Application Type	**Renewal**	Application No.	**PA0248088**
Facility Type	**Non-Municipal**	APS ID	**823945**
Major / Minor	**Minor**	Authorization ID	**1507279**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**PA American Water Co.**	Facility Name	**Franklin WWTP**
Applicant Address	852 Wesley Drive	Facility Address	55 Scott School Road
	Mechanicsburg, PA 17055-4436		Orrtanna, PA 17353-9639
Applicant Contact	Vincent Ortolani	Facility Contact	David Boore
Applicant Phone	(610) 406-1398	Facility Phone	(717) 689-0493
Client ID	87712	Site ID	665661
Ch 94 Load Status	Not Overloaded	Municipality	Franklin Township
Connection Status	No Limitations	County	Adams
Date Application Received	November 18, 2024	EPA Waived?	Yes
Date Application Accepted	November 21, 2024	If No, Reason	
Purpose of Application	NPDES permit renewal.		

Summary of Review

PA American Water Company submitted a NPDES renewal application for discharge of treated sewage from the Franklin Waste-Water Treatment Facility located in Franklin Township, Adams County. The permit was last issued on May 13, 2020, and became effective on June 1, 2020. The existing permit expired on May 31, 2025.

The Franklin Wastewater Treatment Facility has 70% sewers from Franklin Township and 30% sewer from Hamilton-Ban Township. The NPDES permit No. PA0248088 was amended on July 29, 2014, to correct the flow of 0.2 MGD while the hydraulic design flow of 0.5 MGD. The NPDES PA0248088 amendment was issued on 2/16/2022 to replace the chlorine monitor & requirements to UV light intensity (mW/cm^2) monitor & report.

The Water Quality Management (WQM) Permit No. 016404 was issued on April 17, 2007, and 016404 T-1 transfer was issued on April 22, 2014 to change the ownership from the Franklin Township, Adams County to Pennsylvania American Water Company. The WQM Part II 0106404 A-1 amendment was issued on July 1, 2020 to replace chlorine disinfection with UV disinfection.

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

Changes from the previous permit: The E. Coli. monitoring and report requirements will add to the proposed permit.

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

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	March 7, 2025
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	March 18, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.2
Latitude	39º 51' 47.00"	Longitude	-77º 19' 2.00"
Quad Name	Fairfield	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Marsh Creek (CWF)	Stream Code	59009
NHD Com ID	53319832	RMI	1.92 miles
Drainage Area	1.85 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	
Elevation (ft)	584	Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Regime Modification,		
Source(s) of Impairment	Highway/Road/Bridge Runoff (Non-Construction Related), Rural (Residential Areas)		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Gettysburg Municipal Authority, Adams County		
PWS Waters	Marsh Creek	Flow at Intake (cfs)	
PWS RMI	8.12 miles	Distance from Outfall (mi)	Approximate 9.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Unnamed Tributary 59009 to Marsh Creek at RMI 1.92 miles. A drainage area upstream of the discharge is estimated to be 1.85 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
The entire watershed of UNT 59009 is also too small. Therefore, the upper portion of Marsh Creek (until just after its confluence with Mummasburg Run) was chosen as a proper representative drainage area. According to USGS StreamStats, the Q_{7-10} at the exit point of this watershed is 1.11 cfs and the drainage area is 21.3 mi.^{2} which results in a Q_{7-10} low flow yield of 0.052 cfs/mi.^{2}. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

$$\text{Low Flow Yield} = 1.11 \text{ cfs} / 21.3 \text{ mi.}^2 \approx 0.052 \text{ cfs/mi.}^2$$
$$Q_{7-10} = 0.052 \text{ cfs/mi.}^2 * 1.85 \text{ mi.}^2 \approx 0.096 \text{ cfs}$$
$$Q_{30-10} = 1.36 * 0.096 \text{ cfs} \approx 0.13 \text{ cfs}$$
$$Q_{1-10} = 0.64 * 0.096 \text{ cfs} \approx 0.061 \text{ cfs}$$

The resulting dilution ratio (under Q_{7-10} conditions) is: $Q_{stream} / Q_{discharge}$ = 0.096 cfs / [0.20 MGD * (1.55 cfs/MGD)] = 0.3:1

Unnamed Tributary to Marsh Creek
25 Pa Code § 93.9z classifies Tributaries 59009 to Marsh Creek as cold-water fishes. The eMap PA lists Unnamed Tributary to Marsh Creek as impaired due to small residential runoff and road runoff caused by flow regime modification. A TMDL does not currently exist for this stream segment.

Public Water Supply
The nearest downstream public water supply is Gettysburg Municipal Authority facility, Adams County on Marsh Creek Reservoir, approximately 9.0 miles downstream of the discharge point. Based on the nature of discharge, the discharge is not expected to impact the public water supply standards.

Treatment Facility Summary				
Treatment Facility Name: Franklin Township Cashtown Mcknightstown STP				
WQM Permit No.	**Issuance Date**			
0106404	4/17/2007			
0106404 T-1	4/22/2014			
0106404 A-1	7/1/2020			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia And Phosphorus	Sequencing Batch Reactor	Ultraviolet	0.2
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.5	459	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance:

Other Comments:
The WWTP train is as follows:

Mechanical Screen (1) ⇒ Bar Screen (1) ⇒ SBR Tanks (2) ⇒ UV Disinfection (1) ⇒ Cascade (1) ⇒ Discharge

Industrial/Commercial Users:
There are no industrial/commercial users contributing to this treatment plant.

