pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0052167**
Facility Type	**Municipal**	APS ID	**576879**
Major / Minor	**Major**	Authorization ID	**1422103**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Wind Gap Municipal Authority**	Facility Name	**Wind Gap Municipal Authority WWTP**
Applicant Address	578 Abel Colony Road	Facility Address	578 Abel Colony Road
	Wind Gap, PA 18091-9506		Wind Gap, PA 18091-9506
Applicant Contact	Terry Miklas	Facility Contact	Terry Miklas
Applicant Phone	(610) 863-9266	Facility Phone	(610) 863-9266
Client ID	61463	Site ID	238851
Ch 94 Load Status	Not Overloaded	Municipality	Plainfield Township
Connection Status	-	County	Northampton
Date Application Received	December 19, 2022	EPA Waived?	No
Date Application Accepted	December 19, 2022	If No, Reason	Major Facility
Purpose of Application	Renewal of NPDES permit.		

Summary of Review

The applicant is requesting renewal of their NPDES permit to discharge up to 1.0 MGD of treated sewage from the Wind Gap Municipal Authority WWTP into Tributary 4638 to Little Bushkill Creek, a high quality - cold water & migratory fish (HQ-CWF, MF) receiving stream in state water plan basin 01-F (Jacoby – Bushkill Creeks). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than the designated use.

Technology-based effluent limitations for pH, Total Suspended Solids, and Fecal Coliform are carried over from the previous permit. Water quality-based effluent limitations (WQBELs) for Dissolved Oxygen and $CBOD_5$ are carried over from the previous permit.

WQM 7.0 recommended slightly more stringent limitations for Ammonia-Nitrogen. Since eDMR results show the permittee can meet the new limitations, they will come into effect upon permit issuance. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA as well as the "measure" tool. Drainage areas were delineated using USGS's StreamStats Interactive Map and elevations were obtained using the elevation profile feature of StreamStats (see Watershed Information attachment). The low flow yield (LFY) of 0.128 cfs/mi^2 was carried over from the previous renewal since there's no nearby stream gages to obtain current data from.

The TRC Calculation Spreadsheet recommended more stringent limitations for TRC. eDMR results indicate average TRC levels in the discharge are close to the new limitations. The new limitations will come into effect three years after the permit effective date and yearly compliance milestones are included in Part C until then. Please note: The TRC Calculation Spreadsheet was not run during the previous renewal (effective date 7/1/2018); the limitations in that permit were carried over from the permit issued in 2012.

Approve	Deny	Signatures	Date
X		Brian Burden, E.I.T. / Project Manager	April 18, 2024
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Program Manager	4-18-24

Summary of Review

The permittee may conduct site-specific studies to update the modeling inputs of the TRC Calculation Spreadsheet. As an example, if the permittee finds the chlorine demand of the stream or discharge are higher than the default values of 0.3 mg/L (stream) or 0 mg/L (discharge), the TRC limitations would become less stringent.

DEP's Toxics Management Spreadsheet (TMS) was used to model the pollutant group sampling results submitted with the permit renewal application. The following recommendations were made:

- Total Boron: The TMS recommended monitoring/reporting requirements for Total Boron. The maximum reported discharge concentration was 200 µg/L and the most stringent WQBEL is 1,955 µg/L. Monitoring requirements are generally established when the maximum reported discharge concentration is greater than 10% of the WQBEL. Since the maximum discharge concentration is very close to the arbitrary 10% value, monitoring/reporting requirements will not be included during this permit term.

- Total Copper: The TMS recommended limitations for Total Copper (12.2 µg/L monthly average, 18.4 µg/L daily max). The maximum reported discharge concentration was 22 µg/L. Since it appears the permittee can't meet the new limitations upon permit issuance, the limitations will come into effect 3 years after the permit effective date and the permittee will be required to conduct a Toxics Reduction Evaluation (TRE) for Total Copper. Yearly milestones are included in Part C.III until the limitations come into effect.

- Free Cyanide: The TMS recommended monitoring/reporting requirements for Free Cyanide. The maximum reported discharge concentration was 1.8 µg/L and the most stringent WQBEL is 4.89 µg/L. Since the maximum reported discharge concentration is 37% of the WQBEL (greater than 10%), quarterly monitoring/reporting requirements are added to the permit for Free Cyanide.

- Total Zinc: The TMS recommended limitations for Total Zinc (128 µg/L monthly average, 156 µg/L daily max). The maximum reported discharge concentration was 170 µg/L. Since it appears the permittee can't meet the new limitations upon permit issuance, the limitations will come into effect 3 years after the permit effective date and the permittee will be required to conduct a Toxics Reduction Evaluation (TRE) for Total Zinc. Yearly milestones are included in Part C.III until the limitations come into effect.

- Chloroform: The TMS recommended limitations for Chloroform (6.96 µg/L monthly average, 10.9 µg/L daily max). The maximum reported discharge concentration was 4.9 µg/L. Since it appears the permittee can meet the new limitations, they will come into effect on the permit effective date.

- Dichlorobromomethane: The TMS recommended monitoring/reporting requirements for Dichlorobromomethane. The maximum reported discharge concentration was 0.77 µg/L and the most stringent WQBEL is 2.74 µg/L. Since the maximum reported discharge concentration is 28% of the WQBEL (greater than 10%), quarterly monitoring/reporting requirements are added to the permit for Dichlorobromomethane.

All monitoring frequencies for parameters with limitations are consistent with the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (doc. No. 362-0400-001). Composite sampling requirements are updated to 24-hour composites. Note: The minimum measurement frequency for Dissolved Oxygen is updated from 1/week to 1/day during this renewal.

Monitoring/reporting requirements for influent for BOD_5 and TSS are carried over from the previous permit as well as annual nutrient monitoring/reporting. Monthly monitoring/reporting for E. Coli as added to the permit as per current guidance.

The previously issued permit required annual Whole Effluent Toxicity (WET) testing of the effluent at Outfall 001. Over the past 5 years there have been two endpoint failures for chronic water flea reproduction: August 1, 2023 (no re-test has been reviewed) and August 28, 2018 (re-test on September 19, 2018 passed). Based on paragraph A.1.b. of DEP's WET guidance document (SOP No. BPNPSM-PMT-031), reasonable potential exists for one or more toxic pollutants which have not been limited in the existing NPDES permit (see TMS discussion above) and it's believed that establishing limitations for the pollutants will help control the toxicity. Therefore, the inclusion of WET limitations is postponed until further WET data is reviewed. Quarterly WET testing, at a minimum, is required in the renewed permit during the first year of permit coverage. Annual WET testing will then be required through the rest of the permit term, at a minimum. The standard Part C condition for WET testing without limitations is carried over from the previous renewal.

Summary of Review

The parameters of concern for stormwater Outfall 002 have been updated to reflect the current requirements in Appendix J of the latest PAG-03 general permit. Semiannual monitoring/reporting is required for: Total Suspended Solids, Oil & Grease, pH, Chemical Oxygen Demand, Total Nitrogen and Total Phosphorus.

There was no DRBC docket found for this facility on DRBC's interactive map of docket holders. The facility does not receive hauled-in wastes. A compliance check performed on April 16, 2024 did not reveal any open and unresolved violations for the client.

One industrial user discharges into the WWTP collection system, GAF Premium Products, Inc., which discharges approximately 3,000 gpd of process wastewater and 700 gpd of sanitary wastewater. They are not considered a significant industrial user or categorical industry.

Sludge use and disposal description and location(s): The permit renewal application states 199 dry tons of sewage sludge was disposed of at Grand Central Sanitary Landfill in the previous year.

