pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0083836**
Facility Type	**Non-Municipal**	APS ID	**950064**
Major / Minor	**Minor**	Authorization ID	**1422264**

Applicant and Facility Information

Applicant Name	**Pine Run Management LLC**	Facility Name	**Pine Run MHP**
Applicant Address	2846 Main Street, Suite 12A	Facility Address	1880 Pine Run Road
	Morgantown, PA 19543-0677		Abbottstown, PA 17301-9723
Applicant Contact	James Perano	Facility Contact	James Perano
Applicant Phone	(610) 286-0490	Facility Phone	(610) 286-0490
Client ID	338199	Site ID	445322
Ch 94 Load Status	Not Overloaded	Municipality	Hamilton Township
Connection Status	No Limitations	County	Adams
Date Application Received	December 29, 2022	EPA Waived?	Yes
Date Application Accepted	January 5, 2023	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

The PA Department of Environmental Protection (DEP or Department) received an NPDES permit renewal application from Pine Run Management, LLC, located in Hamilton Township, Adams County on December 29, 2022. The permit expires on June 30, 2023.

The average annual design flow and hydraulic design capacity is 0.04 MGD and the organic loading capacity is 8.34 lbs BOD_5/day. The treated effluent is discharged to an UNT to Conewago Creek. The contributing flow is 100% from the MHP.

The WQM Part II No. 0190401 A-1 amendment was issued on 5/3/2016, and 0190401 T-1 ownership transferred was issued on 6/29/2018.

Sludge use and disposal description and location(s): N/A because sludge hauling by Smiths Septic's contractor.

Changes from the previous permit: The E. Coli. monitoring and report requirements will add to the proposed permit.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted. A public notice of the draft permit will be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	May 12, 2023
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	May 26, 2023

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.04
Latitude	39º 55' 11.42"	Longitude	-76º 59' 18.00"
Quad Name	Abbottstown	Quad Code	1930
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Conewago Creek (WWF)	Stream Code	08303 (secondary)
NHD Com ID	57470973 / 57470779 (secondary)	RMI	0.11
Drainage Area	0.15 mi.^{2}	Yield (cfs/mi^2)	0.005
Q_{7-10} Flow (cfs)	0.0008	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	420.33	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	WWF
Existing Use	none	Existing Use Qualifier	
Exceptions to Use	none	Exceptions to Criteria	
Assessment Status	See 303d Listed Streams note below		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Wrightsville Boro Water System, York County		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	28.51 miles	Distance from Outfall (mi)	Approximate 54.0 miles

Changes Since Last Permit Issuance: none

Drainage Area
The discharge is to Unnamed tributaries to Conewago Creek at RMI 0.11 miles. A drainage area upstream of the discharge is estimated to be 0.15 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow
According to StreamStats, the point of first use has a Q_{7-10} of 0.0008 cfs and a drainage area of 0.15 mi.^{2}, which results in a Q_{7-10} low flow yield of 0.005 cfs/mi.^{2}. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

Q_{7-10} = 0.0008 cfs
Low Flow Yield = 0.0008 cfs / 0.15 mi.^{2} = 0.005 cfs/mi.^{2}
Q_{30-10} = 1.36 * 0.0008 cfs = 0.001 cfs
Q_{1-10} = 0.64 * 0.0008 cfs = 0.0005 cfs

The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 0.0008 cfs / [0.04 MGD * (1.547 cfs/MGD)] = 0.013:1

303d Listed Streams
The discharge from this facility is in UNT to Conewago Creek at 0.11 RMI which is not listed in eMapPA and stream health couldn't be assessed. The secondary receiving stream is Conewago Creek which is attaining Recreational use and Aquatic Life. The secondary stream is not on 303d list.