Biosolids Management:
Liquid biosolids are hauled off site by facility's contractor.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in the Table below.
Summary of Inspections:	2/1/2024: Mr. Hoy, DEP WQS, conducted a compliance evaluation inspection. The discharge was clear. The field test results indicated in permit limits. There were no violations noted during inspection. Recommendation was to ensure the influent composite sampler has proper refrigeration. Requests were 1. Correct hauler name be provided on sludge hauling supplemental reports. 2. The sludge use and disposal records going back at least 5 years are readily available to review for future inspections. 3. The general work plan and system specific management plan completed, signed by the owner, and available for review upon request. 4. The composite samples are flow proportional to ensure samples are collected during discharges.
Other comments:	There are no open violations associated with this facility or permittee.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly	0.0552	0.0596	0.0545	0.0599	0.0573	0.0679	0.0546	0.0539	0.0656	0.1092	0.0987	0.0844
Flow (MGD) Daily Maximum	0.0751	0.1182	0.0765	0.1198	0.0927	0.2003	0.0748	0.0832	0.1208	0.4575	0.2173	0.1504
pH (S.U.) Daily Minimum	6.9	6.9	6.9	6.7	6.8	6.8	6.6	6.8	6.9	6.9	6.9	6.9
pH (S.U.) Instantaneous Maximum	7.6	7.8	7.4	7.5	7.1	7.3	7.2	7.3	7.3	8.1	7.4	7.3
DO (mg/L) Daily Minimum	6.3	6.1	5.5	5.8	5.4	5.3	5.1	5.2	5.2	5.9	5.9	5.9
CBOD5 (lbs/day) Average Monthly	< 3.0	3.0	< 2.0	3.0	3.0	< 2.0	4.0	2.0	< 1.0	< 3.0	< 3.0	< 2.0
CBOD5 (lbs/day) Weekly Average	5.0	4.0	4.0	5.0	4.0	4.0	4.0	2.0	2.0	< 5.0	3.0	3.0
CBOD5 (mg/L) Average Monthly	< 7.0	5.0	< 4.1	4.9	6.9	< 4.2	8.0	3.8	< 2.9	< 3.3	3.6	< 3.0
CBOD5 (mg/L) Weekly Average	9.9	7.6	6.9	8.7	6.9	5.8	9.8	4.0	3.6	4.9	5.1	3.6
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	110	144	125	152	119	110	86	308	303	293	332	222
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	129	261	191	250	128	189	98	489	336	550	420	261
BOD5 (mg/L) Raw Sewage Influent Average Monthly	249	247	250	291	232	239	200	608	617	340	486	302
TSS (lbs/day) Average Monthly	4.4	3.8	1.5	3.3	2.5	0.8	1.0	1.2	1.7	1.5	1.8	1.6
TSS (lbs/day) Raw Sewage Influent Average Monthly	63	181	138	193	147	144	77	398	423	180	268	275
TSS (lbs/day) Raw Sewage Influent Daily Maximum	84	335	187	348	185	244	109	496	519	248	285	408
TSS (lbs/day) Weekly Average	9.4	7.3	2.3	9.1	4.5	1.7	1.9	1.5	3.3	1.9	2.9	2.5

TSS (mg/L) Average Monthly	9.0	7.0	3.0	5.0	5.0	2.0	2.0	3.0	4.0	2.0	3.0	2.0
TSS (mg/L) Raw Sewage Influent Average Monthly	138	308	281	346	284	313	178	803	849	256	3585	398
TSS (mg/L) Weekly Average	19.0	17.0	5.0	10.0	8.0	4.0	5.0	4.0	7.0	3.0	3.0	2.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	3.0	1.0	< 1.0	< 1.0	39	68	5.0	1.0	< 1.0	2.0	1.0
UV Intensity (mW/cm²) Daily Minimum	66.3	66.7	66.9	69	66.1	62.6	68.3	67.3	70.7	71.8	69.9	69.9
Nitrate-Nitrite (mg/L) Average Monthly	< 5.78	< 18.8	< 20.9	< 17.4	< 19.2	< 17.1	19.4	< 14.4	< 14.4	< 9.7	< 9.1	< 10.93
Nitrate-Nitrite (lbs) Total Monthly	< 69	< 394	< 274	< 259	< 10	< 217	< 272	231	231	< 196	< 195	< 202
Total Nitrogen (lbs/day) Average Monthly	12.0	< 15	< 10	< 9.0	10	< 7.0	< 9.0	< 8.0	< 8.0	< 7.0	< 7.0	< 7.0
Total Nitrogen (mg/L) Average Monthly	31.28	< 20.7	< 22	< 17.9	19.72	< 18.2	< 20.3	< 15.2	< 16.4	< 10.3	9.6	< 11.43
Total Nitrogen (lbs) Total Annual		3579										
Ammonia (lbs/day) Average Monthly	8.3	1.0	< 0.6	< 0.06	< 0.05	< 0.05	< 0.04	< 0.05	< 0.09	< 0.1	< 0.08	< 0.3
Ammonia (mg/L) Average Monthly	18.0	< 2.0	< 1.0	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.25
Ammonia (lbs) Total Monthly	257.0	31.1	< 17.3	< 1.7	< 1.6	< 1.5	< 1.3	< 1.5	< 2.9	< 3.2	< 2.4	< 7.8
Ammonia (lbs) Total Annual		146										
TKN (mg/L) Average Monthly	26	< 2.0	< 1.1	< 0.5	< 0.57	< 1.1	< 0.9	< 0.8	2.0	< 0.5	< 0.5	< 0.5
TKN (lbs) Total Monthly	317	< 56	< 14	< 8.0	< 9.0	< 14	< 13	< 14.0	< 29	< 10	< 11.0	< 9.0
Total Phosphorus (lbs/day) Average Monthly	2.1	2.2	1.5	3.4	3.3	2.1	5.2	4.4	1.9	2.8	1.6	1.4
Total Phosphorus (mg/L) Average Monthly	5.2	3.3	3.6	6.3	5.7	5.3	12	7.8	3.5	4.1	2.5	2.2

Total Phosphorus (lbs) Total Monthly	63.9	69.5	46.3	106.8	99.0	66.0	180.4	130.8	58.0	79.0	49.7	39.7
Total Phosphorus (lbs) Total Annual		967										

