

DOCKET NO. D-1987-008 CP-5

DELAWARE RIVER BASIN COMMISSION

**Municipal Authority of the Borough of Morrisville
Wastewater Treatment Plant
Morrisville Borough, Bucks County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an application submitted to the Delaware River Basin Commission (DRBC or Commission) on June 15, 2023 (Application), for renewal of the docket holder's existing wastewater treatment plant (WWTP) and its discharge. The Pennsylvania Department of Environmental Protection (PADEP) issued National Pollutant Discharge Elimination System (NPDES) Permit No. PA0026701 for this discharge.

The application was reviewed for continuation of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Bucks County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on August 7, 2024.

A. DESCRIPTION

- Purpose.** The purpose of this docket is to renew approval of the docket holder's existing 7.1 million gallons per day (mgd) WWTP and its discharge.
- Location.** The docket holder's WWTP is located at Riverview Avenue in the Borough of Morrisville, Bucks County, Pennsylvania. The WWTP will continue to discharge treated effluent to Water Quality Zone 2 of the Delaware River, at River Mile 133.0.

The location of the WWTP outfall in the Delaware River Watershed is as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001 (WWTP Overflow)	40° 12' 13"	74° 45' 58"
002 (WWTP Main Outfall)	40° 12' 14"	74° 45' 54"
Monitoring Point 201*	40° 12' 13"	74° 45' 58"

* MP201 is the monitoring point for the WWTP effluent discharge through Outfall No. 002

3. **Area Served.** The docket holder's WWTP will continue to serve Yardley and Morrisville Boroughs, as well as a portion of Lower Makefield Township, located in Bucks County, Pennsylvania. Additionally, up to 0.12 mgd of leachate (conditional upon TABLE A-1 in the FINDINGS section) from the GROWS, GROWS North, Tullytown, and Waste Management Fairless landfills are conveyed to the MMA WWTP for treatment via an existing pump station located on the site of the GROWS Landfill leachate treatment plant (LTP) in Falls Township, Bucks County, Pennsylvania. For the purpose of defining the Area Served, the Type of Discharge and the Service Area sections from the docket holder's Application are incorporated herein by reference, to the extent consistent with all other conditions contained in Section C. DECISION of this docket.

4. **Design Criteria.** The docket holder's 7.1 mgd WWTP utilizes an activated sludge treatment system with cloth filtration, followed by chlorine contact disinfection. Additionally, the docket holder utilizes a UNOX system that provides pure oxygen to the treatment process for the purpose of enhancing the biological removal of organics. The WWTP is designed to treat an annual average flow of 7.1 mgd, and a hydraulic design capacity of 8.7 mgd.

5. **Facilities.** The WWTP facilities consist of an aerated grit chamber with a screening device, an influent pumping station, a splitter box, four (4) primary settling tanks, four (4) aeration tanks, ten (10) final settling tanks, three (3) rapid sand filters, six (6) chlorine contact tanks, two (2) sludge thickening tanks, a mechanical sludge dewatering facility, and a UNOX system.

The WWTP features a 10 foot by 18-foot diversion chamber that diverts WWTP effluent to the 30-inch diameter WWTP outfall pipe (Outfall No. 002) under normal conditions. On days when flows meet or exceed 12 mgd, WWTP effluent overflows the weir within the diversion chamber and flow into an existing 54-inch diameter outfall pipe, which was the previous WWTP outfall (Outfall No. 001) prior to the construction of the 30" outfall (Outfall No. 002), and now serves as overflow only. This scenario is projected to occur rarely, approximately twice a year. The Outfall No. 002 pipe is submerged and extends approximately 450 feet into the Delaware River from the high water line to a point where water is approximately 5 feet deep at low tide. The outfall features a manifold on the end with three 8-inch diameter duckbill diffusers to provide mixing.

