Pennsylvania Department of Environmental Protection

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0209597**
Facility Type	**Municipal**	APS ID	**1127144**
Major / Minor	**Minor**	Authorization ID	**1509044**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Delmar Township Tioga County**	Facility Name	**Stony Fork**
Applicant Address	610 N Lawton Road	Facility Address	137 Stony Fork Creek Road
	Wellsboro, PA 16901-7941		Wellsboro, PA 16901
Applicant Contact	Garry Clark	Facility Contact	Garry Clark
Applicant Phone	(570) 724-7669	Facility Phone	(570) 724-7669
Client ID	68147	Site ID	484884
Ch 94 Load Status	Not Overloaded	Municipality	Delmar Township
Connection Status	No Limitations	County	Tioga
Date Application Received	December 9, 2024	EPA Waived?	Yes
Date Application Accepted	December 11, 2024	If No, Reason	
Purpose of Application	Renewal of a NPDES Permit		

Summary of Review

The subject facility is a publicly owned treatment works (POTW) serving the area of the villages of Draper and Stony Fork in Delmar Township, Tioga County.

Sludge use and disposal description and location(s): The facility's waste sludge is 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
✓		Keith C. Allison Keith C. Allison / Project Manager	May 21, 2025
✓		N. W. H. Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	May 21, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.045
Latitude	41º 39' 13.94"	Longitude	-77º 22' 12.25"
Quad Name	Antrim, PA	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	East Branch Stony Fork (CWF)	Stream Code	21711
NHD Com ID	66538103	RMI	2.8
Drainage Area	16.6 mi^2	Yield (cfs/mi^2)	0.0212
Q_{7-10} Flow (cfs)	0.351	Q_{7-10} Basis	USGS Gage 01549500, Blockhouse Creek near English Center (1942-2008)
Elevation (ft)	1330	Slope (ft/ft)	0.00997
Watershed No.	9-A	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)		
TMDL Status	Final	Name	Babb Creek
Nearest Downstream Public Water Supply Intake	Jersey Shore Water Authority		
PWS Waters	Pine Creek	Distance from Outfall (mi)	Approx. 50

Changes Since Last Permit Issuance: The stream and drainage characteristics were updated.

Other Comments: No downstream water supply is expected to be affected by the discharge with the limitations and monitoring proposed.

The discharge is within the area of study of the Babb Creek TMDL for AMD impairment within the greater watershed. This discharge received monitoring in the previous renewal for Aluminum, Iron, and Manganese due to the discharge to the Babb Creek watershed. The monitoring resulted in average levels of <0.1 mg/L for Total Aluminum, <0.2 mg/L for Total Iron, and <0.028 mg/L for Manganese. Because the levels of these metals have adequately been characterized no additional monitoring for these will be required at this time.

Treatment Facility Summary

Treatment Facility Name: Delmar Township Stony Fork

WQM Permit No.	Issuance Date	Permit Coverage
5999401	Original – 10/20/99	Original permitting of current treatment
	A-1 – 6/16/22	Installation of Dechlorination

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Hypochlorite	0.045

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.045	85	Not Overloaded		

Changes Since Last Permit Issuance: The installation of dechlorination under WQM Permit 5999401 A-1 was completed.

Other Comments: The treatment consists of equalization, bar screen, aeration tank, clarifier, chlorination, dechlorination, aerated digester, and sludge drying bed.

Compliance History

DMR Data for Outfall 001 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Average Monthly	0.012943	0.013196	0.013186	0.0138338	0.013799	0.013254	0.013668	0.0148977	0.013061	0.012426	0.013331	0.016505
Flow (MGD) Daily Maximum	0.0192	0.016007	0.01549	0.016467	0.01867	0.015889	0.018621	0.039856	0.018804	0.015186	0.018766	0.034237
pH (S.U.) Instantaneous Minimum	6.41	6.7	6.78	6.54	6.51	6.81	6.78	6.76	6.6	6.54	6.56	6.73
pH (S.U.) Instantaneous Maximum	6.99	7.04	7.13	6.99	7.05	7.21	7.25	7.29	7.18	7.13	7.36	7.39
TRC (mg/L) Average Monthly	< 0.01	< 0.02	< 0.02	< 0.013	0.05	0.05	0.06	0.07	0.08	0.13	0.106	0.08
TRC (mg/L) Instantaneous Maximum	0.05	0.08	0.05	0.15	0.11	0.13	0.12	0.13	0.16	0.15	0.18	0.16
CBOD5 (lbs/day) Average Monthly	< 0.3	< 0.7	< 0.3	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.6
CBOD5 (mg/L) Average Monthly	< 3	< 6.01	< 3	< 3	< 3.0	< 3	< 3	< 3	< 3	< 3	< 3	< 4.46
CBOD5 (mg/L) Instantaneous Maximum	< 3	9.02	< 3	< 3	< 3.0	< 3	< 3	< 3	< 3	< 3	< 3	5.91
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	24	25	27	28	24	16	31	23	27	26	25	29
BOD5 (mg/L) Raw Sewage Influent Average Monthly	249	230	240	230	242	152.4	294	205	275	279	261	216
TSS (lbs/day) Average Monthly	1	1	< 0.3	1	0.4	0.7	0.7	0.3	1	0.6	< 0.2	0.8
TSS (lbs/day) Raw Sewage Influent Average Monthly	18	17	17	12	14	14	20	3	21	17	21	17
TSS (mg/L) Average Monthly	13.4	11.4	< 3.2	9	4	6.2	6.2	3	9.6	6.2	< 2.2	5.8
TSS (mg/L) Raw Sewage Influent Average Monthly	185	157	156	98	142	133	189	31	206	184	221	128.8

TSS (mg/L) Instantaneous Maximum	16.8	16	4.8	10.8	5.6	7.6	8.8	4	16	6.0	2.4	6
Fecal Coliform (No./100 ml) Geometric Mean	3	8	< 1	61.0	6	> 85	25	6	6	4	2	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	4.1	30.9	1	125	9.8	> 2419.6	75.4	17.1	7.5	9.7	3.1	1

Compliance History

Effluent Violations for Outfall 001, from: April 1, 2024 to March 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	10/31/24	Geo Mean	> 85	No./100 ml	2000	No./100 ml
Fecal Coliform	10/31/24	IMAX	> 2419.6	No./100 ml	10000	No./100 ml

Compliance History	
Summary of Inspections:	The most recent inspection of the facility by the Department on November 13, 2024 identified eDMR effluent violations and failure to submit a timely application as violations.
Other Comments:	A query in WMS found no open violations in eFACTS for Delmar Township, Tioga County. The permittee's most recent Chapter 94 report indicated a projected organic overload.

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	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	9	XXX	XXX	25	XXX	50	2/month	Grab
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
TSS	11	XXX	XXX	30	XXX	60	2/month	Grab
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Aluminum	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.045
Latitude 41º 39' 15.00" **Longitude** -77º 22' 13.00"
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)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
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, 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 to East Branch Stony Fork and showed that the secondary treatment limits listed above for CBOD5 is adequate, but an Ammonia-Nitrogen limit of 14.2 mg/L is necessary to protect the receiving waters. This limitation appears to be achievable based on application sampling. The current permit does not require regular NH_3-N monitoring. DO Monitoring will also be required at this time. See Attachment B.

TRC

The Department uses a modeling spreadsheet to determine necessary WQBELs for TRC toxicity based on instream dilution. The attached modeling results (See attachment C) show that the BAT limit of 0.5 mg/l is adequate to protect the receiving stream.

Toxics Management

No further "Reasonable Potential Analysis" was performed to determine additional toxic parameters as candidates for limitations for this 0.045 MGD 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 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 Delmar Township treatment plant is considered an existing Phase 5, insignificant Chesapeake Bay discharger per the Phase III Watershed Implementation Plan (WIP) and thus has not received Cap Loads. Monitoring under a previous issuance found the Total Nitrogen and Total Phosphorus to average <47 and 4.23 mg/L, respectively. Because the nutrient load from the discharge has adequately been characterized for this Phase 5 discharger no further nutrient monitoring will be required at this time.

e. Coli
Annual e. coli monitoring will be required at this time due to recent changes to Chapter 93 of the Departments regulations and Department policy.

Best Professional Judgment (BPJ) Limitations

No additional BPJ limits are needed beyond the water quality and technology-based limits noted above.

Anti-Backsliding

No water quality based or BPJ limits were made less stringent consistent with the anti-backsliding requirements of 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.

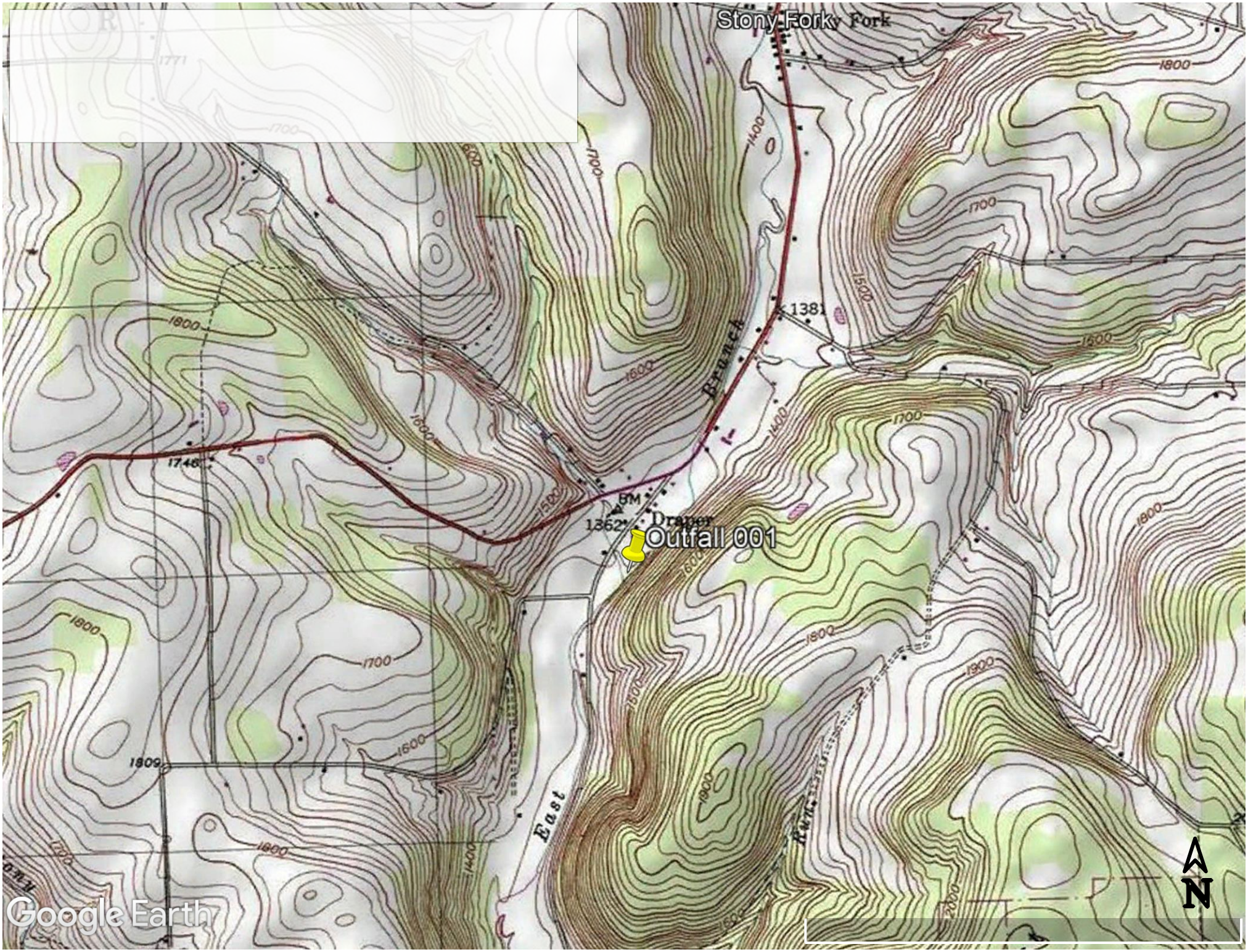
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	9	XXX	XXX	25	XXX	50	2/month	Grab
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
TSS	11	XXX	XXX	30	XXX	60	2/month	Grab
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia-Nitrogen (May1 – Oct 31)	5.3	XXX	XXX	14.2	XXX	28.5	2/month	Grab
Ammonia-Nitrogen (Nov 1 – Apr 30)	9.3	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab

Comments: Ammonia-Nitrogen monitoring and limitations are new as mentioned above. Dissolved Oxygen monitoring and E. Coli monitoring are new as mentioned above. Total Aluminum, Iron, and Manganese monitoring have been removed 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:
☐	Other:

Attachments:

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


Stony Fork
Branch
East
Draper
Outfall 001
1381
1362
1746
1809
N
Google Earth

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
09A	21711	EAST BRANCH STONY FORK	**2.800**	1330.00	16.60	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	0.021	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
Delmar Twp	PA0209597	0.0450	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

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
09A	21711	EAST BRANCH STONY FORK	**2.610**	1320.00	17.00	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	0.021	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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
09A	21711	EAST BRANCH STONY FORK

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												
2.800	0.35	0.00	0.35	.0696	0.00997	.467	12.2	26.12	0.07	0.157	20.83	7.00
Q1-10 Flow												
2.800	0.23	0.00	0.23	.0696	0.00997	NA	NA	NA	0.06	0.192	21.18	7.00
Q30-10 Flow												
2.800	0.48	0.00	0.48	.0696	0.00997	NA	NA	NA	0.09	0.136	20.63	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
09A	21711	EAST BRANCH STONY FORK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
2.800	0.045	20.826	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
12.203	0.467	26.115	0.074
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.80	1.029	2.36	0.746
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.377	15.787	Owens	6
Reach Travel Time (days)			
0.157			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.016	5.70	2.33	7.50
0.031	5.61	2.30	7.60
0.047	5.51	2.27	7.68
0.063	5.42	2.25	7.74
0.079	5.33	2.22	7.80
0.094	5.24	2.20	7.84
0.110	5.16	2.17	7.88
0.126	5.07	2.14	7.92
0.141	4.99	2.12	7.94
0.157	4.90	2.10	7.97

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
09A	21711	EAST BRANCH STONY FORK

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
2.800	Delmar Twp	15.2	50	15.2	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
2.800	Delmar Twp	1.81	14.26	1.81	14.26	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)		
2.80	Delmar Twp	25	25	14.26	14.26	3	3	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
09A	21711	EAST BRANCH STONY FORK

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)
2.800	Delmar Twp	PA0209597	0.045	CBOD5	25		
				NH3-N	14.26	28.52	
				Dissolved Oxygen			3

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.351	= Q stream (cfs)	0.5	= CV Daily
0.045	= 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 = 1.627	1.3.2.iii	WLA cfc = 1.579
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.606	5.1d	LTA_cfc = 0.918

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)