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
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
$CBOD_5$	41.7	66.7 Wkly Avg	XXX	25.0	40.0	50.0	1/week	24-Hr Composite
TSS	50.0	75.1 Wkly Avg	XXX	30.0	45.0	60.0	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD_5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Ammonia May 1 - Oct 31	4.2	XXX	XXX	2.5	XXX	5.0	1/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	12.5	XXX	XXX	7.5	XXX	15.0	1/week	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Average Monthly	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	XXX	XXX	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.2
Latitude 39º 51' 47.00" **Longitude** -77º 19' 2.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

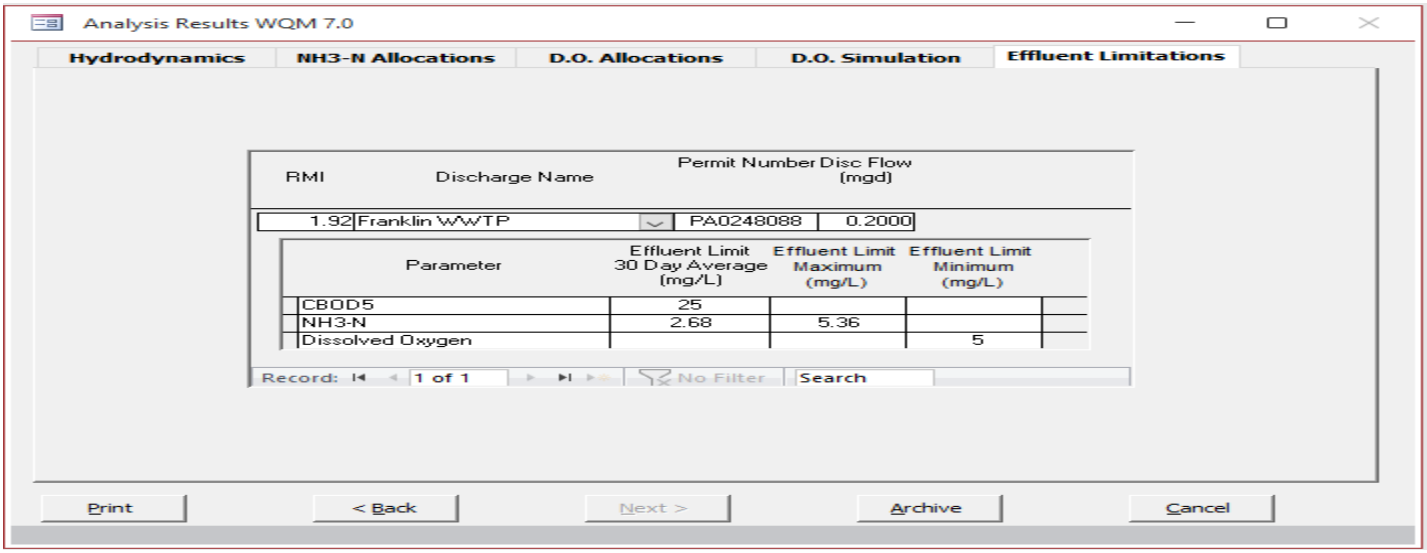
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	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 facility utilizes UV for disinfection.

Water Quality-Based Limitations

Ammonia (NH_3-N):
NH_3-N calculations were first 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 NH_3-N criteria used in the attached computer model of the stream:

Discharge pH	=	7.0	(Default)
Discharge Temperature	=	20°C	(Default)
Stream pH	=	7.0	(Default)
Stream Temperature	=	20ºC	(Default for CWF)
Background NH_3-N	=	0	(Default)



The model input data and results are attached. The printout of the WQM 7.0 output indicates that at a discharge of 0.200 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 2.5 mg/L NH_3-N as a monthly average and 5.0 mg/L NH_3-N instantaneous maximum are necessary to protect the aquatic life from toxicity effects. The existing summer limits of 2.5 mg/L and 5.0 mg/L will remain in the proposed permit. Mass limits are calculated as follows:

Average monthly summer mass limit: 2.5 mg/L x 0.20 MGD x 8.34 = 4.2 lbs/day

The winter effluent limit will be set at three-times the summer limits; therefore, the average monthly winter limit for NH_3-N will be 7.5 mg/L (2.5 mg/L x 3). For the same reason, the instantaneous maximum limit for the winter season will be 15 mg/L (5 mg/L x 3). Recent DMRs and inspection reports indicate that these limits are being attained easily.

Average monthly winter mass limit: 7.5 mg/L x 0.20 MGD x 8.34 = 12.5 lbs/day

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
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. 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 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:

Average monthly mass limit: 25.0 mg/L x 0.20 MGD x 8.34 = 41.7 (42.0) lbs/day
Average weekly mass limit: 40.0 mg/L x 0.20 MGD x 8.34 = 66.7 (67.0) lbs/day

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.

pH:
The effluent discharge pH should remain above 6 and below 9 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, a 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/quarter will be included in the permit to be consistent with the recommendation from this SOP.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. A limit of 30.0 mg/L AML 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 § 92a.47(a)(1), and an AWL of 45.0 mg/L per 40CFR 133.102(b)(2) and 25 PA § 92a.47(a)(2). Past DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Average monthly mass limit: 30.0 mg/L x 0.20 MGD x 8.34 = 50.0 lbs/day
Average weekly mass limit: 45.0 mg/L x 0.20 MGD x 8.34 = 75.1 lbs/day

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 I, II, and III) dischargers will receive annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/L TN and 0.8 mg/L TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. Phase IV (0.2 - 0.4 MGD) will be required to monitor and report TN and TP during permit renewal monthly and Phase V (below 0.2 MGD) will monitor during current permit renewal once a year. However, any facility in Phases IV and V that undergoes expansion is subjected to cap load right away. This plant is classified as phase IV, it will be required to monitor and report TP and TN 2/month. TN and TP "Monitor & Report" requirements will remain in the proposed permit.

