pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0021563**
Facility Type	**Municipal**	APS ID	**4329**
Major / Minor	**Major**	Authorization ID	**1425051**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Gettysburg Borough Municipal Authority Adams County**	Facility Name	**Gettysburg STP**
Applicant Address	PO Box 3307, 601 E Middle Street	Facility Address	601 E Middle Street
	Gettysburg, PA 17325-0307		Gettysburg, PA 17325-1951
Applicant Contact	Mark Guise	Facility Contact	Mark Guise
Applicant Phone	(717) 334-6738	Facility Phone	(717) 334-6738
Client ID	78262	Site ID	454506
Ch 94 Load Status	Existing Hydraulic Overload	Municipality	Gettysburg Borough
Connection Status	No Exceptions Allowed	County	Adams
Date Application Received	January 27, 2023	EPA Waived?	No
Date Application Accepted	January 31, 2023	If No, Reason	Major Facility, Significant CB Discharge
Purpose of Application	NPDES Permit renewal.		

Summary of Review

Buchart Horn, Inc., on behalf of the Gettysburg Municipal Authority, applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on July 12, 2018 and became effective on August 1, 2018. The permit expires on July 31, 2023.

The average annual design flow is 3.0 MGD, hydraulic design capacity approval is 5.9 MGD, and the organic loading capacity is 6,255 lbs BOD_5/day. The treated effluent is discharged to Rock Creek. This facility receives 80.0% of its flow from Gettysburg Borough, 17.4% from Straban Township, and 2.6% from Cumberland Township. The 2023 application states that there are no industrial users.

There are two stormwater outfalls at the facility, characterized as follows:

Outfall 002 (Outfall ST001)
Latitude 39° 49' 46", Longitude -77° 13' 07"
Drainage area: 52,000 sq. ft.
Description: Discharges to Unnamed Tributary to Rock Creek.

Outfall 003 (Outfall ST002)
Latitude 39° 49' 45", Longitude -77° 13' 09"
Drainage area: 71,000 sq. ft.
Description: Discharges to Unnamed Tributary to Rock Creek.

The WQM Part II No. 0197403 was issued on 6/30/1998, 0197403 A-1 amendment was issued on 10/12/2010, and 0197403 A-2 amendment was issued on 7/12/2018.

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

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted. A public notice of the draft permit will be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	June 16, 2023
X		Maria D. Bebenek for Daniel W. Martin Daniel W. Martin, P.E. / Environmental Engineer Manager	July 18, 2023

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	3.0
Latitude	39º 49' 43.68"	Longitude	-77º 13' 4.08"
Quad Name	Gettysburg	Quad Code	
Wastewater Description:	Effluent		
Receiving Waters	Rock Creek (WWF)	Stream Code	59041
NHD Com ID	53320138	RMI	11.90 miles
Drainage Area	19.2 mi.^{2}	Yield (cfs/mi^2)	0.033
Q_{7-10} Flow (cfs)	0.63	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	472	Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Nutrients,		
Source(s) of Impairment	Agriculture, Municipal Point Source Discharges		
TMDL Status	Pending	Name	
Nearest Downstream Public Water Supply Intake	City of Frederick, MD		
PWS Waters	Monocacy River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 42.0 miles

Changes Since Last Permit Issuance: none

Drainage Area
The discharge is to Rock Creek at RMI 11.90 miles. A drainage area upstream of the discharge is estimated to be 19.2 mi.^{2}, according to USGS PA StreamStats available at: https://streamstats.usgs.gov/ss/.

Stream Flow
According to StreamStats, the discharge point in the receiving stream has a Q_{7-10} of 0.63 cfs and a drainage area of 19.2 mi.^{2}, which results in a Q_{7-10} low flow yield of 0.033 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):

Q_{7-10} = 0.63 cfs
Low Flow Yield = 0.63 cfs / 19.2 mi.^{2} = 0.033 cfs/mi.^{2}
Q_{30-10} = 1.36 * 0.63 cfs = 0.86 cfs
Q_{1-10} = 0.64 * 0.63 cfs = 0.4 cfs

The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 0.63 cfs / [3.0 MGD * (1.547 cfs/MGD)] = 0.14:1.