Several of the project facilities are located in the 100-year floodplain. The Commission's *Flood Plain Regulations* (FPR) has requirements for treatment facilities in the flood plain; however, the FPR only apply in the non-tidal portion of the Delaware River Basin. Since the project WWTP is located in the tidal portion of the basin, the FPR do not apply to the project WWTP.

Wasted sludge will continue to be hauled off-site for disposal in accordance with the NPDES Permit No. PA0026701.

6. **Water Withdrawals.** The potable water supply in the project service area is provided by surface water intake on the Delaware River owned and operated by the docket holder. The docket holder's water withdrawal is described in detail in Docket No. D-1974-072 CP-1, which was approved on April 23, 1975.

7. **NPDES Permit / DRBC Effluent Requirements.** NPDES Permit No. PA0026701 issued by the PADEP includes final effluent limitations for the project discharge to surface waters classified by the PADEP as supporting migratory fishes (MF) and warm water fishes (WWF). EFFLUENT TABLES C-1 & C-2 included in Section C. DECISION condition C.1. of this docket, contain effluent requirements for DRBC parameters that must be met as a condition of this approval. Effluent requirements for MP201 are based on a discharge rate of 7.1 mgd.

8. **Relationship to the Comprehensive Plan.** The docket holder's WWTP was originally included in the Comprehensive Plan as part of Addendum No. 1. Expansions to the WWTP were approved by the Commission in Dockets No. D-1965-064 CP-1, D-1969-065 CP-1, and D-1987-008 CP-1. Docket Nos. D-1987-008 CP-2, D-1987-008 CP-3, and D-1987-008 CP-4 continued approval of the WWTP in the Comprehensive Plan. The table below reflects the approval date for each addendum/docket. Issuance of this docket will renew and continue approval of the WWTP in the Comprehensive Plan.

DOCKET NO.	APPROVAL DATE
Addendum No. 1	July 25, 1962
D-1965-064 CP-1	June 23, 1965
D-1969-065 CP-1	August 23, 1972
D-1987-008 CP-1	September 22, 1987
D-1987-008 CP-2	July 13, 2011
D-1987-008 CP-3	December 5, 2012
D-1987-008 CP-4	December 12, 2018

B. FINDINGS

The docket holder applied to renew approval of their existing 7.1 mgd WWTP and its discharge.

Landfill Leachate Acceptance

The previous docket approval (D-1987-008 CP-4) approved the docket holder to accept up to 0.12 mgd of landfill leachate for treatment at the WWTP. A pilot program to increase the amount of leachate from 0.06 mgd to 0.12 mgd was approved by the DRBC Executive Director on June 7, 2015 and was performed by the docket holder between 2015 and 2018. The pilot program demonstrated that the ability of the WWTP to meet effluent limits, specifically TDS and true color, is dependent on 1) the amount of leachate received; and 2) the amount of WWTP inflow. During periods of low inflow to the WWTP, the amount of leachate that the WWTP can treat and discharge (and continue to meet effluent limits) is reduced, as compared to periods of high inflow, when increased amounts of leachate can be treated and discharged from the WWTP while meeting effluent limits. The following sliding scale indicates the amount of leachate to be received at different inflows to the WWTP:

TABLE A-1: Leachate Flow Acceptance Sliding Scale

WWTP FLOW (MGD)	LEACHATE FLOW (GPD)
2.75	45,000
3	50,000
3.25	55,000
3.5	60,000
3.75	70,000
4	75,000
4.25	85,000
4.5	95,000
4.75	100,000
5	105,000
5.25	110,000
5.5	115,000
5.75	120,000
>5.75	120,000

Based on the results of the pilot program and calculations performed by the docket holder, the discharge appears able to meet the effluent limits contained in this docket when the facility operates according to the above sliding scale. This docket (D-1987-008 CP-5) continues approval for the WWTP to receive up to 0.12 mgd of landfill leachate from the above sources, when operating according to the sliding scale in TABLE A-1. The docket holder is required to maintain a record of daily leachate flows received, and corresponding WWTP flows, and to submit a report to the DRBC annually summarizing the daily flows. This report may be submitted along with the DRBC annual effluent monitoring report (AEMR) form, by January 31 of each year (See Section C. DECISION Condition C.1.).

