Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088676**
Facility Type	**Non-Municipal**	APS ID	**339129**
Major / Minor	**Minor**	Authorization ID	**1471880**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Creek View Community**	Facility Name	**Creek View MHP**
Applicant Address	493 Potato Road	Facility Address	493 Potato Road
	Carlisle, PA 17015-8938		Carlisle, PA 17015-8938
Applicant Contact	Justin Neidlinger	Facility Contact	Justin Neidlinger
Applicant Phone	(717) 226-2876	Facility Phone	(717) 226-2876
Client ID	148005	Site ID	538110
Ch 94 Load Status	Not Overloaded	Municipality	Upper Frankford Township
Connection Status	No Limitations	County	Cumberland
Date Application Received	February 5, 2024	EPA Waived?	Yes
Date Application Accepted	February 26, 2024	If No, Reason	
Purpose of Application	NPDES Renewal.		

Summary of Review

Creek View Community has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on October 25, 2019 and became effective on November 1, 2019. The permit will expire on October 31, 2024.

Based on the review, it is recommended that the permit be drafted.

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
X		*Jinsu Kim* Jinsu Kim / Environmental Engineering Specialist	October 23, 2024
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	November 8, 2024
X		Maria D. Bebenek Maria D. Bebenek, P.E. / Program Manager	November 8, 2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.015
Latitude	40° 13’ 34.00”	Longitude	77° 20’ 21.00”
Quad Name	Plainfield	Quad Code	1727
Wastewater Description:	Treated Sewage		
Receiving Waters	Conodoguinet Creek	Stream Code	10194
NHD Com ID	56406831	RMI	49.32
Drainage Area	305	Yield (cfs/mi^2)	0.1596
Q_{7-10} Flow (cfs)	48.68	Q_{7-10} Basis	USGS gage no. 01570000
Elevation (ft)	447	Slope (ft/ft)	
Watershed No.	7-B	Chapter 93 Class.	WWF, MF
Existing Use	None	Existing Use Qualifier	None
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	N/A	Name	N/A
Ambient pH (SU)	8.4	WQN no. 271 (90th percentile from 2004 – 2014 data)	
Ambient Temperature (°F)	23.4	WQN no. 271 (90th percentile from 2004 – 2014 data)	
Discharge pH (SU)	7.6	2010 – 2014 DMR data (90th percentile)	
Ambient Temperature (°F)	17.9	DEP NPDES Compliance Inspection Reports	
Nearest Downstream Public Water Supply Intake		Carlisle Borough in North Middleton Township	
PWS Waters	Conodoguinet Creek	Flow at Intake (cfs)	48
PWS RMI	35.95	Distance from Outfall (mi)	13.37

Drainage Area
The discharge is to Conodoguinet Creek at RMI 49.32. A drainage area upstream of the point of discharge is estimated to be 305 sq.mi. using USGS StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
Based on the updated Q7-10 of the USGS gage (i.e., 69.3 cfs) on Conodoguinet Creek which is found in the latest USGS streamflow report[1]. This USGS gage is located on Conodoguinet Creek near Hogestown, PA, about 350 ft. below the PA American Water Company intake. Considering the withdrawal rate of 5.716 cfs from the intake, a low-flow yield is adjusted as follows:

Yield: (69.3 cfs + 5.716 cfs) / 470 sq.mi = 0.1596 cfs/sq.mi.
Q7-10 @ Outfall 001 = 0.1596 cfs/sq.mi. x 305 sq.mi = 48.68 cfs
Q1-10 / Q7-10 = 63.1 cfs / 69.3 cfs = 0.91
Q30-10 / Q7-10 = 78.3 cfs / 69.3 cfs = 1.13

Other Comments: The discharge is located in a stream segment listed as attaining uses; therefore, no TMDL is considered during this review. Considering the distance and dilution, the discharge is not expected to affect the nearest downstream water supply intake.