Rock Creek
25 Pa. Code § 93.9z classifies Rock Creek as warm water fishes & migratory fishes (WWF & MF) surface water. Based on the 2022 Integrated Report, Rock Creek, assessment unit ID 15114, is impaired for nutrients due to agriculture and a municipal point source. 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 public water supply intake is the City of Frederick, MD intake on the Monocacy River. It is approximately 42.0 miles downstream of the discharge. Due to the distance, dilution, and proposed effluent limits the discharge is not expected to impact the water supply.

Treatment Facility Summary

Treatment Facility Name: Gettysburg STP

WQM Permit No.	Issuance Date
0197403	6/30/1998
0197403 A-1	10/20/2010
0197403 A-2	7/12/2018

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia And Phosphorus	Oxidation Ditch	Ultraviolet	3.0

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
5.9	6,255	Existing Hydraulic Overload	Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance: none

Other Comments:
The facility has an average annual design flow and hydraulic design capacity of 3.0 MGD. The organic design capacity is 4,904 lbs/day.

The overall WWTP train is configured as follows:

Fine Screen (2) ⇒ Grit Removal (2) ⇒ Sequencing Batch Reactors (2) ⇒ Oxidation Ditches (2) ⇒ Clarifiers (3) ⇒ Post EQ Tanks (2) ⇒ UV Unit (2) ⇒ Discharge

Chemical used:
The system incorporates the chemical addition of aluminum sulfate at 400 gpd (for phosphorus removal), sodium hydroxide at 10 gpd (for pH adjustment), and emulsion polymer at 20 gpd (for sludge dewatering aid).

Industrial/Commercial Users:
The permit application indicated there are no industrial/commercial contributors to the treatment plant.

Biosolids:
Biosolids are dewatered with two centrifuges and are then stored onsite until they are land applied. The land application is regulated under PAG083450 permit, which was issued on 8/9/2014 and expired 8/9/2019. The biosolids land applied under General Permits PAG-08 for the previous year was 228.0 dry tons. Additionally, the total sewage sludge / biosolids production within the facility for the previous year was 199.0 dry tons. The biosolids are Class B and is given away for agricultural utilization, or composting. The Table is summarized below.

Site Name	Location	Township / County	Dry Tons Applied
Martin Farm	800 Pond Bank Rd.	Straban / Adams	171.7
Offutt Farm	575 Russell Tavern Rd.	Butler & Cumberland / Adams	37.1
Woerner Farm 1	850 Herr's Ridge Rd.	Cumberland / Adams	19.0

Compliance History	
Summary of DMRs:	A summary of past 12-month DMRs is presented on the page 5, 6, & 7.
Summary of Inspections:	**3/09/2023:** Mr. Hoy, DEP's WQS, conducted compliance evaluation inspection. There were no violations noted during inspection. The field test results were within the permit limits. Recommendations were to ensure flow meter accuracy, keep records on-site available for review, empty rags buckets after collection, exercise the on-site generator under load on a regular basis, update the DEP emergency number in the PPC Plan to 1-800-541-2050, and annually replace & calibrate the NIST thermometer. **7/22/2021:** Mr. Bettinger, DEP's WQS, conducted compliance evaluation inspection. There were no violations noted during inspection. Recommendations were to ensure copies of all required DMR supplemental forms are retained on-site for a minimum of 3 years and recommend exploring options for an emergency power source. The field test results were within the permit limits. **1/13/2021:** Mr. Bettinger, DEP's WQS, conducted Chesapeake Bay inspection. There were no violations noted during inspection. Recommendations were review each discrepancy and making/submitting revisions to DMRs and supplemental forms as necessary, reporting NO_2 and NO_3 values as $NO_2 + NO_3$ as N on the daily Effluent Monitoring Supplemental form. **11/6/2019:** Mr. Bettinger, DEP's WQET, conducted compliance evaluation inspection. There were no violations noted during inspection. Recommendations were to submit hauled in waste DMR supplemental form to include volume of sludge received from other facilities, conduct routine stormwater inspection at least twice a year and keep records on site, and determine origin/source of 2-inch metal pipe 30 feet downstream of outfall 003. The field test results were within the permit limits.
Other Comments:	There are no open violations against the permittee or applicant.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from May 1, 2022 to April 30, 2023)