Acute Whole Effluent Toxicity

DRBC Docket No. D-1987-008 CP-3 approved a regulatory mixing zone (RMZ) for acute whole effluent toxicity (WET) criteria consisting of three semi-circles with a radius of 29.5 feet centered on each of the outfall diffuser ports for Outfall No. 002, and a corresponding acute toxicity dilution factor of 6.4 to 1. Because of overlapping of the RMZ of each port, the total RMZ area is less than 4,100 ft² (sum of three semi-circles). The RMZ and dilution factor are continued in this docket (D- 1987-008 CP-5). See Section C. DECISION Condition C.3. of this docket.

CBOD₂₀ Wasteload Allocation

The Commission's *Water Quality Regulations (WQR)* provide for the allocation of the stream assimilative capacity where waste discharges would otherwise result in exceeding such capacity. The DRBC determined in the late 1960's that discharges to the Delaware Estuary would be limited to a total of 322,000 lbs/day of carbonaceous biochemical (first stage) oxygen demand (later noted as CBOD₂₀). In accordance with the Regulations, the assimilative capacity of each Delaware Estuary zone minus a reserve was originally allocated in 1968 among the individual dischargers based upon the concept of uniform reduction of raw waste in a zone (Zones 2, 3, 4 and 5). The totals and percent reduction for each zone are given in Table 1 of the Commission's *Status of CBOD₂₀ Wasteload Allocations* (Revised October 1, 2000). The MMA WWTP is located in Zone 2 at River Mile 133.0. Zone 2 is allocated at 18,600 lbs/day of CBOD₂₀ and has a zone reduction requirement of CBOD₂₀ of 88.5%. Compliance with the 88.5% Zone 2 reduction requirement can be demonstrated by meeting the 88.5% CBOD₅ removal requirement included in EFFLUENT TABLE C-2 in Section C of this docket.

The Commission approved a CBOD₂₀ allocation for the WWTP of 1,916 lbs/day in Docket No. D-1987-008 CP-3, approved on December 5, 2012. The CBOD₅ effluent load limit is calculated as the CBOD₂₀ allocation divided by the CBOD₂₀/CBOD₅ ratio of 1.47:1, which was developed during the review of Docket No. D-1987-008 CP-1. This docket continues the allocation of up to 1,916 lbs/day of CBOD₂₀ for the existing facility. Compliance with the CBOD₂₀ allocation can be demonstrated by meeting the CBOD₅ effluent load limit of 1,302 lbs/day.

2. Other

The nearest surface water intake of record for public water supply is located on the Delaware River approximately 11 River Miles downstream of the docket holder's WWTP and is operated by the Lower Bucks County Joint Municipal Authority.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The effluent limits in the NPDES Permit conform with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge that meets the effluent requirements as set forth in the Commission's *Water Quality Regulations (WQR)*.

C. DECISION

Effective on the approval date for Docket No. D-1987-008 CP-5 below, the project described in Docket No. D-1987-008 CP-4 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-1987-008 CP-5; Docket No. D-1987-008 CP-4 is terminated and replaced by Docket No. D-1987-008 CP-5; and the project and the appurtenant facilities described in Section A "DESCRIPTION" of this docket shall be included in the Comprehensive Plan. The project and appurtenant facilities as described in Section A of this docket are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

Monitoring and Reporting

1. The docket holder shall comply with the requirements contained in the EFFLUENT TABLES below. The docket holder shall submit the required monitoring results electronically to the DRBC Project Review Section via email aemr@drbc.gov on the **Annual Effluent Monitoring Report Form** located at this web address: <https://www.nj.gov/drbc/programs/project/docket-app-info.html#3>. In addition to the AEMR, the docket holder is required to annually report the results of the weekly effluent flow, TDS load (in lbs/day), and TDS concentration (in mg/l) monitoring at Outfall Nos. 001 and 002. The monitoring results shall be submitted annually, absent any observed limit violations, by January 31. If a DRBC effluent limit is violated, the docket holder shall submit the result(s) to the DRBC within 30 days of the violation(s) and provide a written explanation that states the action(s) the docket holder has taken to correct the violation(s) and protect against any future violations. The following average monthly effluent limits are among those listed in the NPDES Permit and meet or are more stringent than the effluent requirements of the DRBC.

EFFLUENT TABLE C-1: DRBC Parameters Included in NPDES Permit For MP201

MP201 (Delaware River Water Quality Zone 2)		
PARAMETER	LIMIT	MONITORING
pH (Standard Units)	6 to 9 at all times	As required by NPDES Permit
Total Suspended Solids	30 mg/l	As required by NPDES Permit
CBOD ₅ (at 20° C)*	22 mg/l 1,302 lbs/day	As required by NPDES Permit
Ammonia Nitrogen	20 mg/l	As required by NPDES Permit
Fecal Coliform	200 colonies per 100 ml as a geo. avg.	As required by NPDES Permit
Total Dissolved Solids (TDS)**	1,000 mg/l (Avg. Monthly) 1,500 mg/l (Daily Max)	As required by NPDES Permit
True Color (Pt-Co Scale)	100 Pt-Co Units (Avg. Monthly)	As required by NPDES

MP201 (Delaware River Water Quality Zone 2)		
PARAMETER	LIMIT	MONITORING
	150 Pt-Co Units (Instant Max)	Permit
Total Copper	0.067 mg/l	As required by NPDES Permit
Total Zinc	0.594 mg/l	As required by NPDES Permit
Chronic WET Ceriodaphnia Survival	Monitor & Report	As required by NPDES Permit
Chronic WET Ceriodaphnia Reproduction	Monitor & Report	As required by NPDES Permit
Chronic WET Pimephales Survival	Monitor & Report	As required by NPDES Permit
Chronic WET Pimephales Growth	Monitor & Report	As required by NPDES Permit

* EFFLUENT TABLE C-2 below contains a CBOD₅ minimum percent removal of 88.5%

** Section C. DECISION Condition C.6.

The following monitoring requirements and average monthly effluent limits are for DRBC parameters not listed in the NPDES Permit.

EFFLUENT TABLE C-2: DRBC Parameters Not Included in NPDES Permit For MP201

MP201 (Delaware River Water Quality Zone 2)		
PARAMETER	LIMIT	MONITORING
CBOD ₅ (at 20° C)	88.5% Minimum Removal	Weekly
Acute WET LC50 Stat 96 hr (P. promelas)	Monitor & Report	Quarterly
Acute WET LC50 Stat 48 hr (C. dubia)	Monitor & Report	Quarterly

Other Conditions

2. The discharge of wastewater shall not increase the ambient temperatures of the receiving waters by more than 5°F above the average 24-hour temperature gradient displayed during the 1961-1966 period, nor shall such discharge result in stream temperatures exceeding 86°F.

3. This docket continues approval of a regulatory mixing zone (RMZ) for acute WET criteria consisting of semi-circles with a radius of 29.5 feet centered on each of the three port of Outfall No. 002 diffuser. This docket approves an acute toxicity dilution factor of 6.4 to 1.

