

Application Type Renewal
 Facility Type Municipal
 Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0228893
 APS ID 1147533
 Authorization ID 1544369

Applicant and Facility Information

Applicant Name	<u>Liberty Area Municipal Authority</u>	Facility Name	<u>Liberty Area Municipal Authority Wastewater System</u>
Applicant Address	<u>PO Box 73</u> <u>Liberty, PA 16930-0073</u>	Facility Address	<u>4810 Blockhouse Road</u> <u>Liberty, PA 16930-9118</u>
Applicant Contact	<u>Barb Connolly</u>	Facility Contact	<u>Chris Fabian</u>
Applicant Phone	<u>(570) 324-2722</u>	Facility Phone	<u>(570) 439-1681</u>
Client ID	<u>239611</u>	Site ID	<u>652621</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Liberty Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Tioga</u>
Date Application Received	<u>September 30, 2025</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>October 7, 2025</u>	If No, Reason	<u></u>
Purpose of Application	<u>Renewal of an NPDES Permit.</u>		

Summary of Review

The subject facility is a Publicly Owned Treatment Works (POTW) serving the vicinity of Liberty Borough and neighboring portions of Liberty Township in Tioga County.

Sludge use and disposal description and location(s): Because the facility receives septic tank effluent it does not typically require sludge disposal.

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	February 5, 2025
✓		 Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	February 10, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>0.075</u>
Latitude	<u>41° 33' 8.87"</u>	Longitude	<u>-77° 6' 38.90"</u>
Quad Name	<u>Liberty, PA</u>	Quad Code	<u>0629</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Blockhouse Creek (CWF)</u>	Stream Code	<u>21361</u>
NHD Com ID	<u>66539289</u>	RMI	<u>11.79</u>
Drainage Area	<u>7.68</u>	Yield (cfs/mi ²)	<u>0.025</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.2</u>	Q ₇₋₁₀ Basis	<u>USGS Stream gage 01549500, Blockhouse Creek near English Center, PA</u>
Elevation (ft)	<u>1508</u>	Slope (ft/ft)	<u>0.01</u>
Watershed No.	<u>9-A</u>	Chapter 93 Class.	<u>CWF</u>
Existing Use	<u>CWF</u>	Existing Use Qualifier	<u>n/a</u>
Exceptions to Use	<u>None</u>	Exceptions to Criteria	<u>none</u>
Assessment Status	<u>Attaining Use(s)</u>		
Nearest Downstream Public Water Supply Intake	<u>Jersey Shore Joint Water Authority</u>		
PWS Waters	<u>Pine Creek</u>	Flow at Intake (cfs)	<u>38.6</u>
PWS RMI	<u>1.92</u>	Distance from Outfall (mi)	<u>39.6</u>

Changes Since Last Permit Issuance: None

Other Comments: Blockhouse Creek attains an Exceptional Value (EV) existing use approximately 5 miles downstream at its confluence with Steam Valley Run.

The discharge is not expected to affect any downstream water supply at this time with the limitations and monitoring proposed.

Treatment Facility Summary				
Treatment Facility Name: Liberty Area Municipal Authority				
WQM Permit No.	Issuance Date	Permit Coverage:		
5905401-A3	3/31/2016	Addition of aeration to dosing/recirculation tank (DRT)		
5905401-A2	11/21/11	Elimination of requirement to construct/operate a 0.075 MG septic tank and pH adjustment with magnesium hydroxide		
5905401 Letter Amendment	4/21/11	Filter media replacement and aeration to bypass manhole		
5905401-A1	5/21/08	Collection system expansion		
5905401	9/26/05	Original permitting of system		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Septic Tank Sand Filter	Ultraviolet	0.075
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.09	255	Not Overloaded	Holding Tank	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: The facility receives septic tank effluent. Treatment, as permitted under WQM Permit No. 5905401 including amendments, consists of media filters, dosing/recirculating tank, chemical addition, and UV disinfection.

Compliance History

DMR Data for Outfall 001 (from January 1, 2025 to December 31, 2025)

Parameter	DEC-25	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25
Flow (MGD) Average Monthly	0.032	0.022	0.027	0.023	0.022	0.025	0.029	0.056	0.037	0.044	0.034	0.028
Flow (MGD) Daily Maximum	0.86	0.031	0.081	0.061	0.050	0.050	0.065	0.128	0.087	0.160	0.093	0.050
pH (S.U.) Instantaneous Minimum	6.3	6.3	6.4	6.5	6.4	6.7	6.5	6.5	6.4	6.6	6.6	6.6
pH (S.U.) Instantaneous Maximum	6.7	6.8	7.0	7.2	7.0	7.2	7.2	7.3	7.0	7.1	7.3	7.2
DO (mg/L) Minimum	5.7	5.8	5.8	5.7	5.9	4.9	5.9	5.7	6.2	5.9	5.3	6.5
CBOD5 (lbs/day) Average Monthly	< 0.4	0.5	< 0.6	< 0.6	3.0	0.9	1.0	< 2.0	< 1.0	2.0	2.0	2.0
CBOD5 (lbs/day) Weekly Average	< 0.5	0.7	0.7	0.7	5.0	0.9	1.0	2.0	1.0	2.0	2.0	3.0
CBOD5 (mg/L) Average Monthly	< 3.0	3.0	< 3.0	< 3.0	16.0	5.0	6.0	< 4.0	< 4.0	6.0	9.0	11
CBOD5 (mg/L) Weekly Average	< 3.0	3.0	3.0	3.0	26.0	5.0	20.0	5.0	5.0	6.0	12.0	11
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	6.0	12.0	25.0	15.0	9.0	10.0	34	43	67.0	31	8.0	16
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	10.0	19.0	39.0	15.0	10.0	17.0	49	65	87.0	39	11.0	19
BOD5 (mg/L) Raw Sewage Influent Average Monthly	43.0	65	122.0	80.0	55.0	57.0	192	109	200	100	37.0	76
TSS (lbs/day) Average Monthly	0.6	0.6	0.6	0.9	0.6	1.0	3.0	5.0	3.0	1.0	2.0	2.0
TSS (lbs/day) Raw Sewage Influent Average Monthly	10.0	7.0	7.0	6.0	14.0	5.0	5.0	12.0	55.0	22	13.0	21
TSS (lbs/day) Raw Sewage Influent Daily Maximum	20.0	12.0	8.0	7.0	25.0	6.0	6.0	19.0	57.0	28	23.0	27
TSS (lbs/day) Weekly Average	1.0	0.7	0.7	1.0	0.6	1.0	3.0	6.0	4.0	1.0	2.0	2.0
TSS (mg/L) Average Monthly	4.0	3.0	3.0	5.0	3.0	5.0	14.0	12.0	10.0	4.0	7.0	8.0

NPDES Permit Fact Sheet
Liberty Area Municipal Authority Wastewater System

NPDES Permit No. PA0228893

TSS (mg/L) Raw Sewage Influent Average Monthly	65.0	40.0	36.0	35.0	64.0	30.0	25	30.0	168.0	73	62.0	99
TSS (mg/L) Weekly Average	6.0	3.0	4.0	7.0	4.0	7.0	20.0	14.0	12.0	4.0	8.0	8.0
Fecal Coliform (CFU/100 ml) Geometric Mean	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	19.0	< 2.0	90.0	2048
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1.0	2.0	< 1.0	< 1.0	< 1.0	1.0	< 1.0	20.3	21.8	< 1.0	1986.3	2419.5
UV Transmittance (%) Average Monthly	66	64	59	59	61	60	57	58	56	54	59	58
Ammonia (lbs/day) Average Monthly	1.0	2.5	0.5	0.2	0.4	0.5	0.8	1.0	1.0	1.0	3.0	4.0
Ammonia (lbs/day) Weekly Average	1.0	1.0	0.5	0.4	0.7	0.5	0.7	2.0	1.0	1.0	4.0	4.0
Ammonia (mg/L) Average Monthly	7.0	4.5	2.5	1.0	1.9	2.6	3.2	2.8	3.2	4.7	12.3	16.8
Ammonia (mg/L) Weekly Average	8.7	5.3	3.3	1.9	3.3	2.8	3.3	3.4	4.8	5.3	15.1	17.2

Compliance History

Effluent Violations for Outfall 001, from: October 1, 2024 To: August 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	06/30/25	Avg Mo	14.0	mg/L	10	mg/L
TSS	06/30/25	Wkly Avg	20.0	mg/L	15	mg/L

Compliance History

Summary of Inspections:		The most recent inspection of the facility by the Department on October 2, 2025 identified eDMR discharge violations but no operational violations at the time of inspection.
Other Comments:		A WMS query found no open violations in eFACTS as listed in the attached table for Liberty Area 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	Report	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - May 31	15	25	XXX	25	40	50	2/month	8-Hr Composite
CBOD5 Jun 1 - Oct 31	12	18	XXX	20	30	40	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
TSS Nov 1 - May 31	18	28	XXX	30	45	60	2/month	8-Hr Composite
TSS Jun 1 - Oct 31	6.0	9.0	XXX	10	15	20	2/month	8-Hr Composite
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
UV Transmittance (%)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Metered
Ammonia Nov 1 - May 31	11	16	XXX	18	27	36	2/month	8-Hr Composite
Ammonia Jun 1 - Oct 31	3.5	5.5	XXX	6.0	9.0	12	2/month	8-Hr Composite

Development of Effluent Limitations

Outfall No. <u>001</u>	Design Flow (MGD) <u>0.075</u>
Latitude <u>41° 33' 9.00"</u>	Longitude <u>-77° 6' 39.00"</u>
Wastewater Description: <u>Sewage Effluent</u>	

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)

Comments: The above limits are applicable and are included in the existing permit besides more stringent existing seasonal limits for CBOD₅ and TSS as noted below.

Water Quality-Based Limitations

DO, CBOD₅ and NH₃-N

The WQM7.0 model allows the Department to evaluate point source discharges of dissolved oxygen (DO), carbonaceous BOD (CBOD₅), and ammonia-nitrogen (NH₃-N) into free-flowing streams and rivers. To accomplish this, the model simulates two basic processes: the mixing and degradation of NH₃-N in the stream and the mixing and consumption of DO in the stream due to the degradation of CBOD₅ and NH₃-N. The discharge has existing water quality-based limits for CBOD₅ and NH₃-N as listed on the previous page. WQM7.0 modeling was performed (see Attachment B) for the discharge to the Blockhouse Creek and showed a more stringent NH₃-N limitation of 5.5 mg/L is necessary. This more stringent limitation is the result of recent changes to the Department's ammonia-nitrogen criteria. The new limit appears to be achievable based on existing data.

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 in order to reduce the total nutrient load to the Bay and meet State of Maryland Water Quality Standards. This discharger is considered a Phase 5, Non-Significant Chesapeake Bay discharger and thus has received no nutrient cap loads pursuant to the Phase III Watershed Implementation Plan. Monitoring performed for a previous permit term for Total Nitrogen and Total Phosphorus have averaged 173 mg/L and 16 mg/L, respectively. Because the nutrient load from the discharge has been adequately characterized, no additional nutrient monitoring will be required at this time.

E. Coli Monitoring

Consistent with recent changes to Chapter 93 of the Department's regulations annual E. Coli monitoring will be included in the draft permit.

Best Professional Judgment (BPJ) Limitations

Comments: The facility has existing BPJ-based limitations for TSS which are achievable and will remain.

Anti-Backsliding

No proposed limitations have been 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	Report	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - May 31	15	25	XXX	25	40	50	2/month	8-Hr Composite
CBOD5 Jun 1 - Oct 31	12	18	XXX	20	30	40	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
TSS Nov 1 - May 31	18	28	XXX	30	45	60	2/month	8-Hr Composite
TSS Jun 1 - Oct 31	6.0	9.0	XXX	10	15	20	2/month	8-Hr Composite
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
UV Transmittance (%)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Metered
Ammonia Nov 1 - May 31	10.4	15.6	XXX	16.6	24.9	33	2/month	8-Hr Composite
Ammonia Jun 1 - Oct 31	3.4	5.2	XXX	5.55	8.3	11.1	2/month	8-Hr Composite

Outfall 001 , Continued (from 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		
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

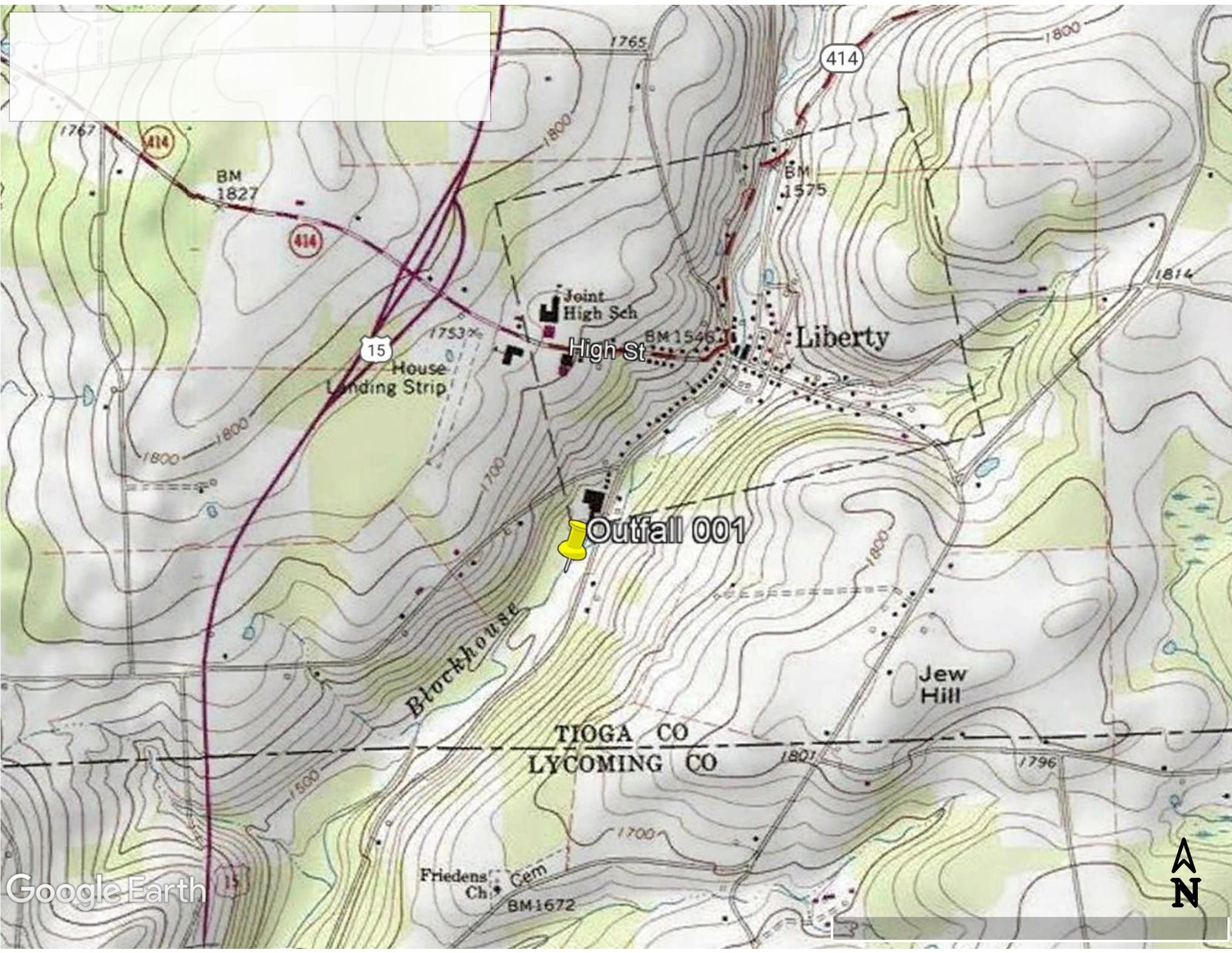
Compliance Sampling Location: Outfall 001

Other Comments: E. Coli monitoring is new as mentioned above. More stringent ammonia-nitrogen limitations are included as also mentioned above.

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment B)
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment)
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<input checked="" type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input checked="" type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input checked="" type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	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.
<input checked="" type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input checked="" type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP:
<input type="checkbox"/>	Other:

Attachments:

- A. Discharge Location Map
- B. WQM7.0 Model



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	21361	BLOCKHOUSE CREEK	11.790	1508.00	7.68	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	pH
	Q7-10	0.025	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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
Liberty AMA	PA0228893	0.0750	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	3.00	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
09A	21361	BLOCKHOUSE CREEK	10.870	1460.00	8.90	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	pH
	Q7-10	0.025	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
09A		21361				BLOCKHOUSE 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												
11.790	0.19	0.00	0.19	.116	0.00988	.43	9.75	22.66	0.07	0.766	21.88	7.00
Q1-10 Flow												
11.790	0.12	0.00	0.12	.116	0.00988	NA	NA	NA	0.06	0.883	22.43	7.00
Q30-10 Flow												
11.790	0.26	0.00	0.26	.116	0.00988	NA	NA	NA	0.08	0.684	21.54	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	6		

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
09A	21361	BLOCKHOUSE CREEK			
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<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
11.790	0.075	21.883		7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
9.750	0.430	22.659		0.073	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>	
8.78	1.136	2.09		0.809	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
6.268	18.770	Owens		6	
<u>Reach Travel Time (days)</u>					
0.766					
	Subreach Results				
	<u>TravTime</u>	<u>CBOD5</u>	<u>NH3-N</u>	<u>D.O.</u>	
	(days)	(mg/L)	(mg/L)	(mg/L)	
	0.077	7.99	1.97	7.31	
	0.153	7.26	1.85	7.63	
	0.230	6.61	1.74	7.77	
	0.306	6.01	1.63	7.87	
	0.383	5.46	1.53	7.95	
	0.459	4.97	1.44	7.96	
	0.536	4.52	1.36	7.96	
	0.613	4.11	1.27	7.96	
	0.689	3.74	1.20	7.96	
	0.766	3.40	1.13	7.96	
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WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
09A	21361	BLOCKHOUSE 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
11.790	Liberty AMA	13.7	12	13.7	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
11.790	Liberty AMA	1.71	5.55	1.71	5.55	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
11.79	Liberty AMA	20	20	5.55	5.55	3	3	0	0

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
09A		21361		BLOCKHOUSE 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)
11.790	Liberty AMA	PA0228893	0.075	CBOD5	20		
				NH3-N	5.55	11.1	
				Dissolved Oxygen			3