Parameter	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22
Flow (MGD) Average Monthly	1.586	1.58	1.1	1.46	1.68	1.27	1.08	1.21	1.08	1.27	1.13	1.98
Flow (MGD) Daily Maximum	6.886	2.12	2.06	3.25	6.52	4.08	2.19	2.14	2.11	1.58	2.88	9.46
pH (S.U.) Minimum	6.8	6.9	6.8	6.7	6.8	6.8	6.7	7.0	7.0	6.9	7.0	7.0
pH (S.U.) IMAX	7.3	7.6	7.3	7.4	7.3	7.4	7.4	7.6	7.7	7.6	7.7	7.6
DO (mg/L) Minimum	7.2	7.4	7.3	7.7	8.0	6.8	7.3	6.7	6.5	6.7	6.1	5.8
CBOD5 (lbs/day) Average Monthly	< 39	< 30	< 25	< 27	< 22	< 31	< 30	< 32	< 22	< 27	< 22	< 37
CBOD5 (lbs/day) Weekly Average	< 32	< 41	< 30	< 35	< 25	< 60	< 37	46	< 34	< 31	< 28	< 54
CBOD5 (mg/L) Average Monthly	< 2.5	< 2.5	< 2.6	< 2.5	< 2.4	< 2.8	< 3.3	< 2.8	< 2.6	< 2.8	< 2.4	< 2.9
CBOD5 (mg/L) Weekly Average	< 3.0	< 3.0	< 3.0	< 2.0	< 2.0	< 3.0	4.0	3.0	< 3.0	< 4.0	< 3.0	< 4.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	2757	1724	1997	1353	1577	2111	2622	5095	1925	2160	1774	2098
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	4755	2512	2612	2298	2149	3366	4324	10613	2946	3240	2698	3740
BOD5 (mg/L) Raw Sewage Influent Average Monthly	226	152	207	124	147	204	247	423	204	207	172	165
TSS (lbs/day) Average Monthly	25	32	23	35	18	47	31	36	19	32	21	48
TSS (lbs/day) Raw Sewage Influent Average Monthly	2020	1196	1404	1307	1006	1562	1542	3476	1113	1540	1562	1464
TSS (lbs/day) Raw Sewage Influent Daily Maximum	3326	2211	2902	3053	2042	3089	3054	5288	3453	3699	2592	2751
TSS (lbs/day) Weekly Average	34	63	45	68	44	115	55	57	42	44	32	113
TSS (mg/L) Average Monthly	2.0	2.6	2.6	3.6	1.9	3.9	3.1	2.9	2.1	3.0	2.1	4.1