[1] Stuckey, M.H., and Roland, M.A., 2011, Selected Streamflow statistics for streamgage locations in and near Pennsylvania: U.S. Geological Survey Scientific Investigations Report 2011 – 1070, 88p.

Treatment Facility Summary				
Treatment Facility Name: Creek View Mobile Home Community WWTP				
WQM Permit No.	**Issuance Date**			
2102410	February 2, 2004			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Extended Aeration	Calcium Hypochlorite	0.015
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.06 (see comment)	24.99	Not Overloaded	Sludge Holding	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: When the construction of this facility was proposed in 2003, the project engineer designed the system in order to construct the facility in three (3) phases with the first phase capacity being 0.015 MGD, phase two adding another 0.015 MGD and the final phase adding 0.030 MGD (a total of 0.060 MGD). The construction and operation of only first phase was approved in 2004 which was designed to serve 42 units in the mobile home community. This phase one treatment system, according to the design engineer's report, is as follows:

> Comminutor/bar screen → Flow equalization → Aeration → Clarifier → Sand filters (2) → Chlorination → Dechlorination → Discharge

Tablets are added for both chlorination and dechlorination (i.e., Sanuril 115 Calcium Hypochlorite & D-CHLOR sodium sulfite). Soda ash and ferric chloride are also injected in the flash mix tank for coagulation/flocculation and phosphorous removal, respectively. Two (2) rapid sand filters are also installed for additional phosphorous removal process. A sludge holding tank is provided for storage prior to offsite disposal.

It is noteworthy that although phase one (0.015 MGD) was proposed and approved, permit requirements in both original and reissued NPDES permits were developed based on the design flow of 0.060 MGD since a flow of 0.060 MGD will be the final capacity. Permit requirements for this renewal will also be developed based on the flow of 0.060 MGD.

Compliance History	
Summary of DMRs:	A summary of past 12-month is presented on page 4 of this fact sheet.
Summary of Inspections:	04/26/2024: DEP conducted a routine inspection and noted that the treatment plant appears to be operating properly. No significant violations are identified at the time of inspection. 04/24/2020: DEP conducted a routine inspection and no significant violations are identified at the time of inspection.
Other Comments:	Since the last permit reissuance, the facility had effluent violations occurred in July 2021, specifically associated with fecal coliform and total phosphorus. DEP's database shows that there is no open violation associated with this permittee or facility.

Effluent Data

DMR Data for Outfall 001 (from September 1, 2023 to August 31, 2024)

Parameter	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23
Flow (MGD) Average Monthly	0.0044	0.01635	0.00447	0.00483	0.00473	0.00489	0.00493	0.00537	0.0047	0.00437	0.0043	0.00426
Flow (MGD) Daily Maximum	0.00843	0.3787	0.00667	0.0079	0.00626	0.00771	0.00707	0.00838	0.00754	0.00807	0.00641	0.00591
pH (S.U.) Instantaneous Minimum	7.0	7.38	7.21	7.2	6.73	6.73	7.34	7.26	7.16	6.37	7.4	7.07
pH (S.U.) Instantaneous Maximum	8.74	8.34	8.32	8.31	8.34	8.62	8.31	8.36	8.5	7.85	8.68	8.47
DO (mg/L) Daily Minimum	6.14	6.02	6.07	7.28	9.01	9.42	10.16	9.54	9.63	8.77	8.27	5.94
TRC (mg/L) Average Monthly	0.02	0.02	< 0.03	< 0.03	0.01	0.03	0.03	0.002	< 0.02	0.02	< 0.02	0.02
TRC (mg/L) Instantaneous Maximum	0.04	0.05	0.08	0.09	0.05	0.06	0.06	0.09	0.09	0.05	0.06	0.06
CBOD5 (mg/L) Average Monthly	4.7	3.9	13.5	7.0	6.0	9.9	11.7	7.4	8.1	9.7	9.2	5.4
TSS (mg/L) Average Monthly	2.2	< 2.0	< 2.0	2.4	2.6	2.4	< 2.0	4.5	< 2.0	< 2.0	2.0	2.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	3.1	< 1.0	7	2.0	5	5.0	< 1	7.0	4.0	< 1.0	9.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1.0	3.1	< 1.0	7	2.0	5	5.0	< 1	7.0	4.0	< 1.0	9.0
Nitrate-Nitrite (lbs/day) Average Monthly	2	44	0.9	1.0	1	2	1	2	2	0.8	1	1
Nitrate-Nitrite (mg/L) Average Monthly	49.6	41.5	27	36.7	41.2	30	28.4	38.6	42	28	39.5	40.7
Total Nitrogen (lbs/day) Average Monthly	2	3	1	2	1	2	1	2	2	0.9	1	1
Total Nitrogen (mg/L) Average Monthly	51.1	56.9	28.4	38.1	41.2	31.6	28.4	39.6	42.8	28.8	39.5	42.6
Ammonia (lbs/day) Average Monthly	< 0.003	0.005	0.0005	0.003	< 0.003	< 0.005	< 0.005	< 0.006	< 0.005	< 0.003	< 0.003	0.003

Parameter	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23
Ammonia (mg/L) Average Monthly	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	0.1
TKN (lbs/day) Average Monthly	0.07	0.05	0.04	0.05	0.09	0.07	0.07	0.06	0.04	0.2	< 0.02	0.06
TKN (mg/L) Average Monthly	1.5	1.21	1.46	1.37	2.45	1.69	1.94	1.06	0.88	0.83	< 0.7	1.9
Total Phosphorus (lbs/day) Average Monthly	0.02	0.03	0.03	0.05	0.01	0.01	0.01	0.27	0.2	0.006	0.01	1
Total Phosphorus (mg/L) Average Monthly	0.52	0.53	0.83	0.76	0.39	0.35	0.25	0.02	0.47	0.21	0.35	1.0

Existing Effluent Limits and Monitoring Requirements

The table below summarizes effluent limitations and monitoring requirements specified in the existing NPDES permit.

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 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.1	XXX	0.2	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	XXX	50	1/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60	1/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Kjeldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Phosphorus	Report	XXX	XXX	1.0	XXX	2	1/month	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .06
Latitude 40º 13' 34.00" **Longitude** -77º 20' 21.00"
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: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)
WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. The model showed that all existing limits for CBOD5 and NH3-N are still protective of water quality. No change is therefore recommended.

Total Residual Chlorine
Since chlorine is used for disinfection, Total Residual Chlorine (TRC) effluent levels must be regulated in accordance with 25 Pa Code §92a.48(b). DEP's TRC_CALC worksheet indicates that existing limits are still protective of water quality.

Toxics
DEP's NPDES permit application for minor sewages less than 0.1 MGD does not require sampling of toxics pollutants. As a result, no reasonable potential analysis for toxics pollutants has been performed for the upcoming permit renewal.

Best Professional Judgment (BPJ) Limitations

A minimum DO limit of 5.0 mg/L is recommended to ensure the facility continues to meet DO water quality criterion specified in 25 Pa. Code § 93.7(a). This requirement generally applies to all NPDES facilities discharging pollutants into waters of the Commonwealth.

Previously, an average monthly Total Phosphorus limit of 1.0 mg/L was established in the NPDES permit since the loading from this facility exceeded DEP's recommended contribution rate of 0.25% of the total loading for the Conodoguinet Creek watershed. This requirement will remain unchanged in the draft permit per federal anti-backsliding regulation found in 40 CFR § 122.44(l)(1).

The current TRC effluent limits of 0.1 mg/L (average monthly) and 0.2 (instantaneous maximum) are site-specific limits developed based on historical concerns on the Conodoguinet Creek watershed. For the basis of these limits, the previous fact sheet states as follows:

"The previous permit was written with a TRC AML of 0.10 mg/L on the basis of a letter received from Andrew Shiels who was in the nongame and Endangered Species Unit, Fish and Boat Commission at the time regarding his comment to not discharge TRC. PNDI indicated "a rare or protected freshwater mussel species is known from the vicinity of the proposed project site". Kathy Horvath, Water Supply, conducted a PNDI search in 1998 that did not result in a hit. She recently searched PNDI because of a community water supply application and got a hit. The limit of 0.10 mg/L will be continued".

As the permittee has been consistently meeting TRC limits, these limits will remain unchanged in the draft permit.

Additional Considerations

E. Coli Monitoring Requirement
DEP's SOP no. BCW-PMT-033 recommends a routine monitoring for E. Coli in all new and reissued sewage permits. As a result, an annual monitoring requirement for E. Coli will be included in the permit given the facility's design flow is greater than 0.002 MGD and less than 0.05 MGD (although a reasonable potential analysis was conducted using 0.06 MGD, the facility has been consistently discharging less than 0.01 MGD; thus, it is reasonable to assign the annual monitoring requirement at this time. In case the facility starts to receive more volume, DEP may assign a more frequent monitoring requirement for E. Coli).

Total Phosphorus and Total Nitrogen Monitoring
DEP's SOP no. BCW-PMT-033 recommends a routine monitoring of Total Phosphorus and Total Nitrogen for sewage facilities greater than 0.002 MGD. Also, DEP's current Chesapeake Bay Phase II Watershed Implementation Plan recommends monitoring of these nutrients. Consequently, existing monitoring requirements will be maintained in the permit.

Monitoring Frequency and Sample Type
All existing monitoring frequencies and samples types to be .

Flow Monitoring
The requirement to monitor the volume of effluent discharged from Outfall 001 is recommended per 40 CFR § 122.44(i)(1)(ii).

Anti-Degradation Requirement
The effluent limits for this discharge have been developed to ensure that existing instream 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 Stream
No Class A Wild Trout Fishery is impacted by this discharge.

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.

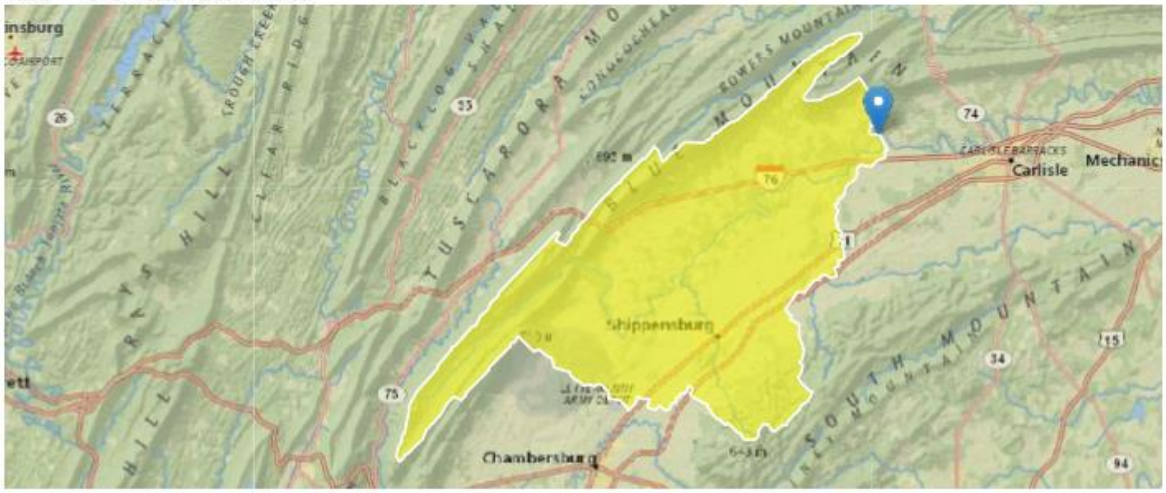
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.2	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	1/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	1/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
Nitrate-Nitrite	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Phosphorus	Report	XXX	XXX	1.0	XXX	2	1/month	8-Hr Composite
E. Coli (No. / 100 mL)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

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:

Attachments

StreamStats Report

Region ID: PA
Workspace ID: PA20241023165237032000
Clicked Point (Latitude, Longitude): 40.22607, -77.33862
Time: 2024-10-23 12:52:59 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	27.42	percent
DRNAREA	Area that drains to a point on a stream	305	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.97	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	305	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	1.97	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	27.42	percent	0	99

Low-Flow Statistics Flow Report [Low Flow Region 2]

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	47.1	ft^3/s	38	38
30 Day 2 Year Low Flow	58.1	ft^3/s	33	33
7 Day 10 Year Low Flow	28	ft^3/s	51	51
30 Day 10 Year Low Flow	34.8	ft^3/s	46	46
90 Day 10 Year Low Flow	46.1	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.24.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

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
07B	10194	CONODOGUINET CREEK	**49.320**	447.00	305.00	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	48.68	0.000	0.000	0.0	0.00	0.00	23.40	8.40	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
Creek View MHP	PA0088676	0.0600	0.0600	0.0600	0.000	18.00	7.60

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

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
07B	10194	CONODOGUINET CREEK	**46.890**	436.00	315.00	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	50.27	0.000	0.000	0.0	0.00	0.00	23.40	8.40	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	0.00	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
07B	10194	CONODOGUINET CREEK

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												
49.320	48.68	0.00	48.68	.0928	0.00086	.977	109.76	112.31	0.45	0.327	23.39	8.40
Q1-10 Flow												
49.320	44.30	0.00	44.30	.0928	0.00086	NA	NA	NA	0.43	0.344	23.39	8.40
Q30-10 Flow												
49.320	55.01	0.00	55.01	.0928	0.00086	NA	NA	NA	0.49	0.305	23.39	8.40

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	0.91	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.13	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07B	10194	CONODOGUINET 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
49.320	Creek View MHP	1.37	50	1.37	50	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
49.320	Creek View MHP	.33	25	.33	25	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)		
49.32	Creek View MHP	25	25	25	25	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07B	10194	CONODOGUINET CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
49.320	0.060	23.390	8.396
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
109.762	0.977	112.309	0.455
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.04	0.027	0.05	0.909
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.237	1.970	Tsivoglou	5
Reach Travel Time (days)			
0.327			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.033	2.04	0.05	7.75
0.065	2.04	0.04	7.75
0.098	2.04	0.04	7.75
0.131	2.04	0.04	7.75
0.163	2.03	0.04	7.75
0.196	2.03	0.04	7.75
0.229	2.03	0.04	7.75
0.261	2.03	0.04	7.75
0.294	2.03	0.04	7.75
0.327	2.02	0.04	7.75

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07B	10194	CONODOGUINET CREEK

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)
49.320	Creek View MHP	PA0088676	0.060	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

TRC_CALC

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	Input appropriate values in B4:B8 and E4:E7					
4	48.68	= **Q stream (cfs)**		**0.5**	= **CV Daily**	
5	0.06	= **Q discharge (MGD)**		**0.5**	= **CV Hourly**	
6	30	= **no. samples**		**1**	= **AFC_Partial Mix Factor**	
7	0.3	= **Chlorine Demand of Stream**		**1**	= **CFC_Partial Mix Factor**	
8	0	= **Chlorine Demand of Discharge**		**15**	= **AFC_Criteria Compliance Time (min)**	
9	**0.1**	= **BAT/BPJ Value**		**720**	= **CFC_Criteria Compliance Time (min)**	
	0	= **% Factor of Safety (FOS)**			**=Decay Coefficient (K)**	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	**1.3.2.iii**	WLA afc = 167.320		**1.3.2.iii**	WLA cfc = 163.117
12	PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373		**5.1c**	LTAMULT cfc = 0.581
13	PENTOXSD TRG	**5.1b**	LTA_afc= 62.348		**5.1d**	LTA_cfc = 94.828
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.100		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 0.327			

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)**