should produce more diluted E. coli results). This is difficult for the lab to pinpoint when setting up dilutions and they may be limited on space. Additionally, availability of lab staff may be a concern, especially during hours outside of the work day. Hold times and incubation times may be problematic.

**DNR Response to RWU Comment #4:** The Department acknowledges the logistical issues that can arise during severe weather events however RWU should pursue all practical measures to collect a sample from the collection system that is representative.

**RWU Comment #5:** Section 5.1 The utility requests a compliance schedule for completion of the UV project and subsequent optimization of operation and compliance with the E. coli limitations that allows more time for completion of construction, start-up of equipment, training of staff and understanding of operation during higher flows. The construction completion is estimated to be October 2025. Once complete, the UV system operation will need to be optimized to account for higher flows and variation in before UV data. The period from October 2025 through April 30, 2026 does not allow for operation of the equipment through a beach season or one full disinfection season which is the time when operational and weather changes are at their greatest. The best outcome is to allow for one year of operation and optimization to ensure that the best quality effluent is consistently achieved. The dates above assume that there are no delays. The Compliance Schedule Section of the Guidance clearly states, "Facilities should be able to either meet their final effluent limits or determine that construction upgrades will be necessary after one full disinfection season of data collection and minor operational changes."

In a note, it further says, "full recreation season of data is necessary to evaluate the potential for variability throughout the season." Past data was obtained when other disinfection equipment was in use. The utility requests additional time to optimize operation to be certain we discharge the highest quality effluent with the lowest energy use as is possible. The guidance referenced in the section is BUREAU OF WATER QUALITY PROGRAM GUIDANCE WASTEWATER POLICY MANAGEMENT TEAM, implementation of Bacteria Water Quality Standards in Wastewater Permits, January 13,2021, EGAD Number: 3400-2021.-01.

**DNR Response to RWU Comment #5:** The compliance schedule will remain the same the same. The department is allowing an additional three months after the projected construction completion date to account for delays. The time between the 'construction completion' and the 'achieving compliance' date is consistent with other permittees and department guidance.

#### Comments Received from EPA or Other Government Agencies and Any Permit Changes as Applicable

No comments received.

As provided by s. 283.63, Stats., and ch. 203, Wis. Adm. Code, persons desiring further adjudicative review of this final determination may request a public adjudicatory hearing. A request shall be made by filing a verified petition for review with the Secretary of the Department of Natural Resources within 60 days of the date the permit was signed (see permit signature date above). Further information regarding the conduct and nature of public adjudicatory hearings may be found by reviewing ch. NR 203, Wis. Adm. Code, s. 283.63 Stats., and other applicable law, including s. 227.42, Stats.

Information on file for this permit action may be inspected and copied at either the above-named permit drafter's address or the above-named basin engineer's address, Monday through Friday (except holidays), between 9:00 a.m. and 3:30 p.m. Information on this permit action may also be obtained by calling the permit drafter at (414) 373-8523 or by writing to the Department. Reasonable costs (15 cents per page for copies and 7 cents per page for scanning) will be charged for copies of information in the file other than the public notice and fact sheet. Pursuant to the Americans with Disabilities Act, reasonable accommodation, including the provision of informational material in an alternative format, will be made to qualified individuals upon request.