TSS (mg/L) Raw Sewage Influent Average Monthly	179	108	142	123	96	154	147	314	112	143	155	120
TSS (mg/L) Weekly Average	3.0	4.0	4.0	9.0	5.0	6.0	4.0	4.0	4.0	5.0	3.0	12.0
Fecal Coliform (CFU/100 ml) Geometric Mean	3	< 2	< 2	< 4	< 7	< 1	16	7	6	10	6	< 5
Fecal Coliform (CFU/100 ml) IMAX	9	5	12	411	579	6	2420	13	23	49	9	58
UV Intensity (mW/cm²) Minimum	24	24	25	25	25	25	25	25	25	25	25	25
UV Intensity (mW/cm²) Average Monthly	39	41	34	40	39	34	32	37	39	36	37	47
Nitrate-Nitrite (mg/L) Average Monthly	< 1.55	< 2.22	< 1.54	< 2.3	< 2.42	< 1.29	< 1.7	< 2.2	< 1.28	< 1.33	< 1.26	< 1.47
Nitrate-Nitrite (lbs) Total Monthly	< 748	< 845	< 430	< 752	< 707	< 405	< 527	< 729	< 344	< 426	< 354	< 672
Total Nitrogen (mg/L) Average Monthly	< 2.6	< 3.32	< 4.45	< 3.84	< 3.77	< 2.01	< 2.23	< 32	< 1.78	< 1.87	< 1.86	< 2.63
Total Nitrogen (lbs) Effluent Net Total Monthly	< 1132	< 1255	< 1195	< 1258	< 1095	< 638	< 684	< 948	< 477	< 597	< 519	< 1108
Total Nitrogen (lbs) Total Monthly	< 1132	< 1255	< 1195	< 1258	< 1095	< 638	< 684	< 948	< 477	< 597	< 519	< 1108
Total Nitrogen (lbs) Effluent Net Total Annual								< 8709				
Total Nitrogen (lbs) Total Annual								< 8725				
Ammonia (lbs/day) Average Monthly	< 2	< 1	< 13	< 1	< 0.9	< 1	< 1	< 2	< 0.9	< 1	< 0.9	< 4
Ammonia (mg/L) Average Monthly	< 0.1	< 0.11	< 1.45	< 0.11	< 0.1	< 0.1	< 0.14	< 0.15	< 0.1	< 0.1	< 0.1	< 0.3
Ammonia (lbs) Total Monthly	< 48	< 41	< 358	< 37	< 29	< 32	< 41	< 45	< 27	< 32	< 28	111
Ammonia (lbs) Total Annual								< 547				
TKN (mg/L) Average Monthly	< 1.05	< 1.1	2.9	1.5	1.4	< 0.72	< 5	< 0.66	< 0.5	< 0.54	< 0.6	< 1.16
TKN (lbs) Total Monthly	< 384	< 410	765	506	388	< 233	< 157	< 219	< 27	< 171	< 165	< 436
Total Phosphorus (lbs/day) Average Monthly	< 4.3	< 1.3	< 1.2	< 1.3	1.3	2.3	2.0	5.7	2.6	2.0	2.5	< 3.1

Total Phosphorus (mg/L) Average Monthly	< 0.29	< 0.11	< 0.13	< 0.12	0.14	0.22	0.21	0.49	0.3	0.2	0.27	< 0.27
Total Phosphorus (lbs) Effluent Net Total Monthly	< 128.4	< 41.6	< 32.6	< 40.4	40.1	68.7	62.3	169.6	79.2	62.6	74.9	< 94.9
Total Phosphorus (lbs) Total Monthly	< 128.4	< 41.6	< 32.6	< 40.4	40.1	68.7	62.3	169.6	79.2	62.6	74.9	< 94.9
Total Phosphorus (lbs) Effluent Net Total Annual								< 798				
Total Phosphorus (lbs) Total Annual								< 798				

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 3
Latitude 39º 49' 43.69" **Longitude** -77º 13' 4.09"
Wastewater Description: 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: Total Residual Chlorine is not applied.

Water Quality-Based Limitations

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

- Discharge pH 7.0 (Default per 391-2000-007)
- Discharge Temperature 20°C (Default per 391-2000-007)
- Stream pH 7.0 (Default per 391-2000-006)
- Stream Temperature 25°C (Default for WWF per 391-2000-003)
- Background NH_3-N 0 mg/L (Assumed since no nearby upstream WWTPs)

Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 2.13 mg/L as a monthly average (AML) and 4.26 mg/L instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects at the point of discharge. However, the existing limits of 1.0 mg/L monthly average & 2.0 mg/L IMAX are more stringent and will remain in the proposed permit. Per anti-backsliding policy, the existing winter average monthly limit of 3.0 mg/L & IMAX limit of 6.0 mg/L will remain in place. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Summer average monthly mass limit: 1.0 mg/L x 3.0 MGD x 8.34 = 25.0 lbs/day
Winter average monthly mass limit: 3.0 mg/L x 3.0 MGD x 8.34 = 75.0 lbs/day