Conewago Creek
25 Pa. Code § 93.9o classifies Conewago Creek as Warm Water & Migratory Fishes (WWF & MF) surface water. Based on the 2022 Integrated Report, Conewago Creek, assessment unit IDs 11762 & 18584, is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Public Water Supply
The nearest downstream public water supply intake is for Wrightsville Boro Water System York County on the Susquehanna River, approximately 54.0 miles downstream of this discharge. Considering distance and dilution, the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Pine Run MHP				
WQM Permit No.	**Issuance Date**			
0190401 A-1	05/03/2016			
0190401 T-1	06/26/2018			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Activated Sludge	Ultraviolet	0.04
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.04	8.34	Not Overloaded	Aerobic Digestion	Land Application

Changes Since Last Permit Issuance: none

Other Comments:
Per DEP's recent visit to the WWTP on June 30, 2021, the treatment facility consists of the following units:

- One basket rack
- Four EQ tanks
- Eight aeration tanks
- Four clarifiers
- One chlorine contact tank, without chlorine addition
- One UV unit
- Two sludge holding tanks

A Point of First Use (POFU) survey was conducted on May 7, 1990 which stated, "*The predominance of the stonefly and the Mayfly which emerge in the spring indicate that the stream may be intermittent or at least has extremely low or interstitial summer flows…Point of First Use is at the Point of Discharge."*

Chemical used**:**
Aluminum Sulfate (Alum) is used to remove Phosphorus.

Compliance History	
Summary of DMRs:	A summary of past 12-month DMRs is presented on page 4 & 5.
Summary of Inspections:	**6/30/2021:** Mr. Bettinger, DEP's WQS, conducted compliance evaluation inspection. There were no violations noted during inspection. Recommendations were to ensure copies of all required DMR supplemental forms are retained on-site for a minimum of 3 years and recommend exploring options for an emergency power source. The field test results were within the permit limits. **6/8/2020:** Mr. Bettinger, DEP's WQS, conducted administrative inspection. There were no violations noted during inspection.
Other Comments	There are five (5) open violations against the permittee or applicant. - 4/7/2023 (1): NPDES-Violation of effluent limits in Part A of permit. - 8/4/-10/24/2022 & 2/10-5/3/2023 (4)-Safe Drinking Water- Exceeded the Chemical average maximum contaminant level.

Other Comment:

- Ammonia concentration (mg/L) of monthly average on December 2022 was exceeded 5.38 mg/L, while permit limit of 4.5 mg/L period of November 1 – April 30.

Compliance History

DMR Data for Outfall 001 (from April 1, 2022 to March 31, 2023)

Parameter	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22
Flow (MGD) Average Monthly	0.0078	0.0059	0.008	0.011	0.01	0.006	0.006	0.007	0.007	0.007	0.01	0.008
Flow (MGD) Daily Maximum	0.0312	0.017	0.02	0.052	0.03	0.013	0.023	0.012	0.019	0.013	0.043	0.022
pH (S.U.) Daily Minimum	7.17	7.07	6.93	7.07	6.64	6.96	5.82	6.07	6.42	6.99	7.08	6.89
pH (S.U.) Daily Maximum	7.98	8.24	8.13	7.96	8.31	7.69	8.29	8.37	7.79	8.48	7.86	7.93
DO (mg/L) Daily Minimum	7.75	7.25	7.45	7.17	6.33	7.72	6.92	6.65	5.86	6.79	7.12	6.98
CBOD5 (mg/L) Average Monthly	< 2.6	2.4	< 3.2	< 2.9	< 2.4	< 2.4	< 2.6	< 2.4	< 2.4	< 2.7	< 2.4	< 2.6
TSS (mg/L) Average Monthly	8.0	5.0	7.0	5.0	4.0	3.0	2.0	1.0	4.0	6.0	1.0	6.0
Fecal Coliform (No./100 ml) Geometric Mean	11	1120	49	264	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1
Fecal Coliform (No./100 ml) IMAX	33	1120	> 2420	1553	< 1	1	2	< 1	3	< 1	< 1	2
UV Intensity (mW/cm²) Daily Minimum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.9	0.2	0.1
Nitrate-Nitrite (mg/L) Average Quarterly	< 29.4			< 39.4			< 41.4			< 34.4		
Nitrate-Nitrite (lbs) Total Quarterly	< 129			< 31			< 86			< 189		
Total Nitrogen (mg/L) Average Quarterly	29			39			41			34		
Total Nitrogen (lbs) Total Quarterly	127			30			85			187		
Total Nitrogen (lbs) Total Annual							352					
Ammonia (mg/L) Average Monthly	< 0.6	< 0.1	< 0.18	5.38	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.43
Ammonia (mg/L) Average Quarterly	< 0.18			< 0.1			< 0.1			2.43		
Ammonia (lbs) Total Quarterly	< 0.4			< 0.1			< 0.2			5.0		

Ammonia (lbs) Total Annual							18					
TKN (mg/L) Average Quarterly	< 0.5			< 0.5			< 0.5			< 0.5		
TKN (lbs) Total Quarterly	< 2			< 0.4			< 1			< 3		
Total Phosphorus (mg/L) Average Quarterly	0.26			0.33			0.11			0.32		
Total Phosphorus (lbs) Total Quarterly	1			0.3			0.2			2		
Total Phosphorus (lbs) Total Annual							4					

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.04
Latitude 39º 55' 11.42" **Longitude** -76º 59' 18.00"
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)

Comments: Total Residual Chlorine is not applied to this facility.