WQM Modeling.pdf TRC Calculation.pdf TMS PA0052167.pdf Watershed Information.pdf

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.0
Latitude	40º 49' 49"	Longitude	-75º 17' 39"
Quad Name	Wind Gap	Quad Code	1243
Wastewater Description:	Sewage Effluent		

Receiving Waters	Tributary 4638 to Little Bushkill Creek (HQ-CWF, MF)	Stream Code	4638
NHD Com ID	26066436	RMI	2.3
Drainage Area	2.68 mi^2	Yield (cfs/mi^2)	0.128
Q_{7-10} Flow (cfs)	0.34	Q_{7-10} Basis	Previous Modeling
Elevation (ft)	651	Slope (ft/ft)	0.014
Watershed No.	1-F	Chapter 93 Class.	HQ-CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Siltation		
Source(s) of Impairment	Unknown Source, Urban Runoff / Storm Sewers		
TMDL Status	-	Name	-

Background/Ambient Data		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	BCWSA New Hope		
PWS Waters	Delaware River	Flow at Intake (cfs)	857 (using same LFY and 6,700 mi^2 drainage area)
PWS RMI	73.3	Distance from Outfall (mi)	~52

Treatment Facility Summary

Treatment Facility Name: Wind Gap Municipal Sewer Authority

WQM Permit No.	Issuance Date
4887437	4/29/1988

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Chlorine	1.0

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.0	2,085	Not Overloaded	Digested	Hauled to Landfill

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.0
Latitude 40º 49' 49" **Longitude** -75º 17' 39"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45.0	Average Weekly	133.102(b)(2)	92a.47(a)(2)
	60.0	IMAX	-	-
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	6.0	Minimum	Previous modeling
Total Residual Chlorine	0.04	Average Monthly	2024 TRC Calculation Spreadsheet
	0.13	IMAX	
$CBOD_5$ May 1 – Oct 31	10.0	Average Monthly	Previous modeling
	15.0	Average Weekly	
	20.0	IMAX	
$CBOD_5$ Nov 1 – Apr 30	20.0	Average Monthly	
	30.0	Average Weekly	
	40.0	IMAX	
Ammonia-N May 1 – Oct 31	1.8	Average Monthly	2024 WQM 7.0
	3.6	IMAX	
Ammonia-N Nov 1 – Apr 30	5.4	Average Monthly	
	10.8	IMAX	
Total Copper	0.012	Average Monthly	2024 Toxics Management Spreadsheet
	0.018	Daily Maximum	
Total Zinc	0.128	Average Monthly	2024 Toxics Management Spreadsheet
	0.156	Daily Maximum	
Chloroform	0.006	Average Monthly	2024 Toxics Management Spreadsheet
	0.010	Daily Maximum	

Comments: The TRC, Total Copper, and Total Zinc limitations will come into effect 3 years after the permit effective date.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Annually throughout the permit term

The dilution series used for the tests was: 100%, 92%, 83%, 42%, and 21%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 83%.

Summary of Four Most Recent Test Results

TST Data Analysis

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
August 2023	Pass	Fail	Pass	Pass
August 2022	Pass	Pass	Pass	Pass
August 2021	Pass	Pass	Pass	Pass
August 2020	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☒ **YES** ☐ **NO**

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **1** Chronic Partial Mix Factor (PMFc): **1**

1. **Determine IWC – Acute (IWCa)**:

   $(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

   [(1 MGD x 1.547) / ((0.34 cfs x 1) + (1 MGD x 1.547))] x 100 = **82%**

   Is IWCa < 1%? ☐ **YES** ☒ **NO**

   Type of Test for Permit Renewal: **Chronic**

2. **Determine Target IWCc (If Chronic Tests Required)**

   $(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

   [(1 MGD x 1.547) / ((0.34 cfs x 1) + (1 MGD x 1.547))] x 100 = **82%**

3. **Determine Dilution Series**

   (NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

   Dilution Series = 100%, 91%, 82%, 41%, and 21%.

WET Limits

Has reasonable potential been determined? ☒ YES ☐ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

See WET discussion on page 2 above.

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Approve	Deny	Signatures	Date
X		Brian Burden, E.I.T. / Project Manager	April 18, 2024
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Program Manager	4-18-24