Dissolved Oxygen (D.O.):
The D.O. goal is 6.0 mg/L. However, a minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. It is recommended that this limit be maintained in the proposed permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) No. BCW-PMT-033, version 1.9 revised March 22, 2021, and has been applied to other point source dischargers throughout the state.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit of 20.51 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. The existing permit 10.0 mg/L as AML, 15.0 mg/L as weekly average limit (AWL), & 20.0 mg/L as IMAX are more stringent and will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit. Mass limits are calculated as follows:

Average monthly mass limit: 10 mg/L x 3.0 MGD x 8.34 = 250 lbs/day
Average weekly mass limit: 15 mg/L x 3.0 MGD x 8.34 = 375 lbs/day

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(1).

Total Suspended Solids (TSS):
The existing limits of 15.0 mg/L average monthly, 22.5 mg/L weekly average, and 30.0 mg/L IMAX will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has consistently been achieving concentrations below these limits. Mass limits are calculated as follows:

Average monthly mass limit: 15 mg/L x 3.0 MGD x 8.34 = 375 lbs/day
Average weekly mass limit: 22.5 mg/L x 3.0 MGD x 8.34 = 563 lbs/day

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 § 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 1.9 revised March 22, 2021, 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 and equal 1.0 MGD in their new and reissued permits. A monitoring frequency of 1/month will be included in the permit to be consistent with the recommendation from this SOP.

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

Total Phosphorus:
The existing phosphorus limits of 0.6 mg/L average monthly and 1.2 mg/L IMAX will remain in the proposed permit. Mass limits are calculated as follows:

Average monthly mass limit: 0.6 mg/L x 3.0 MGD x 8.34 = 8.5 lbs/day

Raw Sewage Influent Monitoring:
As a result of negotiation with EPA, influent monitoring of TSS and BOD_5 are required for any POTWs; therefore, influent sampling of BOD_5 and TSS will be remain in the proposed permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for TSS and BOD_5 in the effluent.

Chesapeake Bay Strategy:
In the Phase 3 WIP Wastewater Supplement revised on July 29, 2022, Table 5 (page 7) of this document shows that Gettysburg Borough has been allocated 44,748 lbs/year of TN and 5,966 lbs/year of TP. This approach is consistent with the Chesapeake Bay TMDL, based on the actual performance data previously evaluated by the Department.

This facility is currently a significant discharger. Therefore, the facility's waste load allocation (WLA) will be tracked under an individual WLA as a significant discharger in the Phase 2 WIP Wastewater Supplement. Monitoring frequency for TN constituents will remain in the proposed permit. The Chesapeake Bay nutrient existing limitations and monitoring requirements will remain in the proposed permit.