UV:
The UV system daily monitor and report the UV light intensity (mW/cm^2) will remain in the proposed permit.

Additional Considerations

Flow Monitoring
The requirement to monitor the volume of effluent will remain in the proposed permit per 40 CFR § 122.44(i)(1)(ii).

Monitoring Frequency and Sample Type
The facility currently is required to collect daily effluent grab samples for D.O., and pH; one per week effluent 24-hr composite samples of $CBOD_5$, TSS, and Ammonia-Nitrogen; one per week effluent grab samples of Fecal Coliform; two per month effluent 24-hr composite samples of Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, and TP; and two per month effluent calculation samples of TN. Based on the best professional judgement of the author, the existing monitoring frequencies are sufficient and necessary. Therefore, the existing monitoring frequencies will remain the same as those specified in the proposed permit.

Antidegradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing in-stream water uses 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.

303d Listed Streams

eMap PA lists UNT to Marsh Creek as impaired at the discharge point for “flow regime modification” due to small residential runoff and road runoff. A TMDL has not yet been developed.

Class A Wild Trout Fisheries

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

WQM 7.0

Two nodes were incorporated in the modeling effort.

Discharge pH	=	7.0	(Default)
Discharge Temperature	=	20°C	(Default)
Stream pH	=	7.0	(Default)
Stream Temperature	=	20°C	(Default for CWF)
Background NH_3-N	=	0	(Default)

Node 1: Outfall 001 on UNT Marsh Creek (59009)

Elevation:	584 ft (USGS National Map Viewer)
Drainage Area:	1.85 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	1.92 (PA DEP eMapPA)
Low Flow Yield:	0.052 $cfs/mi.^2$
Discharge Flow:	0.200 MGD (NPDES Application)

Node 2: Just before confluence with UNT Marsh Creek with Marsh Creek

Elevation:	539 ft (USGS National Map Viewer)
Drainage Area:	3.05 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	0.001 (PA DEP eMapPA)
Low Flow Yield:	0.052 $cfs/mi.^2$
Discharge Flow:	0.000 MGD

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	Daily 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
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
CBOD5	41.7	66.7	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report Wkly Avg	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	50.0	75.1	XXX	30.0	45.0	60	1/week	24-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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Ammonia Nov 1 - Apr 30	12.5	XXX	XXX	7.5	XXX	15	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	4.2	XXX	XXX	2.5	XXX	5	1/week	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite

Compliance Sampling Location:

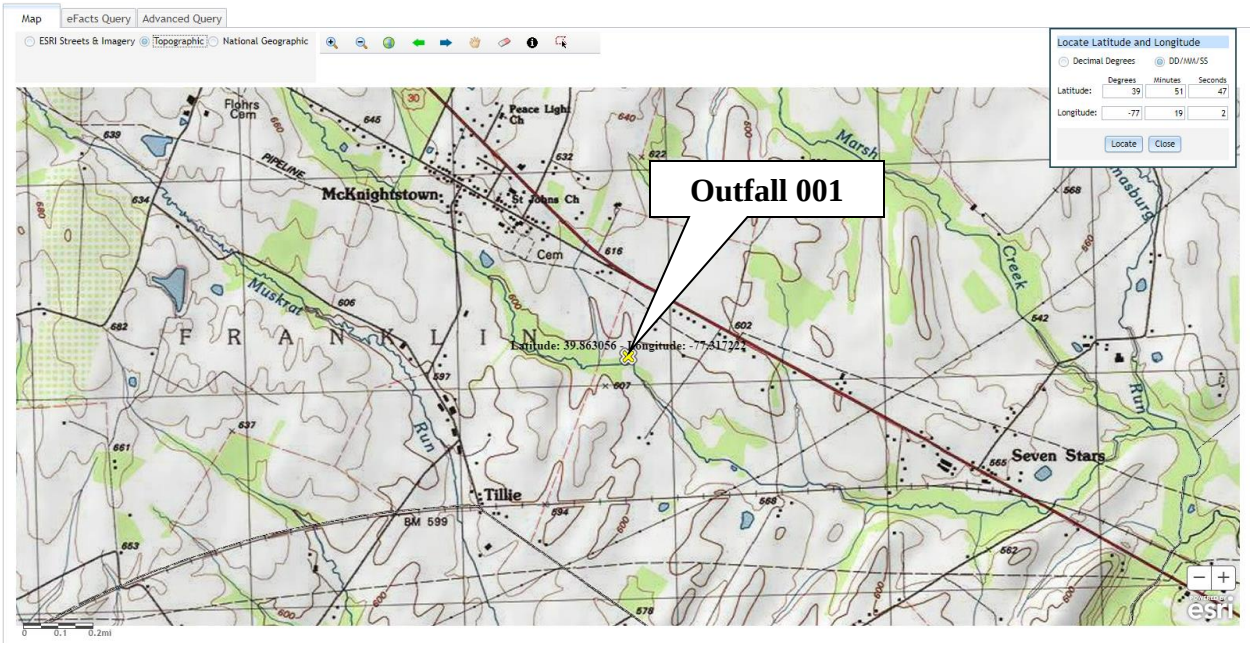
Other Comments:

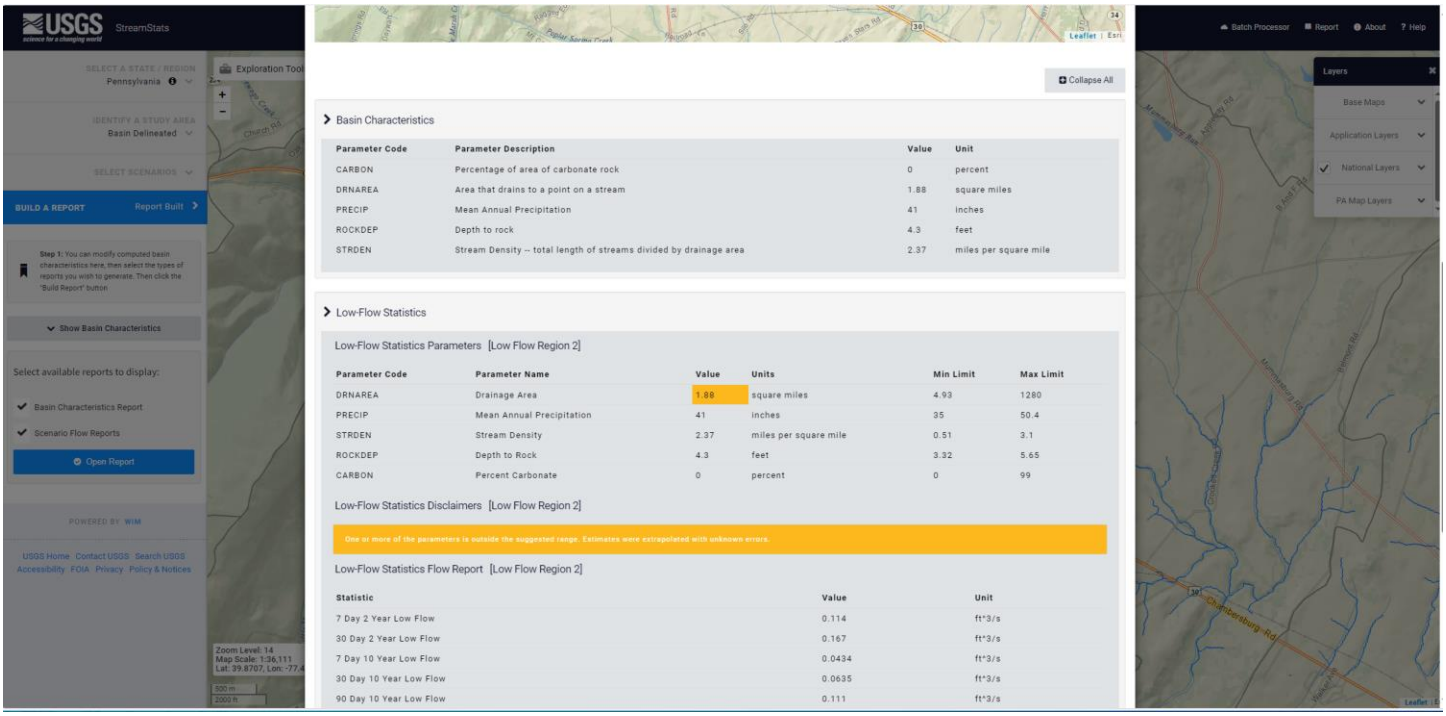
Proposed Effluent Limitations and Monitoring Requirements

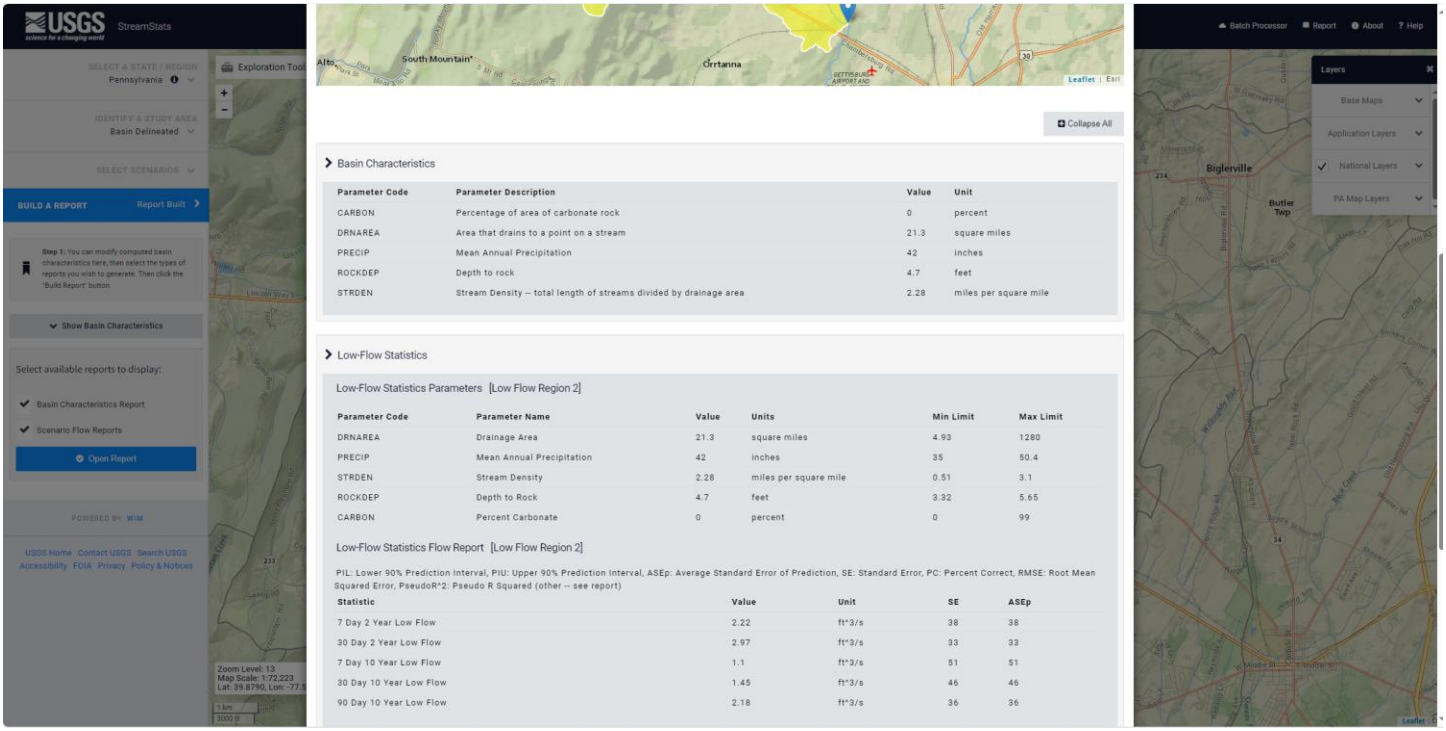
The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

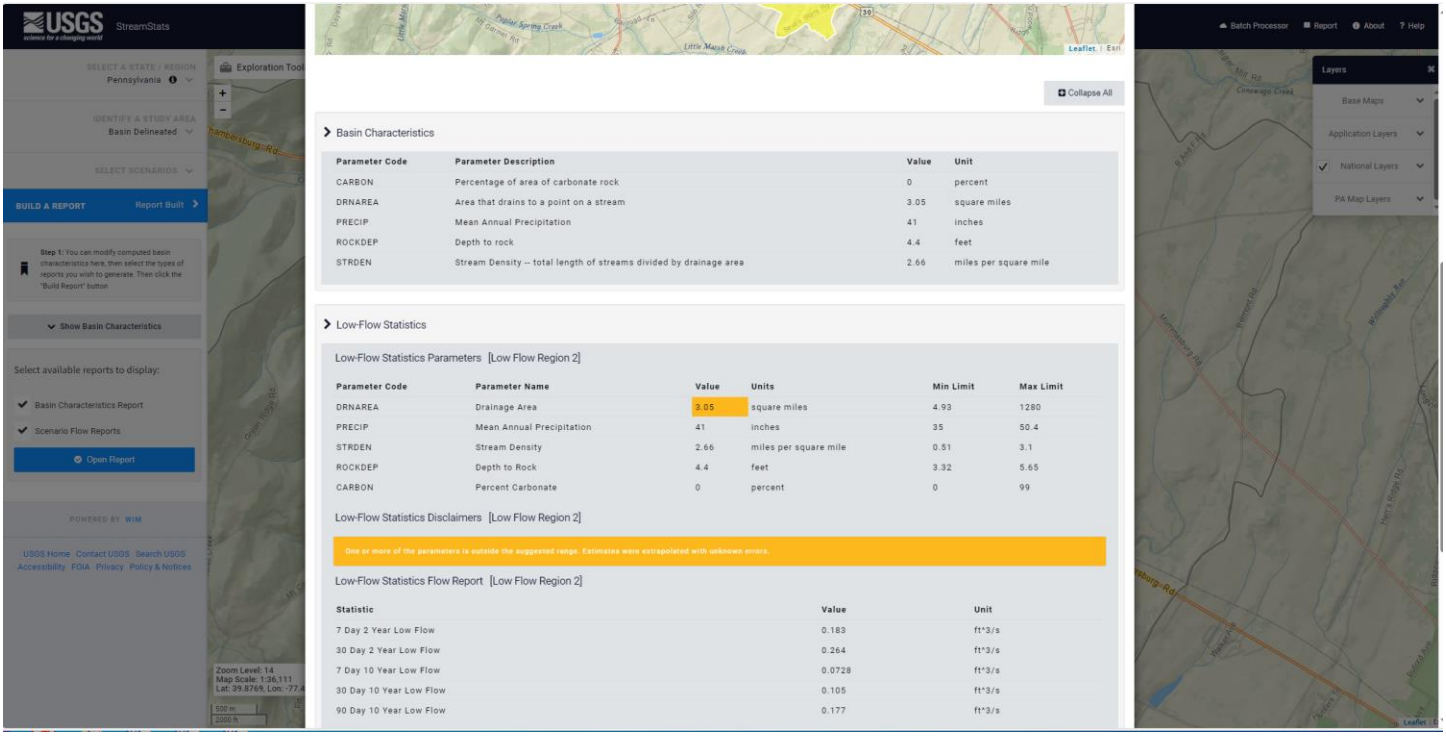
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date

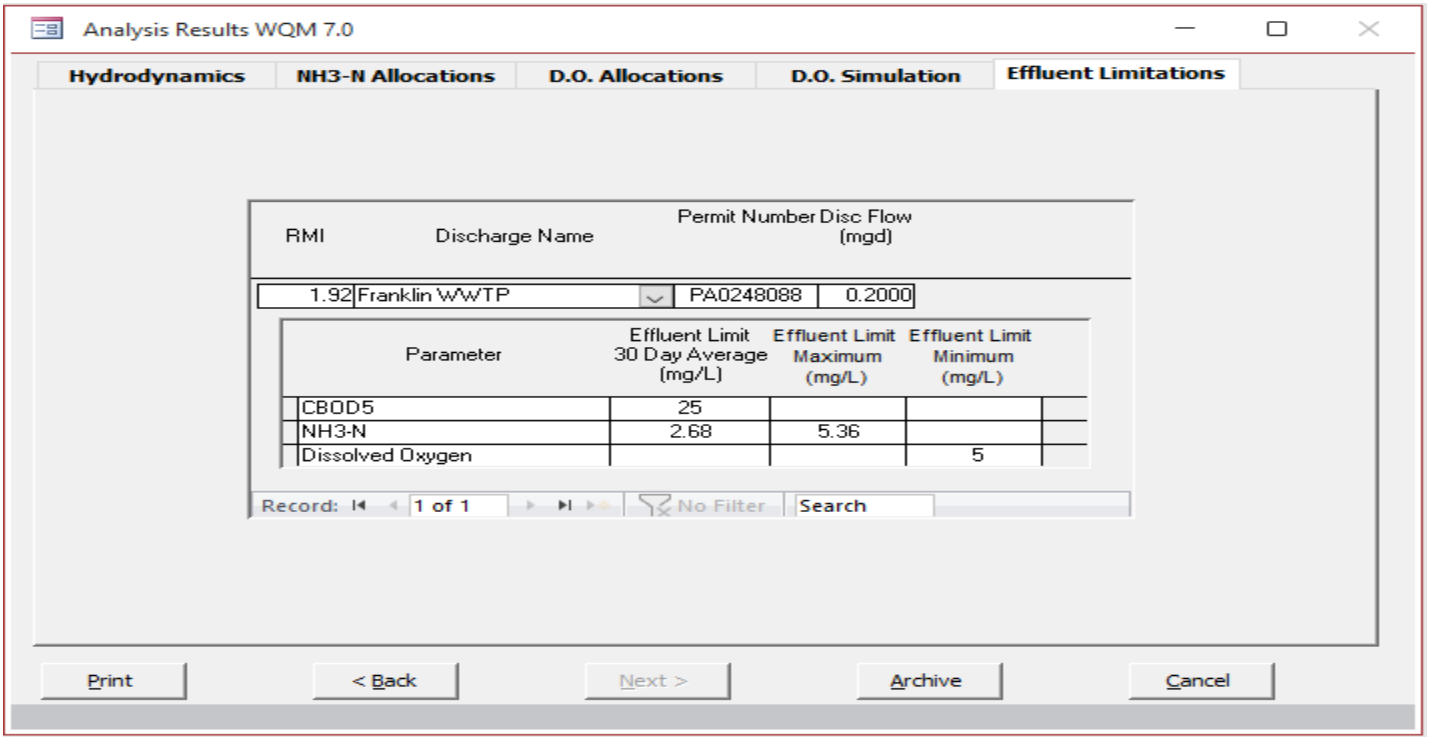
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Average Monthly	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	XXX	XXX	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/month	24-Hr Composite