Water Quality-Based Limitations

Ammonia (NH_3-N):
NH_3N calculations are based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached WQM 7.0 computer model of the stream:

*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	20°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	25ºC	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)

Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 1.91 mg/L as monthly average (AML) and 3.82 mg/L as instantaneous maximum (IMAX) limit during summer to protect water quality standards. However, the existing limits of 1.5 mg/L as AML and 3.0 mg/L as IMAX are more stringent and will remain in the proposed permit. Winter limits are calculated by multiplying summer limits with a factor of 3. The minimum monitoring frequency will also remain the same as 2/month.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. The IMAX limit is 50.0 mg/L. These values are the same as are in existing permit. The minimum monitoring frequency will remain the same as 2/month.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(1).

UV:
The UV system daily monitor and report the UV light intensity (mW/cm^2) will remain in the proposed permit.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30.0 mg/L average monthly and 60.0 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 minimum monitoring frequency will remain the same as 2/month.

Dissolved Oxygen (D.O.):
The D.O. goal is 6.0 mg/L. However, a minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. It is recommended that this limit be maintained in the proposed permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) No. BCW-PMT-033, version 1.9 revised March 22, 2021, and has been applied to other point source dischargers throughout the state.

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.

E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 1.9 revised March 22, 2021, a routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/year will be included in the permit to be consistent with the recommendation from this SOP.

Toxics:
DEP utilizes a Toxics Management Spreadsheet (last modified on March 2021 ver. 1.3) to facilitate calculations necessary for completing a reasonable potential analysis and determining WQBELs for toxic pollutants. The effluent testing information renewal application (page # 7) indicates that there are no toxic pollutants of concern.

Total Phosphorus:
Phosphorus limitations are based on the Department's Implementation Guidance for Section 96.5 Phosphorus Discharges to Free-flowing Streams, dated 10/27/97 (ID No. 391-2000-018). Total phosphorus loading from this discharge would be 8.34 x 10 mg/l x 0.04 MGD or 3.336 lbs/day. Using the equation that was documented in EPA's Chesapeake Bay Management Report, Total P @ Y = Total P x 0.99^{Y}, where Y = stream miles to PA-MD line, the actual loading to the critical part of the Susquehanna River would be 1.46 lbs/day at an estimated distance of 82.2 miles. This loading represents 1.46 lbs/day ÷ 3,814 lbs/day or 0.038% of the total phosphorus loading of all discharges in the Lower Susquehanna River Basin. According to the above phosphorus guidance, phosphorus removal will be required if this percentage is > 0.25%. Therefore, since 0.038% < 0.25%, phosphorus limitations will not be required.

Chesapeake Bay Strategy:

Phase 2 WIP identifies Pine Run Management, LLC WWTP as a non-significant Phase 5 facility. DEP's SOP mentioned that for facilities with design flows > 2,000 GPD will include monitoring, at a minimum, for Total Nitrogen and Total Phosphorus, with a monitoring frequency specified in DEP's technical guidance. Therefore, 1/quarter TN species (such as Ammonia-Nitrogen, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, and Total Nitrogen) and TP monitoring requirements will remain in the proposed permit. The yearly calculation "report" for Ammonia—N, TN & TP will remain in the proposed permit.

Total Dissolved Solids (TDS):
Minor facilities with design flow <0.1 MGD are not required to report effluent TDS and constituents.

WETT:
Minor facilities and facilities without a formal EPA approved pretreatment program are exempted from WETT.

Anti-Backsliding
The proposed limits are at least as stringent as are in existing permit; therefore, anti-backsliding rule is not applicable.

