pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0228648**
Facility Type	**Municipal**	APS ID	**1113447**
Major / Minor	**Minor**	Authorization ID	**1484583**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Jackson Township Municipal Authority Tioga County**	Facility Name	**Jackson Township Municipal Authority Millerton Sewer System STP**
Applicant Address	30 Wisteria Way	Facility Address	30 Wisteria Way
	Millerton, PA 16936-9355		Millerton, PA 16936
Applicant Contact	Robert Rundell	Facility Contact	Robert Rundell
Applicant Phone	(570) 537-3300	Facility Phone	(570) 537-3300
Client ID	202790	Site ID	605302
Ch 94 Load Status	Not Overloaded	Municipality	Jackson Township
Connection Status	No Limitations	County	Tioga
Date Application Received	May 10, 2024	EPA Waived?	Yes
Date Application Accepted	May 15, 2024	If No, Reason	

Purpose of Application: Renewal of a NPDES Permit

Summary of Review

The subject facility is a publicly owned treatment works serving the area of Millerton Village in Jackson Township, Tioga County. A map indicating the discharge location is attached.

Sludge use and disposal description and location(s): The facility's sludge is disposed at the Northern Tier Solid Waste Authority for disposal. Per the application, 130.64 dry tons were disposed in the previous year.

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
✓		Keith C. Allison / Project Manager	August 28, 2024
✓		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	September 3, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.11
Latitude	41º 59' 12.43"	Longitude	-76º 55' 57.80"
Quad Name	Millerton, PA	Quad Code	0330
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Seeley Creek (Hammond Creek, CWF)	Stream Code	30951
NHD Com ID	48523484	RMI	2.05
Drainage Area	26.3 mi^2	Yield (cfs/mi^2)	0.0614
Q_{7-10} Flow (cfs)	1.6	Q_{7-10} Basis	USGS Gage 01516350, Tioga River near Mansfield (1978-2008)
Elevation (ft)	1155	Slope (ft/ft)	0.00887
Watershed No.	4-B	Chapter 93 Class.	CWF
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	PA-NY State Line		
PWS Waters	Seeley Creek	Distance from Outfall (mi)	2.16

Changes Since Last Permit Issuance: The stream and drainage characteristics determined for the previous review are valid.

Other Comments: The receiving stream (Hammond Creek) is not specifically listed in Chapter 93.

No downstream water supply is expected to be affected by the discharge at this time with the limitations and monitoring proposed. The Department considers the Pennsylvania-New York state line to be the nearest downstream water supply when there is no other nearer water supply intake.

Treatment Facility Summary

Treatment Facility Name: Jackson Township Sewer System

WQM Permit No.	Issuance Date
5904402	9/21/04

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Chlorine With Dechlorination	0.11

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.22	186	Not Overloaded	Aerobic Digestion	

Changes Since Last Permit Issuance: None

Other Comments: The treatment, as approved by WQM permit No. 5904402 consists of a pump station, comminutor, bar screen, flow equalization, two extended aeration basins, two clarifiers, chlorination with contact tank, dechlorination with contact tank, sludge holding and reed sludge drying beds.

Compliance History

DMR Data for Outfall 001 (from July 1, 2023 to June 30, 2024)

Parameter	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23
Flow (MGD) Average Monthly	0.0208	0.0298	0.0493	0.0458	0.0394	0.0540	0.0550	0.0290	0.0266	0.0324	0.0313	0.0243
Flow (MGD) Daily Maximum	0.0328	0.0490	0.0923	0.1090	0.0528	0.0973	0.0968	0.0542	0.0426	0.0596	0.0966	0.0491
pH (S.U.) Instantaneous Minimum	6.82	6.84	6.71	6.83	6.88	6.9	6.75	6.89	7.09	7.29	7.52	7.24
pH (S.U.) Instantaneous Maximum	7.86	7.34	7.40	7.43	7.41	7.3	7.35	7.43	7.64	7.55	7.6	7.54
DO (mg/L) Instantaneous Minimum	7.6	8.4	9.4	11.09	10.4	10.1	8.9	8.5	8.0	6.7	7.4	7.6
TRC (mg/L) Average Monthly	0.234	0.169	0.14	0.2	0.093	0.1	0.11	0.164	0.14	0.14	0.16	0.094
TRC (mg/L) Instantaneous Maximum	1.10	0.66	0.36	1.00	0.30	0.63	0.31	0.81	0.44	0.89	0.44	0.22
CBOD5 (lbs/day) Average Monthly	0.48	0.838	1.7	1.3	1.4	2.5	2.08	1.35	0.79	1.24	0.87	0.46
CBOD5 (lbs/day) Weekly Average	0.84	1.08	2.0	1.8	1.7	5.1	3.60	2.36	1.16	1.86	1.74	0.63
CBOD5 (mg/L) Average Monthly	2.8	3.2	3.6	4.0	4.5	5.4	4.1	6.12	3.8	5.5	3.4	2.8
CBOD5 (mg/L) Weekly Average	3.4	4.2	6.6	4.3	5.7	7.0	5.1	12.2	4.2	9.7	5.4	4.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	47.10	46	69	51	58	42	78.33	35	33.7	30.0	37.22	36.0
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	61.72	58	123	55	76	101	155.60	57	44.3	32.0	44.48	40.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	286	182	149	143	185	120	145	160	167	143	183	216
TSS (lbs/day) Average Monthly	< 0.98	1.01	< 2.8	1.7	1.8	3.0	3.17	1.46	0.87	1.4	1.38	0.71

TSS (lbs/day) Raw Sewage Influent Average Monthly	47.80	38	117	53	43	40.3	56.9	35	51.14	32	39.60	34
TSS (lbs/day) Raw Sewage Influent Daily Maximum	58.59	44	317	102	57	70.9	89.82	46	106.62	35	47.32	43
TSS (lbs/day) Weekly Average	2.06	1.12	6.93	2.2	2.0	6.5	3.54	2.02	1.10	2.0	2.58	0.60
TSS (mg/L) Average Monthly	< 4.25	4.0	< 5.2	5.0	6.0	6.2	6.5	7.0	4.3	6.0	5.6	4.25
TSS (mg/L) Raw Sewage Influent Average Monthly	293	152	211	145	140	91	112	165	191	153	165	210
TSS (mg/L) Weekly Average	5.0	4.0	9.0	6.0	8.0	9.0	8.0	11.0	5.0	7.0	8.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	3.4	1.01	9.44	10	6.3	29.8	25	2.2	2.0	3.3	1.68	3.4
Fecal Coliform (No./100 ml) Instantaneous Maximum	127.4	2.0	248.1	1	22.6	2420	2420	3.0	4.1	9.7	13.2	8.6
Ammonia (lbs/day) Average Monthly	< 0.32	0.07	< 0.83	< 0.16	0.63	< 0.10	< 0.050	< 0.03	< 0.024	0.03	< 0.05	0.02
Ammonia (lbs/day) Weekly Average	1.24	0.24	3.2	0.54	2.2	0.07	< 0.070	< 0.052	< 0.044	0.04	< 0.16	0.02
Ammonia (mg/L) Average Monthly	< 2.25	< 0.27	< 1.1	< 0.35	1.8	< 0.21	< 0.10	< 0.13	< 0.12	0.12	< 0.10	0.10
Ammonia (mg/L) Weekly Average	8.7	0.95	4.1	1.1	6.5	0.67	< 0.10	0.26	< 0.16	0.18	0.11	0.10

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 April 26, 2023 noted an eDMR effluent violation but no operational violations at the time of inspection.
Other Comments:	There are no open violations in eFACTS for Jackson Township Municipal Authority.

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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
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	1.17	1/day	Grab
CBOD5 Nov 1 - Apr 30	23	37	XXX	25.0	40.0	50	1/week	8-Hr Composite
CBOD5 May 1 - Oct 31	18	28	XXX	20.0	30.0	40	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	28	41	XXX	30.0	45.0	60	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Total Nitrogen	XXX	Report Daily Max	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Ammonia Nov 1 - Apr 30	16.5	24.8	XXX	18.0	27.0	36	1/week	8-Hr Composite
Ammonia May 1 - Oct 31	5.5	8.3	XXX	6.0	9.0	12	1/week	8-Hr Composite
Total Phosphorus	XXX	Report Daily Max	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.11
Latitude 41º 59' 13.00" **Longitude** -76º 55' 58.00"
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: The above limits are applicable and are included in the existing permit.

Water Quality-Based Limitations

CBOD5, NH3-N & DO

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. The discharge has existing WQ-Based limits for $CBOD_5$, NH_3-N, and DO. WQM7.0 modeling was performed (see Attachment B) for the discharge to Hammond Creek and verifies that no limitations are necessary beyond the existing limitations.

Total Residual Chlorine

The attached modeling shows that the technology-based limit of 0.5 mg/L is adequate to protect the receiving waters (See Attachment C). The discharge has an existing TRC IMAX of 1.17 mg/L that will remain in the permit pursuant to anti-backsliding.

Toxics Management

No additional reasonable potential analysis has been performed to determine additional parameters for limitations or monitoring for this minor municipal treatment plant with no industrial users.

Chesapeake Bay/Nutrient 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 and Total Phosphorus cap loads have been established for significant dischargers in Pennsylvania to reduce the total nutrient load to the Bay and meet State of Maryland Water Quality Standards. The Jackson Township Authority facility is considered a Phase V, non-significant Chesapeake Bay discharger and as such no nutrient cap loadings have been established for the facility pursuant to the Phase II Watershed Implementation Plan. The Total Nitrogen and Total Phosphorus concentrations have averaged 35.3 and 13.6 mg/L, respectively, over the past permit term. Because the nutrients levels in the discharge have adequately been characterized, no additional Total Nitrogen and Total Phosphorus monitoring will be required at this time.

E. Coli

Quarterly e. coli monitoring will be required at this time due to changes to Chapter 93 of the Department's regulations and Department policy.

Best Professional Judgment (BPJ) Limitations

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

Anti-Backsliding

No limitations were made less stringent consistent with the anti-degradation requirements of the Clean Water Act and 40 CFR 122.44(l).

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	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
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	1.17	1/day	Grab
CBOD5 Nov 1 - Apr 30	23	37	XXX	25.0	40.0	50	1/week	8-Hr Composite
CBOD5 May 1 - Oct 31	18	28	XXX	20.0	30.0	40	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	28	41	XXX	30.0	45.0	60	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia Nov 1 - Apr 30	16.5	24.8	XXX	18.0	27.0	36	1/week	8-Hr Composite
Ammonia May 1 - Oct 31	5.5	8.3	XXX	6.0	9.0	12	1/week	8-Hr Composite
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab

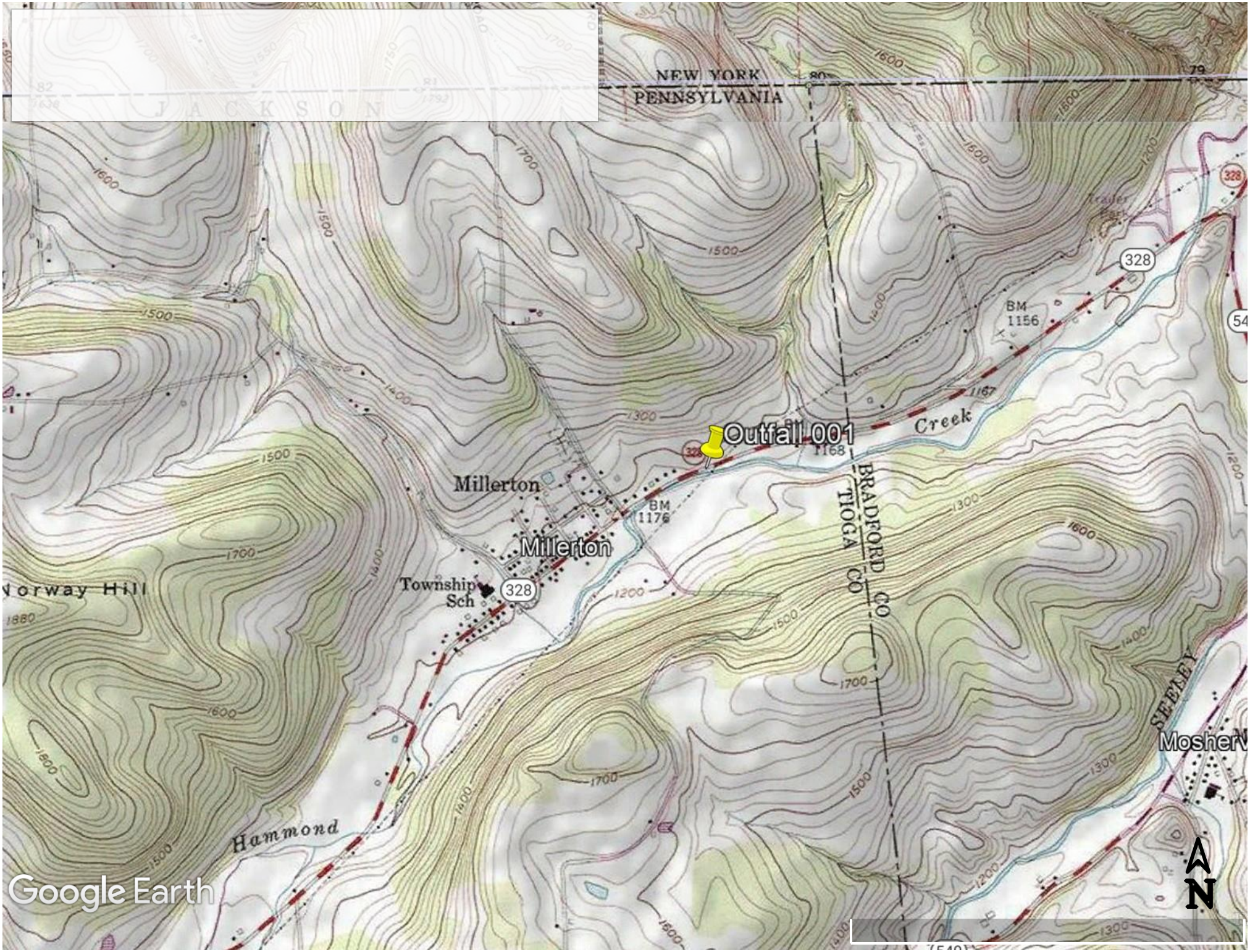
Compliance Sampling Location: Outfall 001

Other Comments: Total Nitrogen and Total Phosphorus have been removed and e. coli monitoring is new as mentioned above.

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment **C**)
☐	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: Establishing Effluent Limitations for Individual Sewage Permits
☐	Other:

Attachments:

A. Discharge Location Map
B. WQM7.0 Model
C. TRC Model


NEW YORK
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Outfall 001
Millerton
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328
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Creek
BRADFORD CO
TIOGA CO
Norway Hill
Hammond
SEENEY
Google Earth
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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
04B	30951	HAMMOND CREEK	**2.050**	1155.00	26.30	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	0.061	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
Jackson Twp MA	PA0228648	0.1100	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	20.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	6.00	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
04B	30951	HAMMOND CREEK	**0.001**	1059.00	28.00	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 (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
Q7-10	0.061	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 (ºC)	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
04B	30951	HAMMOND 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 (ºC)	Analysis pH
Q7-10 Flow												
2.050	1.61	0.00	1.61	.1702	0.00887	.581	20.69	35.59	0.15	0.843	20.48	7.00
Q1-10 Flow												
2.050	1.03	0.00	1.03	.1702	0.00887	NA	NA	NA	0.12	1.052	20.71	7.00
Q30-10 Flow												
2.050	2.20	0.00	2.20	.1702	0.00887	NA	NA	NA	0.17	0.720	20.36	7.00

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		

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
04B	30951	HAMMOND CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
2.050	0.110	20.477	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
20.687	0.581	35.593	0.148
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.72	0.540	0.57	0.726
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.838	12.660	Tsivoglou	6
Reach Travel Time (days)			
0.843			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.084	3.55	0.54	8.17
0.169	3.39	0.51	8.17
0.253	3.23	0.48	8.17
0.337	3.08	0.45	8.17
0.422	2.94	0.42	8.17
0.506	2.81	0.40	8.17
0.590	2.68	0.37	8.17
0.675	2.56	0.35	8.17
0.759	2.44	0.33	8.17
0.843	2.33	0.31	8.17

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
04B	30951	HAMMOND 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
2.050	Jackson Twp MA	15.81	12	15.81	12	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
2.050	Jackson Twp MA	1.84	6	1.84	6	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)		
2.05	Jackson Twp MA	20	20	6	6	4	4	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
04B	30951	HAMMOND 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)
2.050	Jackson Twp MA	PA0228648	0.110	CBOD5	20		
				NH3-N	6	12	
				Dissolved Oxygen			4

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

1.6	= Q stream (cfs)	0.5	= CV Daily
0.11	= 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 = 3.018	1.3.2.iii	WLA cfc = 2.935
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1.125	5.1d	LTA_cfc = 1.706

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)