Map
eFacts Query
Advanced Query
ESRI Streets & Imagery
Topographic
National Geographic
Locate Latitude and Longitude
Decimal Degrees
DD/MM/SS
Degrees
Minutes
Seconds
Latitude: 39 51 47
Longitude: -77 19 2
Locate
Close
Outfall 001
Latitude: 39.863056 , Longitude: -77.317222
McKnightstown
St Johns Ch
Peace Light Ch
Flohrs Cem
Cem
PIPELINE
Muskrat
F R A N K L I N
Tillie
BM 599
Seven Stars
Marsh
Creek
Run
esri


USGS
StreamStats
Exploration Tool
Pennsylvania
Basin Delineated
BUILD A REPORT
Report Built
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 1.88 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4.3 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 2.37 | 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
DRNAREA | Drainage Area | 1.88 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
STRDEN | Stream Density | 2.37 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 4.3 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 0 | percent | 0 | 99
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.114 | ft^3/s
30 Day 2 Year Low Flow | 0.167 | ft^3/s
7 Day 10 Year Low Flow | 0.0434 | ft^3/s
30 Day 10 Year Low Flow | 0.0635 | ft^3/s
90 Day 10 Year Low Flow | 0.111 | ft^3/s
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers


USGS StreamStats
Pennsylvania
Basin Delineated
BUILD A REPORT
Report Built
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 21.3 | square miles
PRECIP | Mean Annual Precipitation | 42 | inches
ROCKDEP | Depth to rock | 4.7 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 2.28 | 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
DRNAREA | Drainage Area | 21.3 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 42 | inches | 35 | 50.4
STRDEN | Stream Density | 2.28 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 4.7 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 0 | percent | 0 | 99
Low-Flow Statistics Flow Report [Low Flow Region 2]
PIL: 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, PseudoR^2: Pseudo R Squared (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 2.22 | ft^3/s | 38 | 38
30 Day 2 Year Low Flow | 2.97 | ft^3/s | 33 | 33
7 Day 10 Year Low Flow | 1.1 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 1.45 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 2.18 | ft^3/s | 36 | 36
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Biglerville
Butler Twp


USGS StreamStats
Pennsylvania
Basin Delineated
BUILD A REPORT
Report Built
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 3.05 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4.4 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 2.66 | 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
DRNAREA | Drainage Area | 3.05 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
STRDEN | Stream Density | 2.66 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 4.4 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 0 | percent | 0 | 99
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.183 | ft^3/s
30 Day 2 Year Low Flow | 0.264 | ft^3/s
7 Day 10 Year Low Flow | 0.0728 | ft^3/s
30 Day 10 Year Low Flow | 0.105 | ft^3/s
90 Day 10 Year Low Flow | 0.177 | ft^3/s
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers


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)
1.92
Franklin WWTP
PA0248088
0.2000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
2.68
5.36
Dissolved Oxygen
5
Record: 1 of 1
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Search
Print
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Next >
Archive
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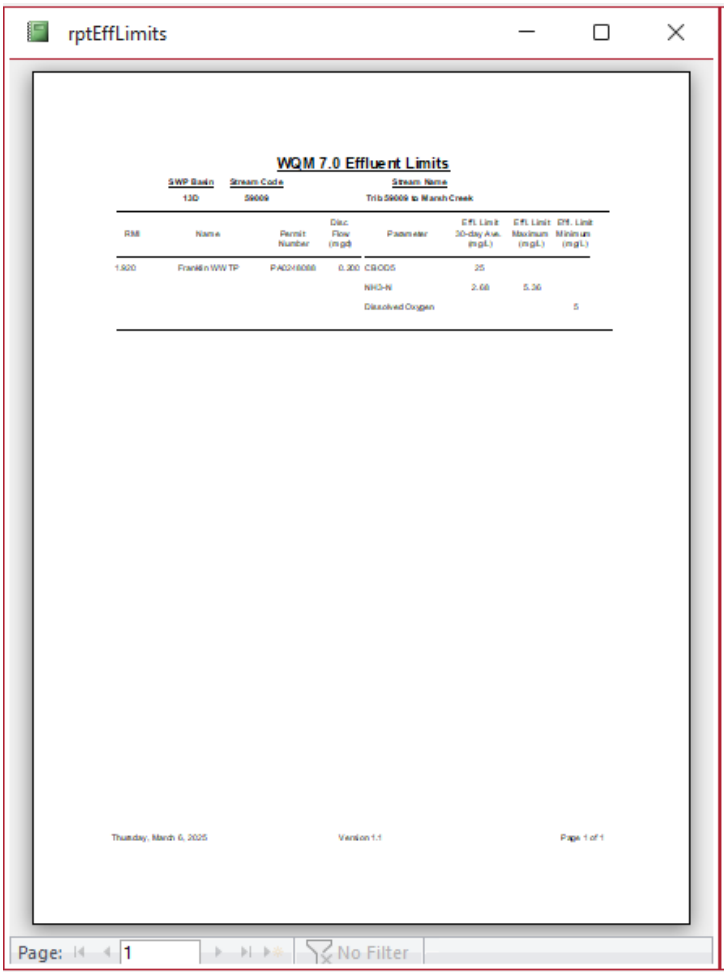
rptEffLimits
WQM 7.0 Effluent Limits
SWP Basin
Stream Code
Stream Name
13D
59009
Trib 59009 to Marsh Creek
RMI
Name
Permit Number
Disc Flow (mgd)
Parameter
Effl Limit 30-day Ave. (mg/L)
Effl Limit Maximum (mg/L)
Effl Limit Minimum (mg/L)
1.920
Franklin WWTP
PA0248088
0.200
CBOD5
25
NH3-N
2.68
5.36
Dissolved Oxygen
5
Thursday, March 6, 2025
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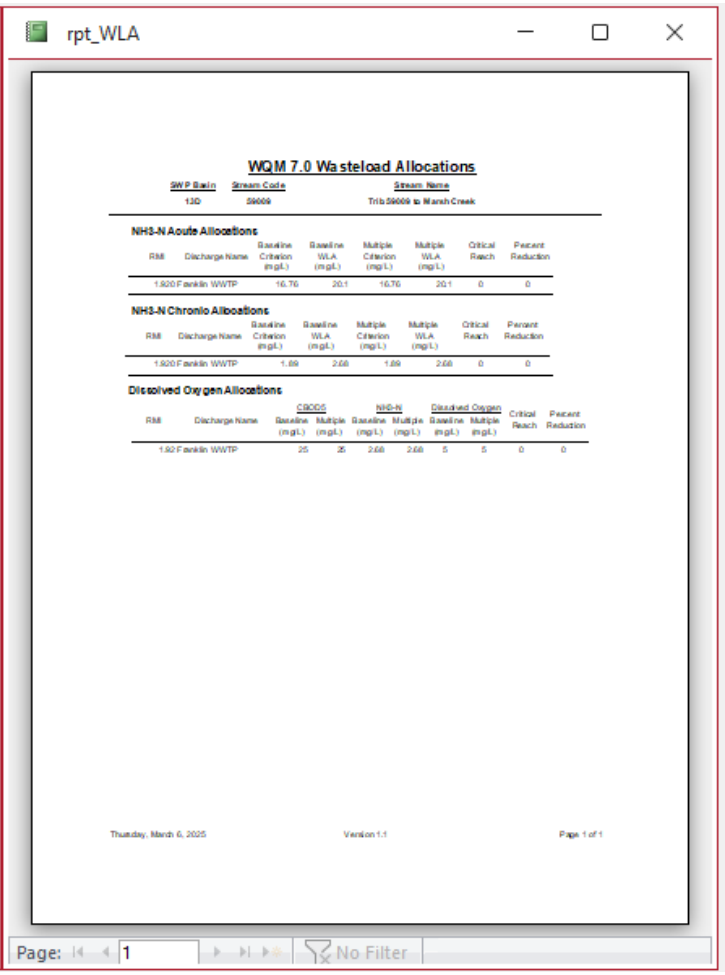
No Filter


rpt_WLA
WQM 7.0 Wasteload Allocations
SWP Basin
Stream Code
Stream Name
13D
59009
Trib 59009 to Marsh 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
1.920
Franklin WWTP
16.76
20.1
16.76
20.1
0
0
NH3-N Chronic Allocations
1.920
Franklin WWTP
1.89
2.68
1.89
2.68
0
0
Dissolved Oxygen Allocations
CBOD5
NH3-N
Dissolved Oxygen
Baseline (mg/L)
Multiple (mg/L)
25
25
2.68
2.68
5
5
Thursday, March 6, 2025
Version 1.1
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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
13D	59009	Trib 59009 to Marsh Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.920	0.200	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
6.415	0.440	19.136	0.110
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
16.54	1.414	2.05	0.700
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
5.768	22.561	Owens	5
Reach Travel Time (days)			
1.070			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.107	16.80	1.90	7.09
0.214	14.44	1.76	7.44
0.321	12.42	1.64	7.67
0.428	10.67	1.52	7.87
0.535	9.17	1.41	8.03
0.642	7.88	1.31	8.16
0.749	6.78	1.21	8.24
0.856	5.83	1.13	8.24
0.963	5.01	1.04	8.24
1.070	4.31	0.97	8.24

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
W.L.A. 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	5		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
13D	59009	Trib 59009 to Marsh 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												
1.920	0.10	0.00	0.10	.3094	0.00444	.44	6.41	19.14	0.11	1.070	20.00	7.00
Q1-10 Flow												
1.920	0.06	0.00	0.06	.3094	0.00444	NA	NA	NA	0.10	1.125	20.00	7.00
Q30-10 Flow												
1.920	0.13	0.00	0.13	.3094	0.00444	NA	NA	NA	0.11	1.022	20.00	7.00

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rptGeneral

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
13D	59009	Trib 59009 to Marsh Creek	1.920	591.00	1.85	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	W/D Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.052	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
Franklin WWTP	PA0248088	0.2000	0.2000	0.2000	0.000	20.00	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	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	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13D	59009	Trib 59009 to Marsh Creek	0.001	539.00	3.05	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	0.052	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
Franklin WWTP	PA0248088	0.0000	0.0000	0.0000	0.000	20.00	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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Page: 2 No Filter

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	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: BCW-PMT-033
☐	Other: