pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0044652**
Facility Type	**Non-Municipal**	APS ID	**1059536**
Major / Minor	**Minor**	Authorization ID	**1389711**

Applicant and Facility Information

Applicant Name	**PA DCNR**	Facility Name	**Mt. Pisgah State Park**
Applicant Address	28 Entrance Road	Facility Address	28 Entrance Road
	Troy, PA 16947-8506		Troy, PA 16947-8506
Applicant Contact	Derek Parks	Facility Contact	Derek Parks, Operator
Applicant Phone	(570) 297-5044	Facility Phone	(570) 297-5044
Client ID	52524	Site ID	245442
Ch 94 Load Status	Not Overloaded	Municipality	West Burlington Township
Connection Status	No Limitations	County	Bradford
Date Application Received	March 21, 2022	EPA Waived?	Yes
Date Application Accepted	March 29, 2022	If No, Reason	

Purpose of Application: Renewal of a NPDES Permit

Summary of Review

The facility is a sewage treatment plant serving Mt. Pisgah State Park in West Burlington Township, Bradford County. A map of the discharge location is attached (see Attachment A).

Sludge use and disposal description and location(s): The facility's sludge is transported off site and disposed by landfill.

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		*Keith C. Allison* Keith C. Allison / Project Manager	August 29, 2022
X		*Nicholas W. Hartranft* Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	August 30, 2022

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.02
Latitude	41º 48' 14.80"	Longitude	-76º 39' 23.01"
Quad Name	East Troy, PA	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Mill Creek (TSF)	Stream Code	30718
NHD Com ID	66400555	RMI	3.22
Drainage Area	11.7 mi^2	Yield (cfs/mi^2)	0.0130
Q_{7-10} Flow (cfs)	0.152	Q_{7-10} Basis	USGS Gage 01532000 – Towanda Ck @ Monroeton (1915-2008)
Elevation (ft)	1035	Slope (ft/ft)	0.00478
Watershed No.	4-C	Chapter 93 Class.	TSF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Nearest Downstream Public Water Supply Intake	Danville Municipal Water Authority		
PWS Waters	Susquehanna River	Distance from Outfall (mi)	Approx. 150

Changes Since Last Permit Issuance: The above stream and drainage characteristics were determined for the previous review and remain adequate.

No downstream water supply is expected to be affected by this discharge at this time with the limitations and monitoring proposed.

Treatment Facility Summary

Treatment Facility Name: Mt Pisgah State Park

WQM Permit No.	Issuance Date
0877401	June 20, 1977

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration With Solids Removal	Hypochlorite	0.02

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.02	50	Not Overloaded		

Changes Since Last Permit Issuance: None

Other Comments: The treatment facility as permitted by WQM No. 0877401 consists of a comminutor, bar screen, equalization, two aeration tanks, two clarifiers, sand filters and chlorine disinfection. The facility switched from gas to liquid chlorine addition under a 1997 letter approval.

Trucked-in Waste

The applicant has indicated in the application that the facility has received no hauled-in wastes and does not expect to receive any hauled-in wastes over the next permit term.

Compliance History

DMR Data for Outfall 001 (from July 1, 2021 to June 30, 2022)

Parameter	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21
Flow (MGD) Average Monthly	0.0036	0.0064	0.0135	0.0123	0.001999	0.006921	0.01045	0.012893	0.0114352	0.011416	0.0061288	0.015253
pH (S.U.) Minimum	6.8	6.9	7.0	7.2	7.2	7.2	7.0	6.8	6.8	6.7	6.7	6.5
pH (S.U.) Maximum	7.6	7.3	7.7	7.5	7.4	7.4	7.3	7.3	7.5	7.2	7.0	7.1
DO (mg/L) Minimum	6.51	7.39	7.76	8.21	8.89	8.71	8.54	8.34	7.99	7.21	6.82	6.83
TRC (mg/L) Average Monthly	0.12	0.14	0.12	0.10	0.13	0.12	0.12	0.10	0.09	0.10	0.08	0.15
TRC (mg/L) Instantaneous Maximum	0.28	0.42	0.51	0.26	0.24	0.26	0.26	0.31	0.26	0.26	0.24	0.62
CBOD5 (mg/L) Average Monthly	2.33	0.56	1.25	1.05	1.40	1.11	1.05	0.56	0.62	1.75	0.80	1.85
CBOD5 (mg/L) Instantaneous Maximum	2.83	0.81	1.55	1.06	1.97	1.25	1.22	0.91	0.64	1.80	1	2.20
TSS (mg/L) Average Monthly	< 8	< 8	< 8	< 15	< 15	< 15	< 15	< 15	8.5	< 5	< 5	< 5
TSS (mg/L) Instantaneous Maximum	< 8	< 8	< 8	< 15	< 15	< 15	< 15	< 15	9.0	< 5	< 5	< 5
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	4.62	2	< 1	< 1	2.0	< 1	2	1	< 1	< 1	2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 1	21.3	2	< 1	< 1	2.0	< 1	2	1	< 1	< 1	2
Ammonia (mg/L) Average Monthly	1.39	0.11	0.10	0.12	0.04	0.08	< 0.07	0.10	0.16	0.13	0.58	1.02
Ammonia (mg/L) Instantaneous Maximum	2.70	0.13	0.12	0.20	0.05	0.08	< 0.07	0.13	0.16	0.18	0.99	1.83

Compliance History, Cont'd	
Summary of Inspections:	The facility has been inspected approximately annually by the Department over the past permit term. The most recent inspection on May 11, 2021 identified no violations at the time of inspection.
Other Comments:	A query in WMS found the open violations in the attached table in eFACTS for PA DCNR (See Attachment B).

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	XXX	XXX	XXX	XXX	XXX	1/week	Weir
pH (S.U.) Oct 1 - Apr 30	XXX	XXX	6.0	XXX	XXX	9.0	3/week	Grab
pH (S.U.) May 1 - Sep 30	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO Oct 1 - Apr 30	XXX	XXX	Report	XXX	XXX	XXX	3/week	Grab
DO May 1 - Sep 30	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
TRC Oct 1 - Apr 30	XXX	XXX	XXX	0.5	XXX	1.6	3/week	Grab
TRC May 1 - Sep 30	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	20.0	XXX	40.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	6.5	XXX	13.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.02
Latitude 41º 48' 14.70" **Longitude** -76º 39' 23.10"
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: The above limits are existing in the permit and will remain, with the exception of the weekly average CBOD and TSS limits due to the sampling frequencies.

Water Quality-Based Limitations

CBOD5, DO, and NH3-N

The WQM7.0 model allows the Department to evaluate point source discharges of dissolved oxygen (DO), carbonaceous BOD ($CBOD_5$), and ammonia nitrogen (NH_3-N) into free-flowing streams and rivers. To accomplish this, the model simulates two basic processes: the mixing and degradation of NH_3-N in the stream and the mixing and consumption of DO in the stream due to the degradation of $CBOD_5$ and NH_3-N. WQM7.0 modeling was performed for the discharge and showed that the secondary treatment limits listed above for $CBOD_5$ and the existing water quality-based NH_3-N limit are adequate to protect the receiving stream. See Attachment C.

TRC

The above Total Residual Chlorine limit from 92a.48(b)(2) is applicable to the facility. The Department uses a modeling spreadsheet to determine necessary WQBELs for TRC toxicity based on instream dilution. The attached modeling results from the previous review (See Attachment D) show that the BAT limit of 0.5 mg/l is adequate to protect the receiving stream.

Toxics Management

No additional “Reasonable Potential Analysis” was performed to determine additional parameters as candidates for limitations for this 0.02 MGD facility sewage treatment facility receiving no industrial influent.

Chesapeake Bay Requirements

A portion of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the Water Pollution Control Act, 33 U.S.C. §1313(d). Total Nitrogen (TN) and Total Phosphorus (TP) cap loads have been established for significant dischargers in Pennsylvania in order to reduce the total nutrient load to the Bay and meet State of Maryland Water Quality Standards. The Mt. Pisgah treatment plant is considered an existing Phase 5, insignificant Chesapeake Bay discharger per the Phase III Watershed Implementation Plan (WIP) and thus has received no Cap Loads. Annual monitoring over the past permit term resulted in an average TN concentration of 8.51 mg/L and average

TP concentration of 0.815 mg/L. Because the nutrient levels have been adequately characterized no additional nutrient monitoring will be required at this time consistent with the Phase III WIP Wastewater supplement.

Best Professional Judgment (BPJ) Limitations

Comments: No BPJ limits are needed at this time beyond the technology and water quality-based limits noted above.

Anti-Backsliding

No limitations have been made less stringent consistent with the anti-backsliding requirements of the Clean Water Act and 40 CFR 122.44(I).

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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Weir
pH (S.U.) Oct 1 - Apr 30	XXX	XXX	6.0	XXX	XXX	9.0	3/week	Grab
pH (S.U.) May 1 - Sep 30	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO Oct 1 - Apr 30	XXX	XXX	Report	XXX	XXX	XXX	3/week	Grab
DO May 1 - Sep 30	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
TRC Oct 1 - Apr 30	XXX	XXX	XXX	0.5	XXX	1.6	3/week	Grab
TRC May 1 - Sep 30	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	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 Nov 1 - Apr 30	XXX	XXX	XXX	20.0	XXX	40.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	6.5	XXX	13.0	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab

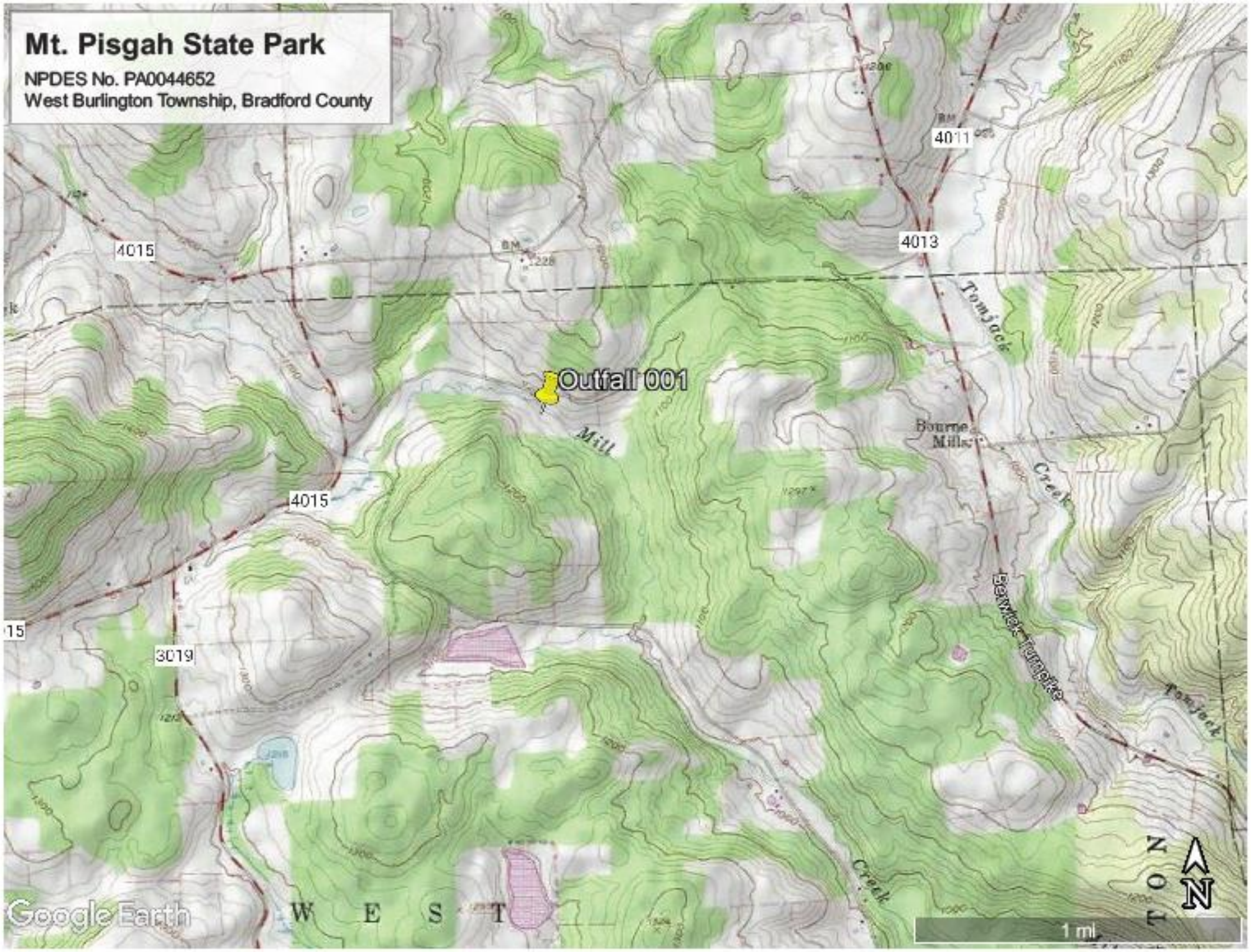
Compliance Sampling Location: Outfall 001

Other Comments: Sampling frequencies for pH, TRC and DO are consistent with previous agreements between the DEP and DCNR. E. coli monitoring is new consistent with 2021 changes to Chapter 93 of the Department's regulations and current policy. Total Nitrogen and Total Phosphorus monitoring have been removed as mentioned above.

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **C**)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment **D**)
☐	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: Establishing Effluent Limitations for Individual Sewage Permits, rev. 03/24/2021
☐	Other:

Attachments:

A. Discharge Location Map
B. Open Violations List
C. WQM7.0 Model
D. TRC Model


Mt. Pisgah State Park
NPDES No. PA0044652
West Burlington Township, Bradford County
Outfall 001
Mill
Creek
Tomjack
Creek
Bourne Mills
Berwick Turnpike
Tomjack
4015
4015
4011
4013
3019
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Open Violatins in eFACTS for PA DCNR

FACILITY	PF_KIND	INSP_ID	VIOLATION_DATE	VIOLATION	INSP_REGION
LAUREL RIDGE STATE PARK	Transient NonCommunity	3295585	12/16/2021	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS	SWRO
LAUREL RIDGE STATE PARK	Transient NonCommunity	3295585	12/16/2021	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS	SWRO
LAUREL RIDGE STATE PARK	Transient NonCommunity	3311857	1/19/2022	FAILED TO MONITOR OR REPORT THE REQUIRED NUMBER OF TOTAL COLIFORM SAMPLES	SWRO
PYMATUNING WATERFOWL MUSEUM	Transient NonCommunity	3330681	3/10/2022	CIRCUMSTANCES EXIST WHICH ADVERSELY AFFECT THE QUANTITY OR QUALITY OF WATER	NWRO
PYMATUNING WATERFOWL MUSEUM	Transient NonCommunity	3330681	3/10/2022	CROSS-CONNECTIONS EXIST WITHOUT PROPER BACKFLOW PROTECTION	NWRO
PSP ESPYVILLE LAUNCH	Transient NonCommunity	3381568	6/22/2022	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM	NWRO
PSP ESPYVILLE LIVERY NEW	Transient NonCommunity	3381842	6/22/2022	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM	NWRO
PSP ESPYVILLE LIVERY NEW	Transient NonCommunity	3381842	6/22/2022	FAILURE TO MEET DESIGN AND CONSTRUCTION STANDARDS	NWRO
PSP ESPYVILLE LIVERY NEW	Transient NonCommunity	3381842	6/22/2022	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM	NWRO
PSP ESPYVILLE LIVERY NEW	Transient NonCommunity	3381842	6/22/2022	FAILURE TO OPERATE AND MAINTAIN THE WATER SYSTEM	NWRO
MCCONNELLS MILL STATE PARK	Transient NonCommunity	3253439	9/20/2021	FAILURE TO SAMPLE AT APPROPRIATE LOCATIONS OR FOLLOW SAMPLE COLLECTION PROTOCOLS	NWRO
MCCONNELLS MILL STATE PARK	Transient NonCommunity	3253439	9/20/2021	EXCEEDANCE OF A SECONDARY MCL	NWRO
RICKETTS GLEN STATE PRK	Sewage Non-Publicly Owned (Non-Muni)	3076161	9/3/2020	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	NERO
FRANCES SLOCUM STATE PRK	Sewage Non-Publicly Owned (Non-Muni)	2936782	8/6/2019	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	NERO
HICKORY RUN STATE PRK/ SEW	Sewage Non-Publicly Owned (Non-Muni)	3383420	6/28/2022	NPDES - Violation of effluent limits in Part A of permit	NERO
WASHINGTON CROSSING HISTORICAL PARK LOWER WWTP	Sewage Non-Publicly Owned (Non-Muni)	3350012	4/14/2022	NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports	SERO
WASHINGTON CROSSING HISTORICAL PARK LOWER WWTP	Sewage Non-Publicly Owned (Non-Muni)	3350012	4/14/2022	NPDES - Failure to properly document monitoring activities and results	SERO
RYERSON ST PRK STP	Sewage Non-Publicly Owned (Non-Muni)	3274551	10/30/2021	NPDES - Violation of effluent limits in Part A of permit	SWRO
RYERSON ST PRK STP	Sewage Non-Publicly Owned (Non-Muni)	3274551	10/30/2021	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	SWRO
RYERSON ST PRK STP	Sewage Non-Publicly Owned (Non-Muni)	3274553	7/21/2021	NPDES - Violation of effluent limits in Part A of permit	SWRO
RYERSON ST PRK STP	Sewage Non-Publicly Owned (Non-Muni)	3274553	7/21/2021	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	SWRO

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
04C	30718	MILL CREEK	**3.220**	1035.00	11.70	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	0.013	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	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
Mt. Pisgah WWTP	PA0044652	0.0200	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	6.50	0.00	0.00	0.70

Permit No. PA0044652

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
04C	30718	MILL CREEK	2.840	1020.00	12.00	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	0.013	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	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
		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 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	6		

Permit No. PA0044652

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
04C	30718	MILL 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												
3.220	0.15	0.00	0.15	.0309	0.00748	.408	9.19	22.56	0.05	0.475	20.85	7.00
Q1-10 Flow												
3.220	0.10	0.00	0.10	.0309	0.00748	NA	NA	NA	0.04	0.580	21.21	7.00
Q30-10 Flow												
3.220	0.21	0.00	0.21	.0309	0.00748	NA	NA	NA	0.06	0.411	20.65	7.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
04C	30718	MILL CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.220	0.020	20.845	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
9.193	0.408	22.557	0.049
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.89	0.953	1.10	0.747
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.357	15.415	Owens	6
Reach Travel Time (days)			
0.475			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.048	5.62	1.06	7.81
0.095	5.36	1.02	8.04
0.143	5.11	0.99	8.11
0.190	4.88	0.95	8.11
0.238	4.65	0.92	8.11
0.285	4.44	0.89	8.11
0.333	4.23	0.86	8.11
0.380	4.04	0.83	8.11
0.428	3.85	0.80	8.11
0.475	3.68	0.77	8.11

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
04C	30718	MILL 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
3.220	Mt. Pisgah WWT	15.17	13	15.17	13	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
3.220	Mt. Pisgah WWT	1.81	6.5	1.81	6.5	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)		
3.22	Mt. Pisgah WWTP	25	25	6.5	6.5	3	3	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
04C	30718	MILL 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)
3.220	Mt. Pisgah WWTP	PA0044652	0.020	CBOD5	25		
				NH3-N	6.5	13	
				Dissolved Oxygen			3

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TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.152	= Q stream (cfs)	0.5	= CV Daily
0.02	= 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 = 1.586	1.3.2.iii	WLA cfc = 1.539
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.591	5.1d	LTA_cfc = 0.895

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)