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. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

WQM 7.0:

The following data were used in the attached computer model (WQM 7.0) of the stream:

• Discharge pH	7.0	(Default)
• Discharge Temperature	20°C	(Default per 391-2000-013)
• Stream pH	7.0	(Default per 391-2000-013)
• Stream Temperature	25°C	(Default per 391-2000-013)

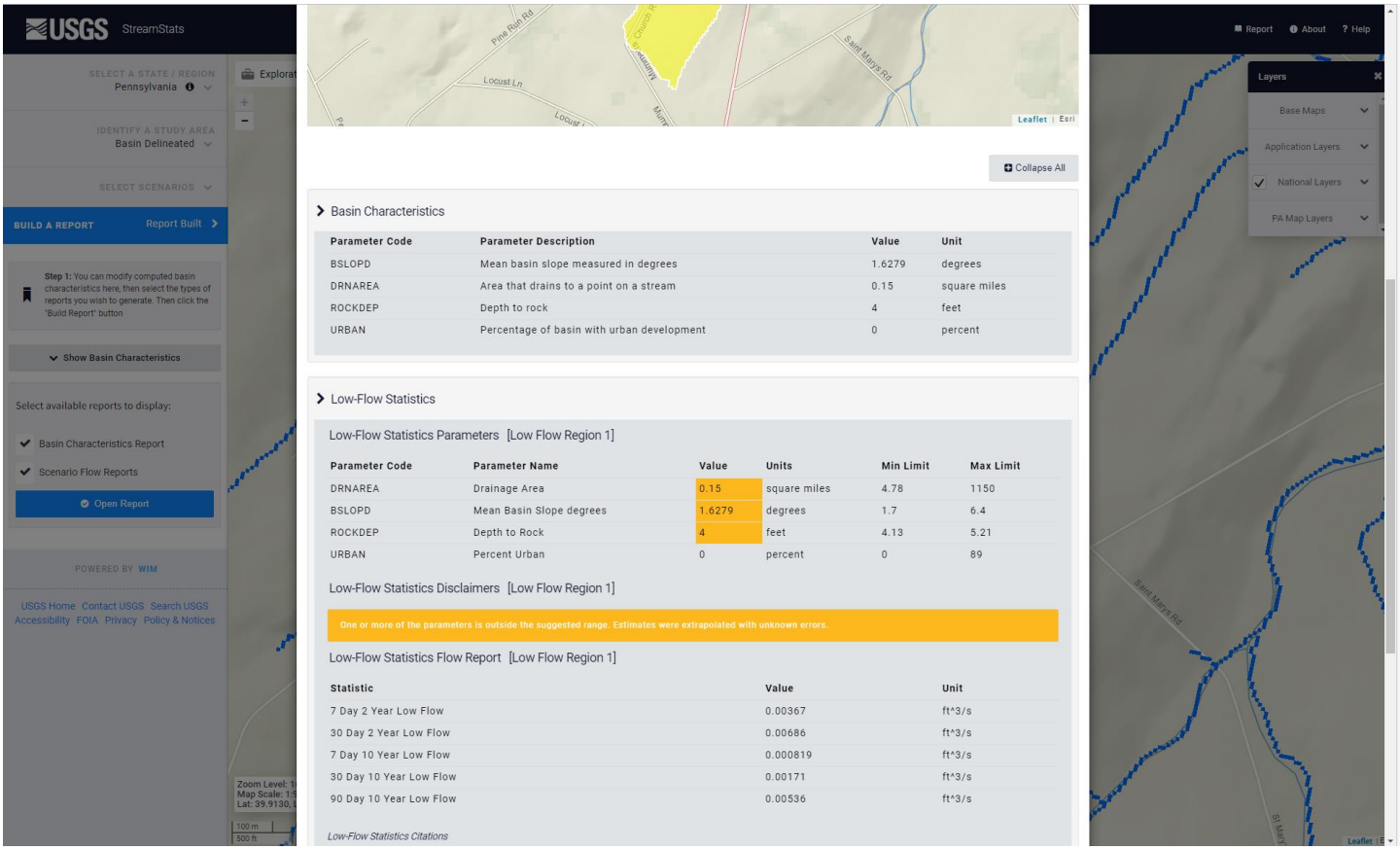
The following two nodes were used in modeling:

Node 1: At Outfall 001 on UNT to Conewago Creek (08303)

Elevation:	420.93 ft (USGS)
Drainage Area:	0.15 mi.^{2} (USGS StreamStats)
River Mile Index:	0.11 (PA DEP eMapPA)
Low Flow Yield:	0.005 cfs/mi.^{2} (calculated)
Discharge Flow:	0.04 MGD

Node 2: At the confluence with Conewago Creek

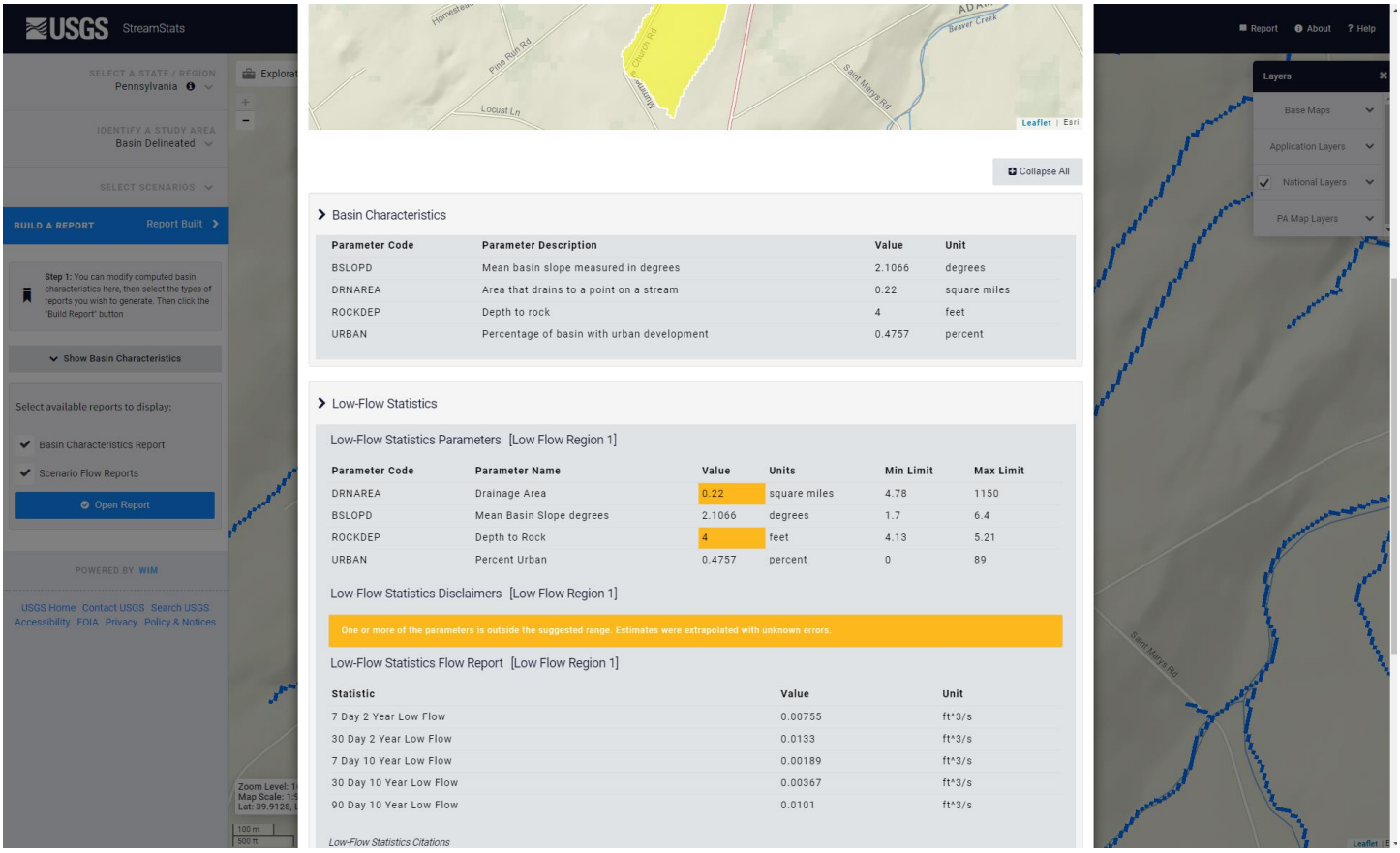
Elevation:	395.42 ft (USGS National Map Advanced viewer, accessed 3/8/2018)
Drainage Area:	0.22 mi.^{2} (USGS StreamStats)
River Mile Index:	0.001 (PA DEP eMapPA)
Low Flow Yield:	0.005 cfs/mi.^{2}
Discharge Flow:	0.00 MGD

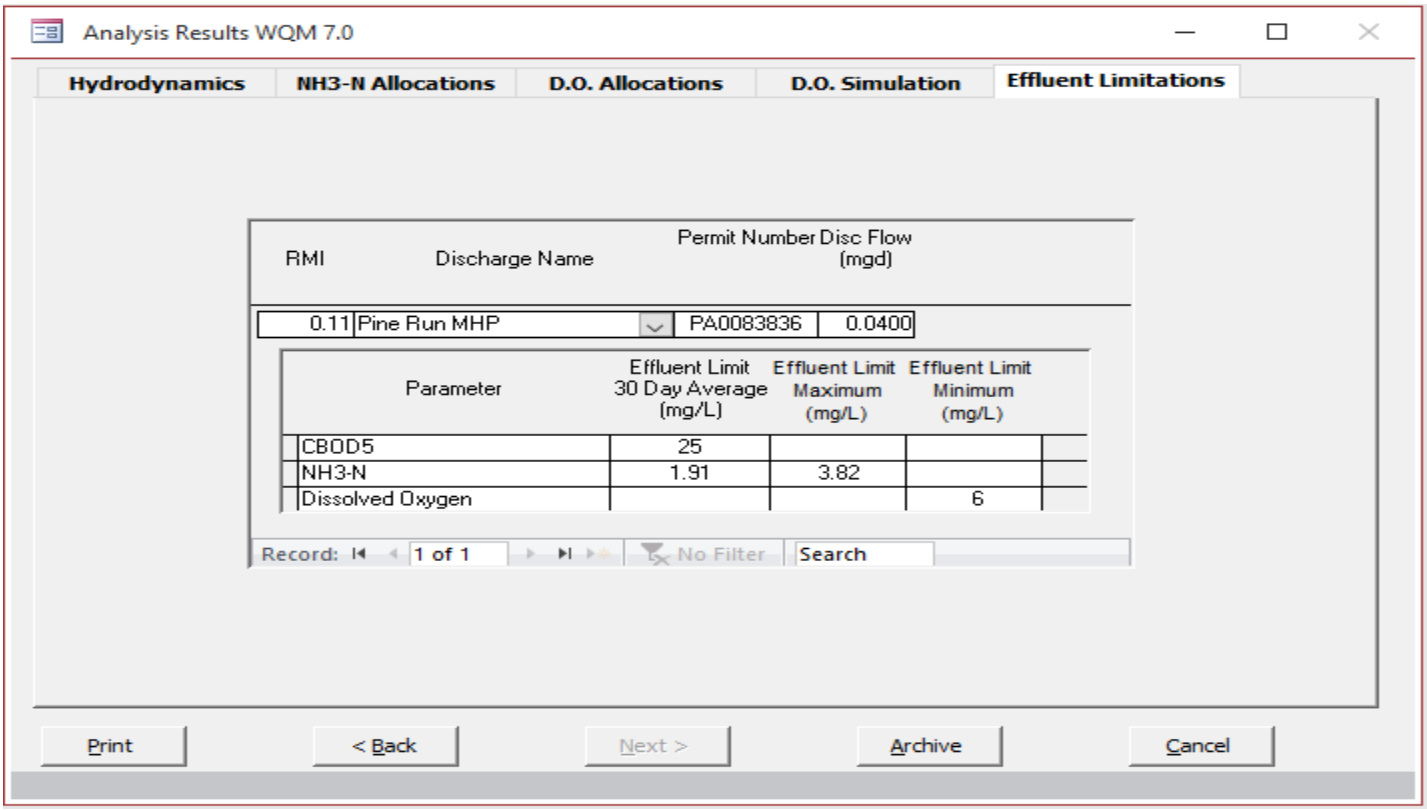


Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	1.6279	degrees
DRNAREA	Area that drains to a point on a stream	0.15	square miles
ROCKDEP	Depth to rock	4	feet
URBAN	Percentage of basin with urban development	0	percent

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.15	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	1.6279	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4	feet	4.13	5.21
URBAN	Percent Urban	0	percent	0	89

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00367	ft^3/s
30 Day 2 Year Low Flow	0.00686	ft^3/s
7 Day 10 Year Low Flow	0.000819	ft^3/s
30 Day 10 Year Low Flow	0.00171	ft^3/s
90 Day 10 Year Low Flow	0.00536	ft^3/s


USGS StreamStats
Pennsylvania
Basin Delineated
BUILD A REPORT
Report Built
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 2.1066 | degrees
DRNAREA | Area that drains to a point on a stream | 0.22 | square miles
ROCKDEP | Depth to rock | 4 | feet
URBAN | Percentage of basin with urban development | 0.4757 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 0.22 | square miles | 4.78 | 1150
BSLOPD | Mean Basin Slope degrees | 2.1066 | degrees | 1.7 | 6.4
ROCKDEP | Depth to Rock | 4 | feet | 4.13 | 5.21
URBAN | Percent Urban | 0.4757 | percent | 0 | 89
Low-Flow Statistics Disclaimers [Low Flow Region 1]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 1]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.00755 | ft^3/s
30 Day 2 Year Low Flow | 0.0133 | ft^3/s
7 Day 10 Year Low Flow | 0.00189 | ft^3/s
30 Day 10 Year Low Flow | 0.00367 | ft^3/s
90 Day 10 Year Low Flow | 0.0101 | ft^3/s
Low-Flow Statistics Citations
Layers
Base Maps
Application Layers
National Layers
PA Map Layers


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
0.11
Pine Run MHP
PA0083836
0.0400
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
1.91
3.82
Dissolved Oxygen
6
Record: 1 of 1
No Filter
Search
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rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07F	8303	CONEWAGO CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Avg. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
0.110	Pine Run MHP	PA0083836	0.040	CBOD5	25		
				NH3-N	1.91	3.82	
				Dissolved Oxygen			6

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07F	8303	CONEWAGO CREEK

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
0.110	Pine Run MHP	16.71	16.84	16.71	16.84	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
0.110	Pine Run MHP	1.88	1.91	1.88	1.91	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5 Baseline (mg/L)	CBOD5 Multiple (mg/L)	NH3-N Baseline (mg/L)	NH3-N Multiple (mg/L)	Dissolved Oxygen Baseline (mg/L)	Dissolved Oxygen Multiple (mg/L)	Critical Reach	Percent Reduction
0.11	Pine Run MHP	25	25	1.91	1.91	6	6	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
07F	8303	CONEWAGO CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.110	0.040	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
2.204	0.351	6.283	0.081
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
24.72	1.498	1.352	0.703
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
8.027	26.021	Owens	6
Reach Travel Time (days)			
0.082			

Subreach Results

Travel time (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.008	24.42	1.87	6.22
0.016	24.12	1.86	6.36
0.025	23.82	1.85	6.51
0.033	23.53	1.84	6.65
0.041	23.24	1.83	6.71
0.049	22.96	1.82	6.78
0.058	22.68	1.81	6.85
0.066	22.40	1.80	6.91
0.074	22.12	1.79	6.98
0.082	21.85	1.78	7.00

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q5-10 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	6		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07F	8303	CONEWAGO CREEK

RM	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.110	0.00	0.00	0.00	.0619	0.04433	.351	2.2	6.28	0.08	0.082	20.06	7.00
Q1-10 Flow												
0.110	0.00	0.00	0.00	.0619	0.04433	NA	NA	NA	0.08	0.082	20.04	7.00
Q30-10 Flow												
0.110	0.00	0.00	0.00	.0619	0.04433	NA	NA	NA	0.08	0.082	20.08	7.00

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RM	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07F	8303	CONEWAGO CREEK	0.110	420.93	0.15	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	0.0035	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	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
Pine Run MHP	PA0083836	0.0400	0.0400	0.0400	0.000	20.00	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RM	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07F	8303	CONEWAGO CREEK	0.001	395.42	0.22	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	0.0035	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	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
Pine Run MHP	PA0083836	0.0000	0.0000	0.0000	0.000	20.00	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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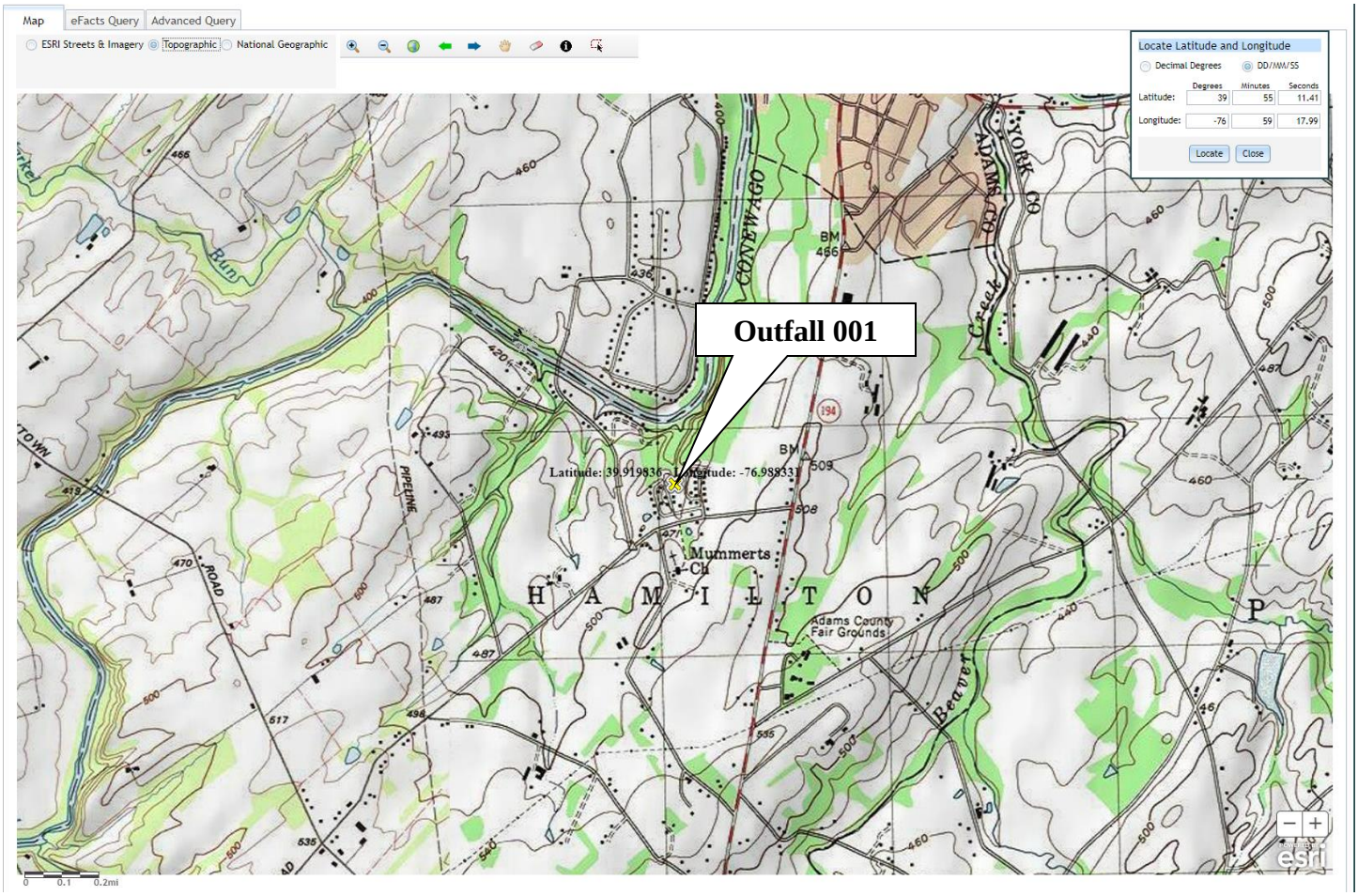
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CONEWAGO
ADAMS CO
YORK CO
Beaver Creek
PIPELINE
ROAD
Run
BM 466
BM 509
394
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Existing Effluent Limitations and Monitoring Requirements

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	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
D.O.	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
UV Intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25.0	XXX	50	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9	2/month	24-Hr Composite

Existing Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Quarterly Average	Maximum	Instant. Maximum		
Ammonia--N	Report Total quarterly	Report	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Kjeldahl--N	Report Total quarterly	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite as N	Report Total quarterly	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report Total quarterly	Report	XXX	Report	XXX	XXX	1/quarter	Calculation
Total Phosphorus	Report Total quarterly	Report	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite

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" (362-0400-001), 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	Daily Maximum	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3.0	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	2/month	24-Hr Composite

Compliance Sampling Location:

Other Comments:

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" (362-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Total Quarterly	Annual	Monthly	Quarterly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/quarter	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location:

Other Comments:

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, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033
☐	Other: