

Application Type Renewal
 Facility Type Municipal
 Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0083585
 APS ID 277782
 Authorization ID 1527728

Applicant and Facility Information

Applicant Name	<u>Todd Township Fulton County</u>	Facility Name	<u>Todd Township STP</u>
Applicant Address	<u>2998 East Dutch Corner Road</u> <u>McConnellsburg, PA 17233</u>	Facility Address	<u>2998 E Dutch Corner Road</u> <u>McConnellsburg, PA 17233-8512</u>
Applicant Contact	<u>James Deshong</u>	Facility Contact	<u>Craig Strait</u>
Applicant Phone	<u>(717) 987-3812</u>	Facility Phone	<u>(717) 816-5265</u>
Client ID	<u>67054</u>	Site ID	<u>246971</u>
Ch 94 Load Status	<u>Projected Hydraulic Overload</u>	Municipality	<u>Todd Township</u>
Connection Status	<u>Self-Imposed Connection Prohibition</u>	County	<u>Fulton</u>
Date Application Received	<u>May 16, 2025</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>May 20, 2025</u>	If No, Reason	<u></u>
Purpose of Application	<u>NPDES permit renew.</u>		

Summary of Review

Todd Township Sewage Treatment Plant (STP) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on November 13, 2020, and became effective on December 1, 2020. The permit expired on November 30, 2025. The facility was in compliance on 1/16/2026.

The facility is located in Todd Township, Fulton County. The STP is owned and operated by Todd Township (Township) and serves a portion of the Township known as Knobsville. The STP has a design capacity of 0.0202 MGD, and discharges to Licking Creek (CWF).

WQM Part II permit No. 2987401 original and amendment were issued on 2/29/1988 & 10/30/2001. WQM No. 2987401 A-4 Amendment was issued on 11/26/2024 to replace WQM No. 2987401 A-3 dated 9/19/2023, because of the increased budget to eliminate item # 3: *Chlorine Contact Tank, Metering Manhole, Dechlorination Tank, and Reaeration Manhole.*

Sludge use and disposal description and location(s): N/A because sludge hauling by facility's contractor.

Changes from the previous permit: The E. Coli monitoring and report requirements will be added to the proposed permit. The Raw Sewage Influent "Report Daily Maximum" concentration mg/L of BOD₅ & TSS are included to the proposed permit because they were missing in the previous permit.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		<i>Hilaryle</i> Hilary H. Le / Environmental Engineering Specialist	January 23, 2026
x		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	February 23, 2026

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.02
Latitude	40° 0' 43.58"	Longitude	-77° 57' 59.68"
Quad Name	Burnt Cabins	Quad Code	
Wastewater Description: Sewage Effluent			
Receiving Waters	Licking Creek (CWF)	Stream Code	60309
NHD Com ID	49470614	RMI	42.3 miles
Drainage Area	9.2 mi. ²	Yield (cfs/mi ²)	0.109 (0.11)
Q ₇₋₁₀ Flow (cfs)	1.0	Q ₇₋₁₀ Basis	USGS StreamStats
Elevation (ft)	940	Slope (ft/ft)	
Watershed No.	13-B	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Name		
Nearest Downstream Public Water Supply Intake	City of Hagerstown-R.C. Wilson WTP		
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 55.0 miles

Changes Since Last Permit Issuance:

Drainage Area

The discharge on Licking Creek is to Little Juniata River at RMI 42.3 miles. A drainage area upstream of the discharge is estimated to be 9.2 mi.², according to USGS PA StreamStats available at <https://streamstats.usgs.gov/ss/>.

Stream Flow

According to StreamStats, the point of first use has a Q₇₋₁₀ of 1.0 cfs and a drainage area of 9.2 mi.², which results in a Q₇₋₁₀ low flow yield of 0.11 cfs/mi.². This is relatively low Q₇₋₁₀, but it is consistent with the known geologic features of the area. This information is used to obtain a chronic or 30-day (Q₃₀₋₁₀), and an acute or 1-day (Q₁₋₁₀) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

$$\begin{aligned}
 Q_{7-10} &= 1.0 \text{ cfs} \\
 \text{Low Flow Yield} &= 1.0 \text{ cfs} / 9.2 \text{ mi.}^2 = 0.11 \text{ cfs/mi.}^2 \\
 Q_{30-10} &= 1.36 * 1.0 \text{ cfs} = 1.36 \text{ cfs} \\
 Q_{1-10} &= 0.64 * 1.0 \text{ cfs} = 0.64 \text{ cfs}
 \end{aligned}$$

The resulting Q₇₋₁₀ dilution ratio is: $Q_{\text{stream}} / Q_{\text{discharge}} = 1.0 \text{ cfs} / [0.0202 \text{ MGD} * (1.547 \text{ cfs/MGD})] = 32.0:1$

Licking Creek

25 Pa Code § 93.9z classifies Licking Creek as cold-water fish (CWF) surface water. Based on the 2024 Integrated Report, Licking Creek is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Public Water Supply

The nearest downstream water supply intake is for the City of Hagerstown on the Potomac River. The distance downstream from the outfall to the intake is approximately 55 miles. Due to the distance and dilution, the discharge is not expected to impact the water supply.

Treatment Facility Summary

Treatment Facility Name: Todd Township STP				
WQM Permit No.		Issuance Date		
2987401		2/29/1988		
2987401 A-1		10/30/2001		
2987401 A-4		11/26/2024		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Hypochlorite	0.02
Hydraulic Capacity (MGD)				
Organic Capacity (lbs/day)		Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0202		Projected Hydraulic Overload	Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance:

Other Comments:

The facility is a 20,200 GPD system with the following treatment units:

- One (1), Lift Station
- One (1), Aeration Tank
- One (1), Settling Tank
- One (1), Chlorine Contact Tank
- One (1), Dechlorination Tank
- One (1), Post Aeration Tank
- One (1), Sludge Holding Tank

Sodium Hypochlorite is used for disinfection. Sodium Sulfite Tablets are used for dechlorination. Hydrated Lime is used for pH adjustment.

Biosolids:

The total sewage sludge/biosolids production within the facility for the previous year was 1.001 dry tons.

Compliance History	
Summary of DMRs:	DMRs reported in the last 12 months are summarized on the next page.
Summary of Inspections:	10/29/2025: Mr. Clark, DEP WQS, conducted a routine follow-up inspection. A violation was noted during inspection 25 Pa. Code 92A.41(C): NPDES – discharge contained floating materials, scum, sheen, foam, oil, grease or substance that produced an observable change or resulted in deposits in receiving waters. Deposition of sewage solids beneath and downstream of outfall 001. Recommendations were to continue with repairs to the clarifier and keep flow meter flume clear.
Other comments:	There are no open violations associated with the permittee or the facility.

Compliance History

DMR Data for Outfall 001 (from December 1, 2024 to November 30, 2025)

Parameter	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24
Flow (MGD) Average Monthly	0.0085	0.0086	0.0073	0.0105	0.0130	0.01858	0.0212		0.00052	0.0108	0.0072	0.00775
Flow (MGD) Daily Maximum	0.0189	0.0098	0.0083	0.0186	0.0150	0.02205	0.0257		0.00939	0.0126	0.0118	0.01027
pH (S.U.) Daily Minimum	7.4	7.2	7.8	7.2	7.0	6.7	7.3		7.5	7.4	7.1	7.2
pH (S.U.) Instantaneous Maximum	8.1	8.1	8.2	8.1	8.2	8.1	8.2		7.9	7.9	8.0	7.9
DO (mg/L) Daily Minimum	3.8	7.5	7.7	5.4	0.4	6.1	5.9		10.0	6.8	9.4	7.1
TRC (mg/L) Average Monthly	0.15	0.24	0.26	0.12	0.1	0.08	0.18		0.04	0.02	0.03	0.21
TRC (mg/L) Instantaneous Maximum	0.34	1.0	1.15	0.78	0.6	0.41	0.51		0.05	0.07	0.19	0.49
CBOD5 (lbs/day) Average Monthly	0.2	0.2	0.1	1.0	2.0	0.7	GG		GG	0.4	0.2	0.2
CBOD5 (lbs/day) Weekly Average	0.3	0.3	0.1	2.0	4.0	0.8	GG		GG	0.5	0.2	0.2
CBOD5 (mg/L) Average Monthly	3.8	3.1	2.2	15.66	15.24	3.89	21.0		GG	4.7	3.84	4.64
CBOD5 (mg/L) Weekly Average	4.2	3.8	2.4	24.9	37.4	4.78	21.0		GG	6.4	4.67	6.28
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	7	19	15	18	11	27	GG	GG	GG	16	7	18
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	11	20	15	19	12	34	GG	GG	GG	20	9	30
BOD5 (mg/L) Raw Sewage Influent Average Monthly	109.7	253	244	220	106	148	85	198	125.2	194	138	323
TSS (lbs/day) Average Monthly	1.0	2	0.4	16	3	3.0	GG		GG	0.6	0.3	0.5
TSS (lbs/day) Raw Sewage Influent Average Monthly	4	13	7	10	9	9	GG	GG	GG	13	4	18

**NPDES Permit Fact Sheet
Todd Township STP**

NPDES Permit No. PA0083585

TSS (lbs/day) Raw Sewage Influent Daily Maximum	5	19	9	11	10	14	GG	GG	GG	16	5	31
TSS (lbs/day) Weekly Average	1.0	2.0	0.5	22.0	5.0	4.0	GG		GG	0.6	0.3	0.5
TSS (mg/L) Average Monthly	15.4	21.8	5.9	213	31.5	18.4	11.6		GG	6.8	5.8	10.8
TSS (mg/L) Raw Sewage Influent Average Monthly	65.2	200.2	111.3	126	86	42	52	76	63	150	72	329
TSS (mg/L) Weekly Average	22.8	24.0	7.8	330	56.0	32	11.6		GG	7.2	6.0	14.4
Fecal Coliform (No./100 ml) Geometric Mean	770	116	104	2367	50270	3446	9678.4		GG	88	102	779.4
Fecal Coliform (No./100 ml) Instantaneous Maximum	3900	236	140	3466	2495000	6867	9678.4		GG	168	174	1461.6
Nitrate-Nitrite (mg/L) Average Monthly	31	24.9	9.0	20.46	7.9	10.49	2.85		GG	18.82	30.62	29.39
Total Nitrogen (mg/L) Average Monthly	33.47	27.25	11.09	21.15	16.6	17.11	21.08		GG	19.32	31.78	29.89
Ammonia (mg/L) Average Monthly	0.19	0.18	0.71	0.17	8.56	5.29	10.47		GG	< 0.1	0.1	0.21
TKN (mg/L) Average Monthly	2.47	2.4	2.09	0.69	8.67	6.62	18.23		GG	< 0.5	1.16	< 0.5
Total Phosphorus (mg/L) Average Monthly	4.02	4.21	4.01	7.31	3.71	1.2	2.1		GG	1.85	2.86	3.39

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD ₅	4.2	6.7 Weekly Avg	XXX	25.0	40.0	50.0	2/month	8-Hr Composite
BOD ₅ Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	5.0	7.6	XXX	30.0	45.0	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

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	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD ₅	4.2	6.7	XXX	25.0	40.0	50.0	2/month	8-Hr Composite
BOD ₅ Raw Sewage Influent	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	8-Hr Composite
TSS	5.0	7.6	XXX	30.0	45.0	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001	Design Flow (MGD) 0.02
Latitude 40° 0' 43.58"	Longitude -77° 57' 59.68"
Wastewater Description: Sewage Effluent	

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

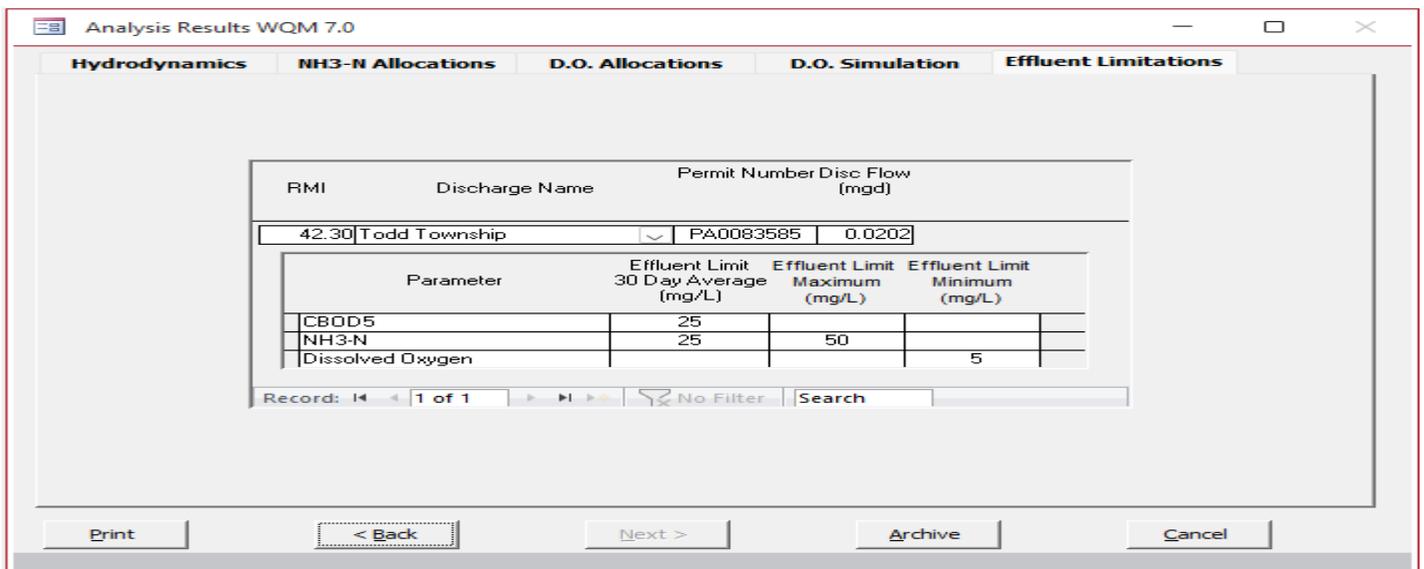
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
CBOD ₅	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	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)

Water Quality-Based Limitations

Ammonia (NH₃-N):

NH₃-N calculations were based on the Department’s Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH₃-N criteria used in the attached computer model of the stream:

- Discharge pH 7.0 (Default per 391-2000-007)
- Discharge Temperature 25°C (Default per 391-2000-007)
- Stream pH 7.0 (Default per 391-2000-006)
- Stream Temperature 20°C (Default for WWF per 391-2000-003)
- Background NH₃-N 0 mg/L (Assumed since no nearby upstream WWTPs)



The model input data and results are attached. The printout of the WQM 7.0 output indicates that at a discharge of 0.020 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 25.0 mg/L NH₃-N as a monthly average and 50.0 mg/L NH₃-N instantaneous maximum are necessary to protect the aquatic life at the discharge point from toxicity effects. However, based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013), no NH₃-N effluent limit will be imposed.

Carbonaceous Biochemical Oxygen Demand (CBOD₅):

The attached computer printout of the WQM 7.0 stream model indicates that a monthly average limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. Therefore, the existing limits of 25.0 mg/L average monthly (AML), 40.0 mg/L average weekly limit (AWL), and 50.0 mg/L instantaneous maximum (IMAX) will remain in the proposed permit as per guidance document 391-2000-014. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

$$\begin{aligned} \text{Average monthly mass limit: } & 25.0 \text{ mg/L} \times 0.0202 \text{ MGD} \times 8.34 = 4.2 \text{ lbs/day} \\ \text{Average weekly mass limit: } & 40.0 \text{ mg/L} \times 0.0202 \text{ MGD} \times 8.34 = 6.74 \text{ lbs/day} \end{aligned}$$

Dissolved Oxygen (D.O.):

A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. This is consistent with the previous permit and current Department criteria.

Total Suspended Solids (TSS):

There is no water quality criterion for TSS. A limit of 30.0 mg/L AML and 60.0 mg/L IMAX will be required based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1) and 25 Pa. Code § 92a.47(a)(1), and an AWL of 45.0 mg/L per 40 CFR 133.102(b)(2) and 25 Pa. Code § 92a.47(a)(2). Mass limits are calculated as follows:

$$\begin{aligned} \text{Average monthly mass limit: } & 30.0 \text{ mg/L} \times 0.0202 \text{ MGD} \times 8.34 = 5.0 \text{ lbs/day} \\ \text{Average weekly mass limit: } & 45.0 \text{ mg/L} \times 0.0202 \text{ MGD} \times 8.34 = 7.58 \text{ (7.6) lbs/day} \end{aligned}$$

pH:

The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(2).

Fecal Coliform:

The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100 ml and 25 Pa. Code § 92a.47.(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean and an instantaneous maximum not greater than 10,000/100 ml.

E. Coli:

As recommended by DEP's SOP No. BCW-PMT-033, version 2.0 revised February 5, 2024, routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/year will be included in the permit to be consistent with the recommendation from this SOP.

Biosolids Management:

Approximately 6,000 - 10,000 gallons of 1.5% activated sludge are wasted from the biological treatment process on a quarterly basis and disposed of at McConnellsburg Sewage Authority's WWTP under DEP NPDES Permit No. PA0020508.

Toxics:

This is a minor sewage facility receiving domestic wastewater only and the current application does not require sampling of toxic pollutants (or heavy metals) for those facilities with design flows less than 0.1 MGD. Therefore, no reasonable potential analysis for toxic pollutants has been performed for this permit renewal.

Total Residual Chlorine (TRC):

The attached computer printout utilizes the equations and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine, dated 11/15/94 (ID No. 391-2000-015) for developing chlorine limitations. The attached printout indicates that an average monthly water quality limit of 0.5 mg/L and 1.6 mg/L max daily would be needed to prevent toxicity concerns. This is consistent with the existing permit. The treatment facility meets this limit.

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9					
1	= Q stream (cfs)	0.5	= CV Daily		
0.0202	= Q discharge (MGD)	0.5	= CV Hourly		
30	= no. samples	1	= AFC_Partial Mix Factor		
0.3	= Chlorine Demand of Stream	1	= AFC_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 = 10.227		1.3.2.iii	WLA_cfc = 9.963
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373		5.1c	LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 3.811		5.1d	LTA_cfc = 5.792
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				

Influent BOD₅ and TSS Monitoring:

The permit will include influent BOD₅ and TSS monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements, per DEP policy.

Chesapeake Bay Strategy:

The Department formulated a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). Sewage discharges have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual loading caps based on their design flow on August 29, 2005, and concentrations of 6.0 mg/L TN and 0.8 mg/L TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. Phase 4 (0.2 -0.4 MGD) will be required to monitor and report TN and TP during permit renewal monthly and Phase 5 (below 0.2 MGD) will monitor during current permit renewal once a year unless two years of monitoring are completed and documented. Any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away. This plant is classified as a phase 5 and will be required to monitor and report Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, Total Phosphorus, and Total Nitrogen. The one per month monitoring and reporting requirements for these parameters will remain in the proposed permit.

Stormwater:

There is no known stormwater outfalls associated with this facility.

Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that the existing in-stream water used and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

NPDES Permit Fact Sheet
Todd Township STP
Class A Wild Trout Fisheries

NPDES Permit No. PA0083585

No Class A Wild Trout Fisheries are impacted by this discharge.

303d Listed Streams:

The discharge is not located on a 303d listed stream segment.

WQM 7.0 Data:

- * Discharge pH 7.0 (Default per 391-2000-007)
- * Discharge Temperature 25°C (Default per 391-2000-007)
- * Stream pH 7.0 (Default per 391-2000-006)
- * Stream Temperature 20°C (Default for WWF per 391-2000-003)
- * Background NH₃-N 0 mg/L (Assumed since no nearby upstream WWTPs)

Node 1: Outfall 001 on Licking Creek (60309)
 Elevation: 940 ft (USGS National Map Viewer)
 Drainage Area: 9.2 mi.² (USGS PA StreamStats)
 River Mile Index: 42.3 (PA DEP eMapPA)
 Q₇₋₁₀ Low Flow Yield: 0.11 cfs/mi.²
 Discharge Flow: 0.020 MGD (NPDES permit)

Node 2: Just before confluence Trib. 60820 to Licking Creek
 Elevation: 911 ft (USGS National Map Viewer)
 Drainage Area: 9.65 mi.² (USGS PA StreamStats)
 River Mile Index: 41.7 (PA DEP eMapPA)
 Q₇₋₁₀ Low Flow Yield: 0.11 cfs/mi.²
 Discharge Flow: 0.000 MGD

Analysis Results WQM 7.0

Hydrodynamics | **NH3-N Allocations** | D.O. Allocations | D.O. Simulation | **Effluent Limitations**

RMI	Discharge Name	Permit Number	Disc Flow (mgd)
42.30	Todd Township	PA0083585	0.0202

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	25	50	
Dissolved Oxygen			5

Record: 1 of 1 | No Filter | Search

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rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
138	80309	LICKING CREEK

ROW	Name	Permit Number	Disc. Flow (mgd)	Parameter	Eff. Limit 30day Avg. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
42.300	Toad Twp	PA0083585	0.020	CSBOD5	25		
				NH3-N	25	30	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
138	80309	LICKING CREEK

NH3-N Acute Allocations

ROW	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
42.300	Toad Twp	16.45	50	16.45	50	0	0

NH3-N Chronic Allocations

ROW	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
42.300	Toad Twp	1.87	25	1.87	25	0	0

Dissolved Oxygen Allocations

ROW	Discharge Name	CSBOD5		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)		
42.300	Toad Twp	25	25	25	25	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
138	80309	LICKING CREEK

ROW	Initial Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
42.300	0.020	20.148	7.000

Reach Width (ft)	Reach Depth (ft)	Reach WQ Ratio	Reach Velocity (fps)
14.386	0.915	28.310	0.150

Reach CSBOD5 (mg/L)	Reach NH3 (mg/L)	Reach NH3-N (mg/L)	Reach DO (mg/L)
2.68	0.30	0.74	6.706

Reach K1 (1/day)	Reach K2 (1/day)	K1 Equation	Reach DO Goal (mg/L)
8.547	12.116	Faloutsou	6

Reach Travel Time (days)	Subreach Results			
0.264	Time (days)	CSBOD5 (mg/L)	NH3-N (mg/L)	O.D. (mg/L)
	0.028	2.86	0.73	8.22
	0.053	2.83	0.71	8.22
	0.079	2.81	0.70	8.22
	0.108	2.56	0.69	8.22
	0.132	2.36	0.66	8.22
	0.158	2.33	0.66	8.22
	0.185	2.31	0.65	8.22
	0.211	2.49	0.64	8.22
	0.238	2.46	0.63	8.22
	0.264	2.44	0.62	8.22

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Value	Use Inputted Q1-10 and Q10-10 Flows
WLA Method	EMPA	<input type="checkbox"/>
Q1-10/Q1-10 Ratio	0.94	<input type="checkbox"/>
Q10-10/Q1-10 Ratio	1.36	<input type="checkbox"/>
D.O. Saturation	90.00%	<input checked="" type="checkbox"/>
D.O. Goal	6	<input checked="" type="checkbox"/>
		Use Inputted WQ Ratio
		Use Inputted Reach Travel Times
		Temperature Adjust K1
		Use Balanced Technology

Wednesday, January 21, 2026 Version 1.1 Page 1 of 1

rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin		Stream Code		Stream Name									
138	80309	LICKING CREEK											
RMB	Stream Flow	PWS Flow	Flow	Disc Flow	Reach Flow	Depth	Width	WQ Ratio	Velocity	Reach Time	Analysis Temp	Analysis pH	
(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/s)	(days)	(°C)		
Q7-10 Flow													
42.300	1.01	0.00	1.01	.0309	0.0309	.515	14.59	28.32	0.14	0.284	20.15	7.00	
Q1-10 Flow													
42.300	0.65	0.00	0.65	.0309	0.0309	NA	NA	NA	0.11	0.336	20.23	7.00	
Q30-10 Flow													
42.300	1.38	0.00	1.38	.0309	0.0309	NA	NA	NA	0.16	0.223	20.11	7.00	

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMB	Elevation	Drainage Area	Slope	PWS Withdrawal	Apply F.C.
138	80309	LICKING CREEK	42.300	940.00	9.20	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY (d/m)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Flow Time (days)	Rch Velocity (ft/s)	WQ Ratio	Rch Width (ft)	Rch Depth (ft)	Temp (°C)	Tributary Temp (°C)	Stream Temp (°C)	pH
Q7-10	0.110	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	0.00	0.000	0.000							
Q30-10	0.00	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
Total Trip	PA0083585	0.0200	0.0200	0.0200	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)
CODCr	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMB	Elevation	Drainage Area	Slope	PWS Withdrawal	Apply F.C.
138	80309	LICKING CREEK	41.700	911.00	9.85	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY (d/m)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Flow Time (days)	Rch Velocity (ft/s)	WQ Ratio	Rch Width (ft)	Rch Depth (ft)	Temp (°C)	Tributary Temp (°C)	Stream Temp (°C)	pH
Q7-10	0.110	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	0.00	0.000	0.000							
Q30-10	0.00	0.00	0.00	0.000	0.000							

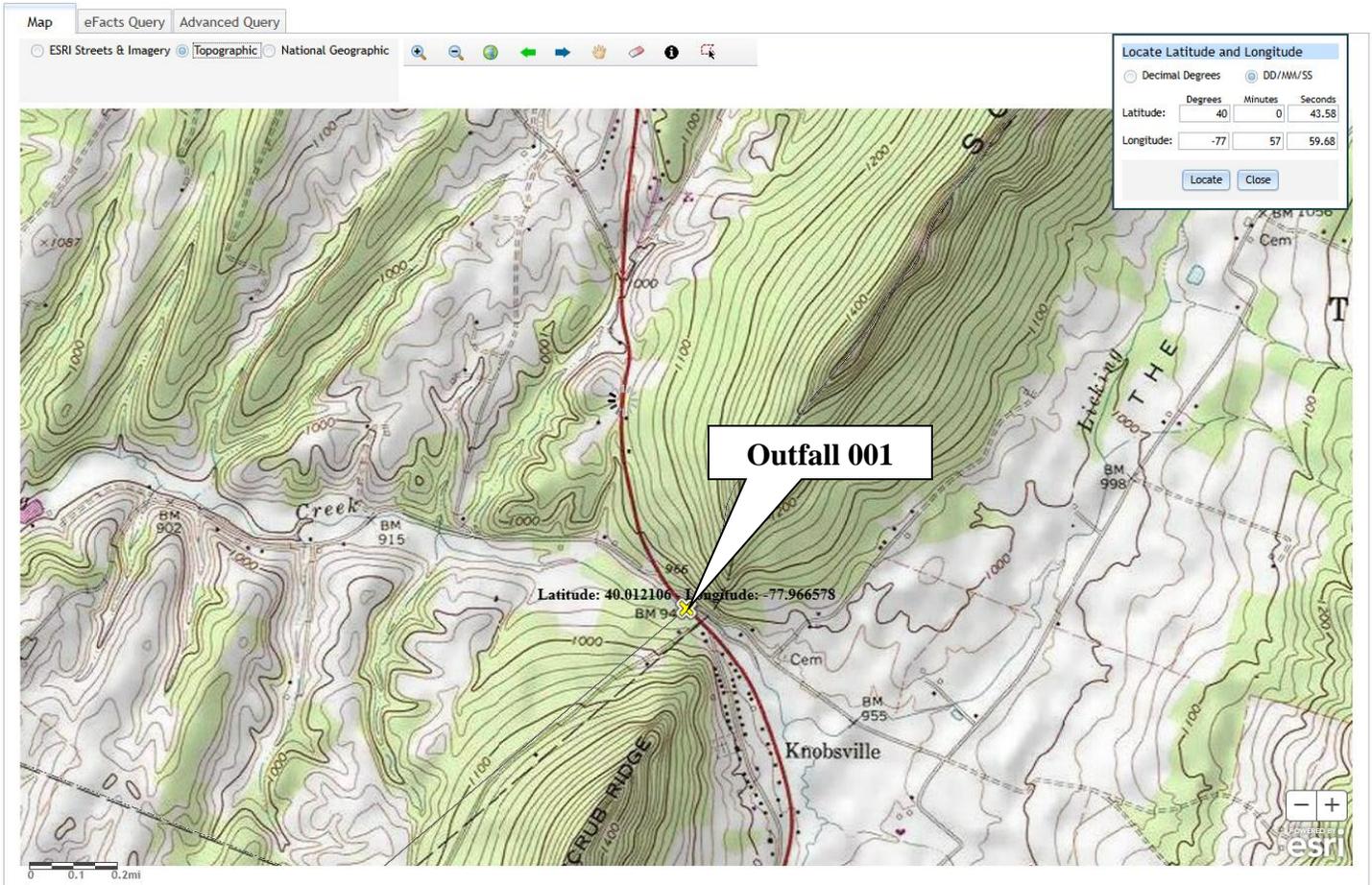
Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Total Trip	PA0083585	0.0200	0.0200	0.0200	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)
CODCr	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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The image shows the USGS StreamStats web interface. On the left, there is a sidebar with "Basin Characteristics" that can be edited. A table lists parameters and their values:

Parameter	Value
DRNAREA	9.2
PRECIP	40
STRDEN	1.85
ROCKDEP	5.2
CARBON	35.79

Below this table, there are checkboxes for "Basin Characteristics Report" and "Scenario Flow Reports". A blue "Open Report" button is at the bottom.

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	35.79	percent
DRNAREA	Area that drains to a point on a stream	9.2	square miles
PRECIP	Mean Annual Precipitation	40	inches
ROCKDEP	Depth to rock	5.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.85	miles per square mile

Low-Flow Statistics

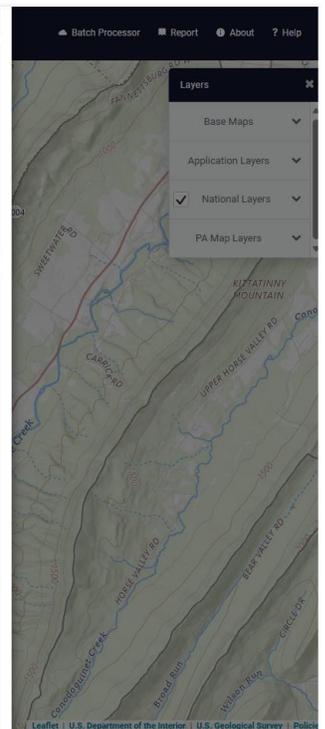
Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	35.79	percent	0	99
DRNAREA	Drainage Area	9.2	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
ROCKDEP	Depth to Rock	5.2	feet	3.32	5.65
STRDEN	Stream Density	1.85	miles per square mile	0.51	3.1

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

PII: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR²: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.66	ft ³ /s	38	38
30 Day 2 Year Low Flow	2	ft ³ /s	33	33
7 Day 10 Year Low Flow	0.992	ft ³ /s	51	51
30 Day 10 Year Low Flow	1.17	ft ³ /s	46	46
90 Day 10 Year Low Flow	1.49	ft ³ /s	36	36



Basin Characteristics

Parameter	Value
DRNAREA	9.65
PRECIP	39
STRDEN	1.82
ROCKDEP	5.1
CARBON	34.87

Select available reports to display:

- Basin Characteristics Report
- Scenario Flow Reports
- Hydrologic Features Report

[Open Report](#)

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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	34.87	percent
DRNAREA	Area that drains to a point on a stream	9.65	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	5.1	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.82	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	34.87	percent	0	99
DRNAREA	Drainage Area	9.65	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
ROCKDEP	Depth to Rock	5.1	feet	3.32	5.65
STRDEN	Stream Density	1.82	miles per square mile	0.51	3.1

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

PII: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR²: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.54	ft ³ /s	38	38
30 Day 2 Year Low Flow	1.88	ft ³ /s	33	33
7 Day 10 Year Low Flow	0.897	ft ³ /s	51	51
30 Day 10 Year Low Flow	1.08	ft ³ /s	46	46
90 Day 10 Year Low Flow	1.41	ft ³ /s	36	36

Layers

- Base Maps
- Application Layers
- National Layers
- PA Map Layers

Map labels: SHEEPWATER RD, CAMP RD, UPPER HORSE VALLEY RD, BEAR VALLEY RD, WILSON PLUG, CORKLE DR, FRANKLIN COUNTY, KITTANNY MOUNTAIN.

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input 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 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 checked="" 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 type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input 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 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 checked="" type="checkbox"/>	SOP: BCW-PMT-033
<input type="checkbox"/>	Other: [redacted]