Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0203688**
Facility Type	**Municipal**	APS ID	**1121484**
Major / Minor	**Minor**	Authorization ID	**1499224**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**West Pike Run Township Municipal Authority**	Facility Name	**West Pike Run Township**
Applicant Address	P. O. Box 222	Facility Address	West Pike Run Twp
	Daisytown, PA 15427-0222		Daisytown, PA 15427-0222
Applicant Contact	William Molish	Facility Contact	William Molish
Applicant Phone	(724) 938-2248	Facility Phone	(724) 938-2248
Client ID	43680	Site ID	253735
Ch 94 Load Status	Not Overloaded	Municipality	West Pike Run Township
Connection Status	Dept. Imposed Connection Prohibitions	County	Washington
Date Application Received	August 29, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES renewal application from H&H Water Controls, Inc. on behalf of West Pike Run Township Municipal Authority (permittee) on August 29, 2024 for permittee's West Pike Run Township WWTP (facility). The facility is in West Pike Run Township, Washington County and the treated effluent is discharged into Pike Run in state watershed 19-C. The current permit will expire on March 31, 2025. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to the expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001. This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: E. Coli monitoring added

Sludge use and disposal description and location(s): Sludge is hauled off by licensed hauler.

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.

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Project Manager	November 7, 2024
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	11/08/2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.063
Latitude	40º 3' 9.88"	Longitude	-79º 56' 1"
Quad Name	California	Quad Code	1806
Wastewater Description:	Sewage Effluent		
Receiving Waters	Pike Run (TSF)	Stream Code	39888
NHD Com ID	99411058	RMI	4.12
Drainage Area	18.7 mi^2	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	**1.87**	Q_{7-10} Basis	Please see below
Elevation (ft)	842.67	Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION, SULFATE, TOTAL DISSOLVED SOLIDS (TDS)		
Source(s) of Impairment	AGRICULTURE, MUNICIPAL POINT SOURCE DISCHARGES, REMOVAL OF RIPARIAN VEGETATION, SOURCE UNKNOWN, STREAMBANK MODIFICATIONS/DESTABILIZATION		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.7	WQN0702, median from daily Jul-Sep, 1999-2019 years
Temperature (°C)	25	WQN0702, median from daily Jul-Sep, 1999-2019 years
Hardness (mg/L)	116	WQN0702, median from daily Jul-Sep, 1999-2019 years
Other:		

Nearest Downstream Public Water Supply Intake	Newell Boro Municipal Authority		
PWS Waters	Monongahela River	Flow at Intake (cfs)	
PWS RMI	50.93	Distance from Outfall (mi)	4.92

Changes Since Last Permit Issuance: None

Other Comments:

Streamflow:

USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on November 4, 2024) was utilized to determine the drainage area at discharge point. The StreamStats report shows the drainage area at the discharge point is 18.7 mi^2. Default yield of 0.1 cfs/mi^2, default Q_{1-10}:Q_{7-10} of 0.64, and Q_{30-10}:Q_{7-10} of 1.36 will be used in modeling.

Q_{7-10} runoff: 18.7 mi^2 * 0.1 cfs/mi^2 or 1.87 cfs.

PWS Intake:

The nearby downstream PWS intake is Newell Boro Municipal Authority on Monongahela River in Newell Borough, Fayette County at 50.93 RMI, which is approximately 4.92 miles downstream of discharge point. Due to the distance, dilution in the Monongahela River, and effluent limitations, it is expected that the discharge will not adversely impact the PWS intake.

Wastewater Characteristics:

A pH of 7.2 (daily eDMR data, 90th percentile, September 2024 through October 2023), default temperature of 25^{0}C (Default per 391-2000-007), and Hardness value of 100 mg/l (default) will be used for modeling, if needed.

Background data:
The nearby WQN station is WQN0702, on Monongahela River at Charleroi on SR2018 bridge, at RMI 40.3 mile. The calculated median stream pH, hardness, and temperature is 7.7 S.U., 116 mg/l, and 25°C, for the months July-September for reporting years 1999-2019.

Class A Wild Trout Stream:
The receiving stream, Pike Run, is a TSF stream. However, it is not a Class A wild trout stream.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The receiving streams are designated as Trout Stocking (TSF). No High-Quality stream or Exceptional Value water is impacted by this discharge; therefore, no Antidegradation Analysis is performed for the discharge.

Biosolids management:
Biosolids are hauled off by Liquid Asset Disposal, Inc.

Node 2 at confluence with Gorby Run at Pine Run RMI 1.53. Elevation 766.11 ft.

Treatment Facility Summary

Treatment Facility Name: West Pike Run Township Sewage Plant

WQM Permit No.	Issuance Date
6388428	March 3, 1989

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Gas Chlorine	0.063

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.063	153	Not Overloaded		

Changes Since Last Permit Issuance: None

Facility Information

West Pine Run Township Municipal Authority (permittee) owns a WWTP named West Pike Run Township Municipal Authority WWTP (facility), located in West Pike Run Township, Washington County. The facility is operated and maintained by H & H Water Controls, Inc.

Per the inspection report dated July 30, 2021, the facility is an extended aeration activated sludge plant consisting two trains, each having an aeration tank followed by a clarifier. The headworks utilizes a comminutor. The comminutor grinds the sewage influent prior to being introduced into the aeration tanks. The raw sewage influent is mixed with the concentrated RAS. This MLSS, after passing through the aeration tanks, is decanted in the clarifier. The final process consists of gas chlorination and flow measurement, and final discharge to the receiving stream.

Inspection summary:
07/30/2021: CEI conducted. No violation noted. No odors or any other indication of operations problems were visible.

Compliance History

DMR Data for Outfall 001 (from October 1, 2023 to September 30, 2024)

Parameter	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23
Flow (MGD) Average Monthly	0.02136	0.02132	0.01827	0.01466	0.01675	0.01937	0.01929	0.01433	0.01544	0.01322	0.02116	0.02993
Flow (MGD) Daily Maximum	0.04180	0.06800	0.04970	0.02840	0.02840	0.04180	0.02840	0.02840	0.02840	0.19830	0.04180	0.09000
pH (S.U.) IMIN	6.8	7.0	6.9	7.0	6.8	6.8	6.9	6.3	6.4	6.7	6.7	6.7
pH (S.U.) IMAX	7.2	7.2	7.3	7.2	7.2	7.3	7.7	7.2	7.3	7.1	7.1	7.2
DO (mg/L) IMIN	6.2	5.8	5.3	5.2	5.4	5.2	6.2	6.1	6.2	5.5	5.2	5.9
TRC (mg/L) Average Monthly	0.26	0.26	0.26	0.26	0.25	0.26	0.27	0.26	0.27	0.28	0.27	0.27
TRC (mg/L) IMAX	0.32	0.34	0.29	0.29	0.31	0.31	0.35	0.34	0.31	0.32	0.31	0.32
CBOD5 (lbs/day) Average Monthly	0.4	0.4	0.7	0.4	0.4	0.2	0.6	0.3	0.5	2.2	0.5	0.3
CBOD5 (mg/L) Average Monthly	2.7	2.3	2.7	2.9	2.4	2.0	2.4	3.2	2.7	2.0	2.4	2.0
CBOD5 (mg/L) IMAX	3.3	2.6	3.4	3.7	2.4	2.0	2.7	4.4	3.3	2.0	2.8	2.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	323.8	152.0	343.6	396.3	178.0	30.5	172.6	205.6	37.2	351.3	240.3	248.4
TSS (lbs/day) Average Monthly	0.8	0.8	1.1	0.7	0.8	0.6	1.2	0.4	1.0	0.4	1.0	0.8
TSS (mg/L) Average Monthly	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	302.0	196.0	423.0	700.0	220.0	49.0	771.0	234.0	31.0	326.0	178.0	150.0
TSS (mg/L) IMAX	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	14	108	2	1	1	1	1	1	10	3	1	1
Fecal Coliform (No./100 ml) IMAX	184	124	6	2	1	1	1	1	91	12	1	1
Total Nitrogen (mg/L) Daily Maximum										6.5		
Ammonia (mg/L) Average Monthly	0.1	0.2	3.1	0.3	3.2	0.6	0.3	0.2	0.2	1.9	0.2	0.2
Ammonia (mg/L) IMIN	0.1	0.3	3.7	0.4	6.0	1.0	0.4	0.2	0.3	2.6	0.2	0.2
Total Phosphorus (mg/L) Daily Maximum										3.8		

Existing Limits

These limits are applied at Outfall 001 for the period of April 1, 2020 through March 31, 2025:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	13.1	XXX	XXX	25	XXX	50	2/month	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids	15.8	XXX	XXX	30	XXX	60	2/month	Grab
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	23	XXX	46	2/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	Report	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .063
Latitude 40º 3' 9.00" **Longitude** -79º 56' 1.00"
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
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
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)
Fecal Coliform (5/1 – 9/30)	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)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

Model input data

The following data will be used for modeling, as needed:

- Discharge pH 7.2 (daily eDMR data, 90th percentile, September 2024 through October 2023)
- Discharge Temperature 25°C (Default per 391-2000-007)
- Discharge Hardness 100 mg/l (Default)
- Stream pH 7.7 (WQN0702, median from daily Jul-Sep, 1999-2019)
- Stream Temperature 25.0°C (WQN0702, median from daily Jul-Sep, 1999-2019)
- Stream Hardness 116 mg/l (WQN0702, median from daily Jul-Sep, 1999-2019)

The following two nodes were used in modeling:

Node 1: At the outfall 001 on Pine Run (39888)
Elevation: 842.67 ft (National Map-Advanced Viewer, 11/4/2024)
Drainage Area: 18.7 mi^2 (StreamStat Version 3.0, 11/4/2024)
River Mile Index: 4.12 (PA DEP eMapPA)
Low Flow Yield: 0.1 cfs/mi^2
Q_{7-10}: 1.87 cfs
Discharge Flow: 0.063 MGD

Node 2: At confluence with Gorby Run at Pine Run RMI 1.53
Elevation: 766.11 ft (National Map-Advanced Viewer, 11/4/2024)
Drainage Area: 26.2 mi^2 (StreamStat Version 3.0, 11/4/2024)
River Mile Index: 1.53 (PA DEP eMapPA)

Low Flow Yield: 0.1 cfs/mi^2
Discharge Flow: 0.0 MGD

WQM 7.0 Model
WQM 7.0 version 1.11 is a water quality model designed to assist DEP to determine appropriate effluent limits for $CBOD_5$, NH_3-N and DO. The model simulates two basic processes. In the NH_3-N module, the model simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model was utilized for this permit renewal by using Q_{7-10} and current background water quality levels of the stream.

NH_3-N
WQM 7.0 suggested NH_3-N limit of 23.0 mg/l as monthly average and 46.0 mg/l as IMAX limit during summer to protect water quality standards. These are the same as current permit and will be carried over. Monitoring is recommended for winter season.

CBOD5
WQM 7.0 suggests CBOD5 limit of 25 mg/l as AML which is the same as the existing permit and will be carried over. The mass based AML is 13.1 lbs./day, which is the same as the existing limit and will be carried over.

DO
WQM 7.0 suggests minimum DO of 4.0 mg/l which is the model input and same as existing limit. Existing limit will be carried over.

Toxics Management Spreadsheet (TMS)
Facilities with design flow less than 0.1 MGD aren't required to sample for Total Copper, Total Lead, Total Zinc, and any other parameters unless they are accepting flows from industrial or commercial users. No toxics modeling is conducted.

Nutrients monitoring:
PADEP's SOP BCW-PMT-033 recommends monitoring for Total Nitrogen and Total Phosphorus for facilities with design flow more than 2000-GPD, which is also supported by Pa Code 25 Ch. 92a.61. Current monitoring requirement will be continued.

Fecal Coliform:
The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml. These are existing requirements and will be carried over in this renewal.

E. Coli:
Pa Code 25 § 92a. 61 requires monitoring of E. Coli. DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends quarterly E. Coli monitoring for sewage dischargers with design flow between ≥0.05 MGD and <1.0 MGD. This requirement will be applied from this permit term.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). The mass based average monthly limit is calculated to be 15.8 lbs./day which is the same as were in existing permit and will be carried over.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The attached printout indicates that the existing limits are still protective and will be carried over.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Flow and Influent BOD_5 and TSS Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

Anti-Backsliding
Anti-backsliding prohibition is justified in sections where an exception is justified for the affected pollutant(s). For remaining pollutants, this prohibition isn't applicable since the proposed limits are at least as stringent as were in current permit.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	13.1	XXX	XXX	25.0	XXX	50.0	2/month	Grab
BOD5 Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
TSS	15.8	XXX	XXX	30.0	XXX	60.0	2/month	Grab
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E-Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	Report	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	23	XXX	46	2/month	Grab

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: At Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

StreamStat at Outfall 001

PA0203688 at Outfall 001

Region ID: PA
Workspace ID: PA20241105013647213000
Clicked Point (Latitude, Longitude): 40.05283, -79.93328
Time: 2024-11-04 20:37:10 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	18.7	square miles
ELEV	Mean Basin Elevation	1145	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	18.7	square miles	2.26	1400
ELEV	Mean Basin Elevation	1145	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.759	ft^3/s	43	43
30 Day 2 Year Low Flow	1.27	ft^3/s	38	38
7 Day 10 Year Low Flow	0.296	ft^3/s	66	66
30 Day 10 Year Low Flow	0.507	ft^3/s	54	54
90 Day 10 Year Low Flow	0.89	ft^3/s	41	41

Low-Flow Statistics Citations

StreamStat at Node 2

PA0203688 at node 2

Region ID: PA
Workspace ID: PA20241105014529684000
Clicked Point (Latitude, Longitude): 40.06691, -79.90801
Time: 2024-11-04 20:45:53 -0500

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	26.2	square miles
ELEV	Mean Basin Elevation	1133	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	26.2	square miles	2.26	1400
ELEV	Mean Basin Elevation	1133	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.11	ft^3/s	43	43
30 Day 2 Year Low Flow	1.82	ft^3/s	38	38
7 Day 10 Year Low Flow	0.447	ft^3/s	66	66
30 Day 10 Year Low Flow	0.744	ft^3/s	54	54
90 Day 10 Year Low Flow	1.28	ft^3/s	41	41

WQM 7.0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19C	39888	PIKE RUN	**4.120**	842.67	18.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.70	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
W Pine Run WWTP	PA0203688	0.0630	0.0630	0.0630	0.000	25.00	7.20

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	23.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19C	39888	PIKE RUN	**1.530**	766.11	26.20	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.70	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19C	39888	PIKE RUN

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
4.120	1.87	0.00	1.87	.0975	0.00560	.577	20.96	36.32	0.16	0.973	25.00	7.66
Q1-10 Flow												
4.120	1.20	0.00	1.20	.0975	0.00560	NA	NA	NA	0.13	1.230	25.00	7.63
Q30-10 Flow												
4.120	2.54	0.00	2.54	.0975	0.00560	NA	NA	NA	0.19	0.825	25.00	7.67

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	4		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19C	39888	PIKE RUN

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
4.120	W Pine Run WW	4.94	46	4.94	46	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
4.120	W Pine Run WW	.86	23	.86	23	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
4.12	W Pine Run WWTP	25	25	23	23	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19C	39888	PIKE RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
4.120	0.063	25.000	7.656
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
20.960	0.577	36.320	0.163
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.14	0.329	1.14	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.033	9.742	Tsivoglou	4
Reach Travel Time (days)			
0.973			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.097	3.02	1.03	7.54
0.195	2.90	0.93	7.54
0.292	2.78	0.84	7.54
0.389	2.67	0.76	7.54
0.487	2.57	0.69	7.54
0.584	2.47	0.62	7.54
0.681	2.37	0.57	7.54
0.778	2.27	0.51	7.54
0.876	2.18	0.46	7.54
0.973	2.10	0.42	7.54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	39888	PIKE RUN

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
4.120	W Pine Run WWTP	PA0203688	0.063	CBOD5	25		
				NH3-N	23	46	
				Dissolved Oxygen			4

TRC Spreadsheet

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

1.87	= Q stream (cfs)	0.5	= CV Daily
0.063	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	6.140	1.3.2.iii	WLA cfc =	5.978
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	2.288	5.1d	LTA_cfc =	3.475

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.635	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)