4. The docket holder is permitted to receive up to 0.12 mgd of landfill leachate from the GROWS, GROWS North, Tullytown, and Waste Management Fairless landfills, for treatment and discharge from the MMA WWTP. The amount of leachate allowed to be received is conditional upon the quantity of inflow to the WWTP, in accordance with TABLE A-1 Sliding Scale in the FINDINGS section of this docket. The docket holder is required to maintain a record of daily leachate flows received, corresponding inflows to the WWTP, and WWTP effluent flows, and to submit a report to the DRBC annually summarizing the daily flows by January 31 of each year.
5. Except as otherwise authorized by this docket, if the docket holder seeks relief from any limitation based upon a DRBC water quality standard or minimum treatment requirement, the docket holder shall apply for approval from the Executive Director or for a docket revision in accordance with Section 3.8 of the *Compact* and the *Rules of Practice and Procedure*.
6. The docket holder may request permission from the Executive Director to perform specific conductance monitoring in lieu of TDS monitoring. The request shall be made in writing and shall include information that supports the effluent specific correlation between TDS and specific conductance. Upon review, the Executive Director may modify the docket to allow specific conductance monitoring in lieu of TDS monitoring.
7. Section 2.3.10 of the Commission's *Rules of Practice and Procedure (RPP)* (18 C.F.R. 401.41), limiting the Commission's approval to three years in the absence of an expenditure of substantial funds by the project sponsor in reliance on the approval, is hereby waived for good cause shown in accordance with Section 2.9.3 (18 C.F.R. 401.123) of the same regulations. This approval shall expire on the expiration date set forth below unless prior thereto the docket holder has applied to the Commission to renew or extend this approval.
8. The docket holder is responsible for timely submittal to the DRBC of a docket renewal application on the appropriate application form including the appropriate docket application filing fee (see 18 C.F.R. 401.43) at least 6 months in advance of the docket expiration date set forth below. The docket holder will be subject to late filed renewal surcharges in the event of untimely submittal of its renewal application, whether DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. If a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below, the terms and conditions of the current docket will remain fully effective and enforceable pending the grant or denial of the application for docket approval.
9. The docket holder is permitted to treat and discharge wastewater as set forth in the Area Served Section of this docket, which incorporates by reference the Type of Discharge and Service Area sections of the docket holder's Application to the extent consistent with all other conditions of this section. Any expansion beyond that included in Section A.3. Area Served is subject to DRBC review and approval in accordance with Section 3.8 of the Compact.

10. In accordance with the Commission's regulations at 18 C.F.R. Part 440, the docket holder is prohibited from discharging wastewater from high volume hydraulic fracturing ("HVHF") or HVHF-related activities to waters or land within the Basin. The docket holder is further prohibited from discharging hydraulic fracturing wastewater, whether treated or untreated, from sources within or outside the Basin, without obtaining the Commission's prior review and express approval in the form of a revised docket. Violation of this or any condition of this docket approval may result in enforcement, including the risk of financial penalties, pursuant to Section 14.17 of the Delaware River Basin Compact and Section 2.7.8 (18 CFR 401.98) of the Commission's Rules of Practice and Procedure.

11. The facility and operational records shall be available at all times for inspection by the DRBC.

12. The facility shall be operated at all times to comply with the requirements of the Commission's *WQR*.

13. If at any time the receiving treatment plant proves unable to produce an effluent that is consistent with the requirements of this docket approval, no further connections shall be permitted until the deficiency is remedied.

14. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

15. The docket holder shall discharge wastewater in such a manner as to avoid injury or damage to fish or wildlife and shall avoid any injury to public or private property.

16. No sewer service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

17. The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, to ensure proper control, use and management of the water resources of the Basin.

18. The docket holder shall be subject to applicable DRBC regulatory program fees, in accordance with duly adopted DRBC resolutions and/or regulations (see 18 C.F.R. 401.43).

19. This approval is transferable by request to the DRBC Executive Director provided that the project purpose and area served approved by the Commission in this docket will not be materially altered because of the change in project ownership. The request shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 C.F.R. 401.43).

20. The docket holder shall request a name change of the entity to which this approval is issued if the name of the entity to which this approval is issued changes its name. The request for name change shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 C.F.R. 401.43).

21. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

22. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the *Rules of Practice and Procedure (RPP)*. In accordance with Section 15.1(p) of the *Delaware River Basin Compact*, cases and controversies arising under the *Compact* are reviewable in the United States district courts.

BY THE COMMISSION

APPROVAL DATE: September 5, 2024

EXPIRATION DATE: September 30, 2030