Phase 3 WIP Wastewater Supplement
Revised, July 29, 2022

NPDES Permit No.	Phase	Facility	Latest Permit Issuance Date	Permit Expiration Date	Cap Load Compliance Start Date	TN Cap Load (lbs/yr)	TN Offsets Included in Cap Load (lbs/yr)	TP Cap Load (lbs/yr)	TN Delivery Ratio	TP Delivery Ratio
PA0021237	2	Newport Borough Municipal Authority	12/7/2016	12/31/2021	10/1/2014	7,306	-	974	0.821	0.374
PA0021245	2	Duncannon Borough	6/28/2018	6/31/2023	10/1/2013	13,516	-	1,802	0.769	0.400
PA0021491	3	Williamstown Borough	5/23/2016	5/31/2021	10/1/2010	7,306	-	974	0.803	0.447
PA0021539	3	Williamsburg Borough	3/22/2022	3/31/2027	10/1/2013	7,306	-	974	0.768	0.493
PA0021563	3	Gettysburg Municipal Authority	7/12/2018	7/31/2023	10/1/2012	44,748	-	5,966	0.563	0.720
PA0021571	3	Marysville Municipal Authority	9/20/2021	9/30/2026	10/1/2012	22,831	-	3,044	0.631	0.376
PA0021644	2	Dover Borough	9/8/2021	9/30/2026	10/1/2010	7,306	-	974	0.513	0.185
PA0021687	1	Wellsboro Municipal Authority	5/23/2022	5/31/2027	10/1/2010	36,529	-	4,871	0.447	0.356
PA0021717	2	Marietta-Donegal Joint Authority	12/10/2021	12/31/2026	10/1/2012	13,698	-	1,826	0.849	0.501
PA0021806	2	Annville Township	5/26/2022	5/31/2027	10/1/2012	13,698	-	1,826	0.756	0.483
PA0021814	3	Mansfield Boro Municipal Authority	7/20/2021	7/31/2026	10/1/2012	23,744	-	3,166	0.469	0.430
PA0021865	2	Adamstown Borough Authority	2/27/2020	2/28/2025	10/1/2013	10,959	-	1,461	0.530	0.563
PA0021881	3	Westfield Borough	9/3/2020	9/30/2025	10/1/2010	8,402	-	1,120	0.489	0.273
PA0021890	1	New Holland Borough Authority	3/16/2021	3/31/2026	10/1/2012	24,475	-	3,263	0.563	0.571
PA0022209	1	Bedford Borough Municipal Authority	2/26/2021	2/28/2026	10/1/2010	27,397	-	3,653	0.519	0.216
PA0022535	3	Millersburg Borough Authority	11/27/2017	11/30/2022	10/1/2013	18,265	-	2,435	0.801	0.413
PA0023108	1	Elizabethtown Borough	4/20/2022	4/30/2027	10/1/2010	109,500	-	13,688	0.836	0.486
PA0023141	3	Hastings Area Sewer Authority	5/16/2018	5/16/2023	10/1/2016	10,959	-	1,461	0.525	0.239
PA0023183	3	Mt. Holly Springs Borough Authority	5/11/2022	5/31/2027	10/1/2013	10,959	-	1,461	0.658	0.410
PA0023248	1	Berwick Municipal Authority	12/13/2019	12/31/2024	10/1/2010	66,848	-	8,913	0.811	0.495
PA0023264	2	Twin Boroughs Sanitary Authority	2/24/2022	2/28/2027	10/1/2012	16,438	-	2,192	0.812	0.401

- 7 -

Toxics:
The data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003, version 1.4, revised 5/2023) and DEP's SOP No. BPNPSM-PMT-033. Spreadsheet results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Therefore, the results are as follows.

- Dissolved Iron pollutant has reasonable potential (RP) discharge concentration greater than or equal to 50% WQBEL, and based upon the data provided in the application (Maximum Value 0.189 mg/L (189 µg/L)) which is below the IMAX Limits of 0.852 mg/L (852 µg/L) in DEP Toxics Management Spreadsheet. Therefore, the limit or monitoring requirement of this parameter is not necessary. Then this pollutant will be not in the proposed permit.

- Total Aluminum (Al), Total Boron, Total Copper, Total Iron, Total Selenium, and Total Zinc pollutants have no reasonable potential (no-RP) discharge concentration greater than 10% WQBEL, per DEP's SOP No. BPNPSM-PMT-033, therefore, the monitoring and reporting requirements of these pollutants are not necessary to add to the proposed permit.

Total Dissolved Solids (TDS):
Total Dissolved Solids and its major constituents including Bromide, Chloride, and Sulfate have become statewide pollutants of concern and threats to DEP's mission to prevent violations of water quality standards. The requirement to monitor these pollutants is necessary under the following DEP Central Office directive:

For point source discharges and upon issuance or reissuance of an individual NPDES permit:

- *Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.*
- *Where the concentration of bromide in a discharge exceeds 1.0 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.*

The facility has no record of monitoring these pollutants. However, the application shows a maximum influent concentration of 512 mg/L for TDS. The effluent concentration is not expected to exceed 1,000 mg/L. No monitoring is necessary.

Whole Effluent Toxicity Testing (WETT):

The permittee submitted four (4) WET Test results during the submission of the renewal application. The details are under the WET section below this fact sheet. In summary, all four (4) WETT results are "Passing" which do not necessitate the inclusion of WET parameters; however, WETT requirement will remain in the proposed permit to submit four (4) WETT results during next permit renewal. The dilution series is updated.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☒ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☐ Other:

The dilution series used for the tests was: 100%, 94%, 88%, 44%, and 22%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 88%.

Summary of Four Most Recent Test Results

NOEC/LC50 Data Analysis

	***Ceriodaphnia* Results (% Effluent)**			***Pimephales* Results (% Effluent)**			
Test Date	**NOEC Survival**	**NOEC Reproduction**	**LC50**	**NOEC Survival**	**NOEC Growth**	**LC50**	**Pass? ***
September 2019	100	22	NA	100	100	NA	Yes
September 2020	100	100	NA	100	100	NA	Yes
September 2021	100	88	NA	100	100	NA	Yes
October 2022	100	100	NA	100	100	NA	Yes

***** *A "passing" result is that which is greater than or equal to the TIWC value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **1** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

[(3.0 MGD x 1.547) / ((0.63 cfs x 1) + (3.0 MGD x 1.547))] x 100 = **88%**

Is IWCa < 1%? ☐ **YES** ☒ **NO**

2b. Determine Target IWCc (If Chronic Tests Required)

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(3.0 MGD x 1.547) / ((0.63 cfs x 1) + (3.0 MGD x 1.547))] x 100 = **88%**

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 94%, 88%, 44%, and 22%.

WET Limits

Will WET limits be established in the permit? ☐ YES ☒ NO

Stormwater

There are two stormwater outfalls at the facility, characterized as follows:

Outfall 002 (Outfall ST001)
Latitude 39° 49' 46", Longitude -77° 13' 07"
Drainage area: 52,000 sq. ft.
Description: Discharges to Unnamed Tributary to Rock Creek.

Outfall 003 (Outfall ST002)
Latitude 39° 49' 45", Longitude -77° 13' 09"
Drainage area: 71,000 sq. ft.
Description: Discharges to Unnamed Tributary to Rock Creek.

According to the permit application, best management practices used to minimize pollutants in stormwater at the facility include the following: spill kits, including absorbent socks and booms; indoor storage of chemicals or in secondary containment to prevent exposure to stormwater; plugging/covering of drainage inlets near bulk chemical tanks during unloading operations.

The existing stormwater requirements will remain in Part C – item IV of the proposed permit, pages 28 - 29.

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.

303(d) Listed Streams

According to eMapPA, the receiving stream is impaired for nutrients due to agriculture and a municipal point source. A TMDL has not yet been written for this impairment.

Class A Wild Trout Fisheries

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

WQM 7.0:

The following data were used in the attached computer model (WQM 7.0) of the stream:

*	Discharge pH	7.0	(Default)
*	Discharge Temperature	20°C	(Default per 391-2000-013)
*	Stream pH	7.0	(Default per 391-2000-013)
*	Stream Temperature	25°C	(Default per 391-2000-013)

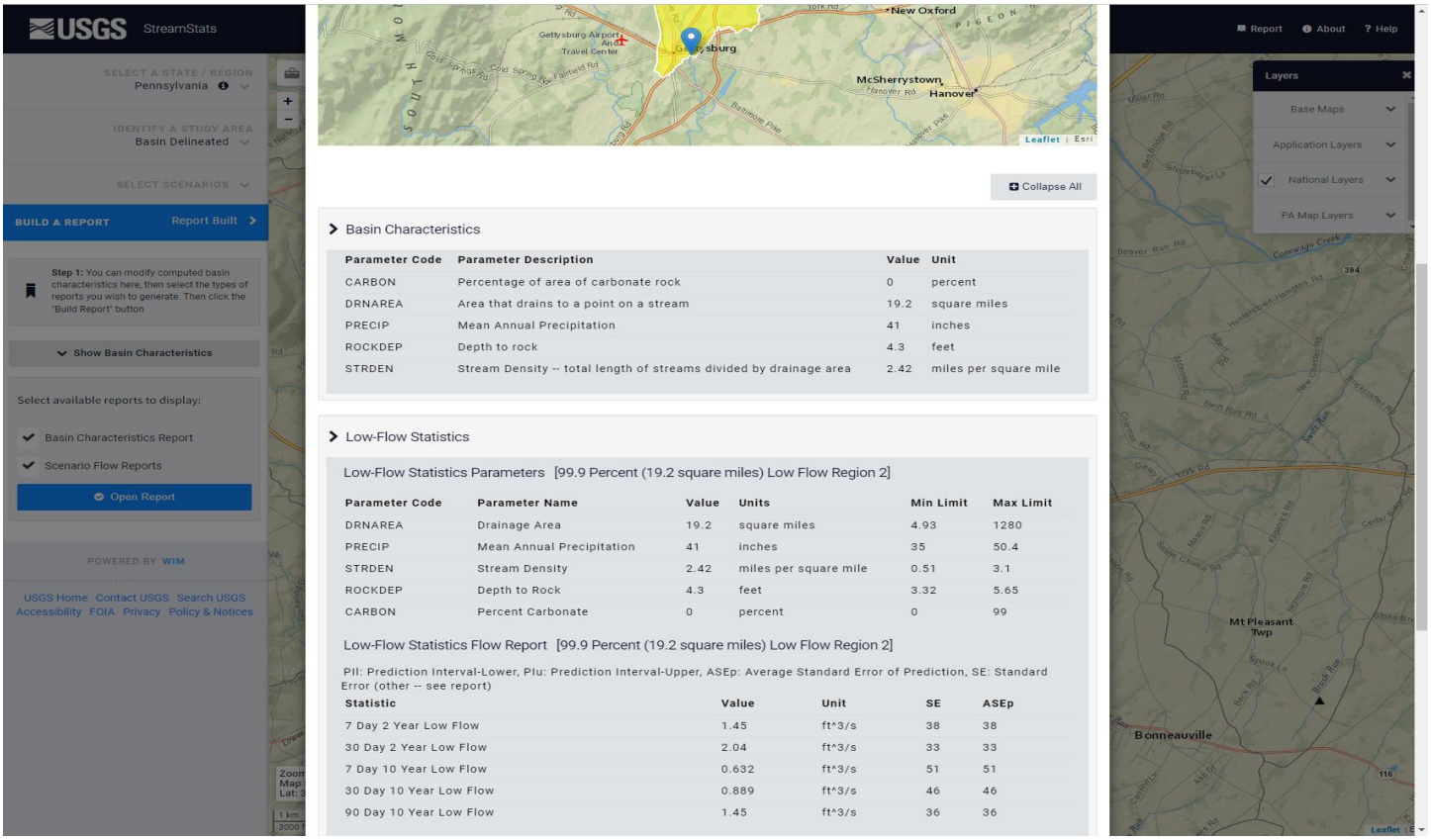
The following two nodes were used in modeling:

Node 1: Discharge at Rock Creek (59041)

Elevation:	472 ft (USGS National Map)
Drainage Area:	19.2 $mi.^2$ (USGS StreamStats)
River Mile Index:	11.90 (PA DEP eMapPA)
Low Flow Yield:	0.033 $cfs/mi.^2$ (calculated)
Discharge Flow:	3.0 MGD

Node 2: At the confluence with UNT 59145

Elevation:	454 ft (USGS National Map)
Drainage Area:	19.6 $mi.^2$ (StreamStats)
River Mile Index:	11.14 (PA DEP eMapPA)
Low Flow Yield:	0.033 $cfs/mi.^2$
Discharge Flow:	0.00 MGD



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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	19.2	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	2.42	miles per square mile

Low-Flow Statistics

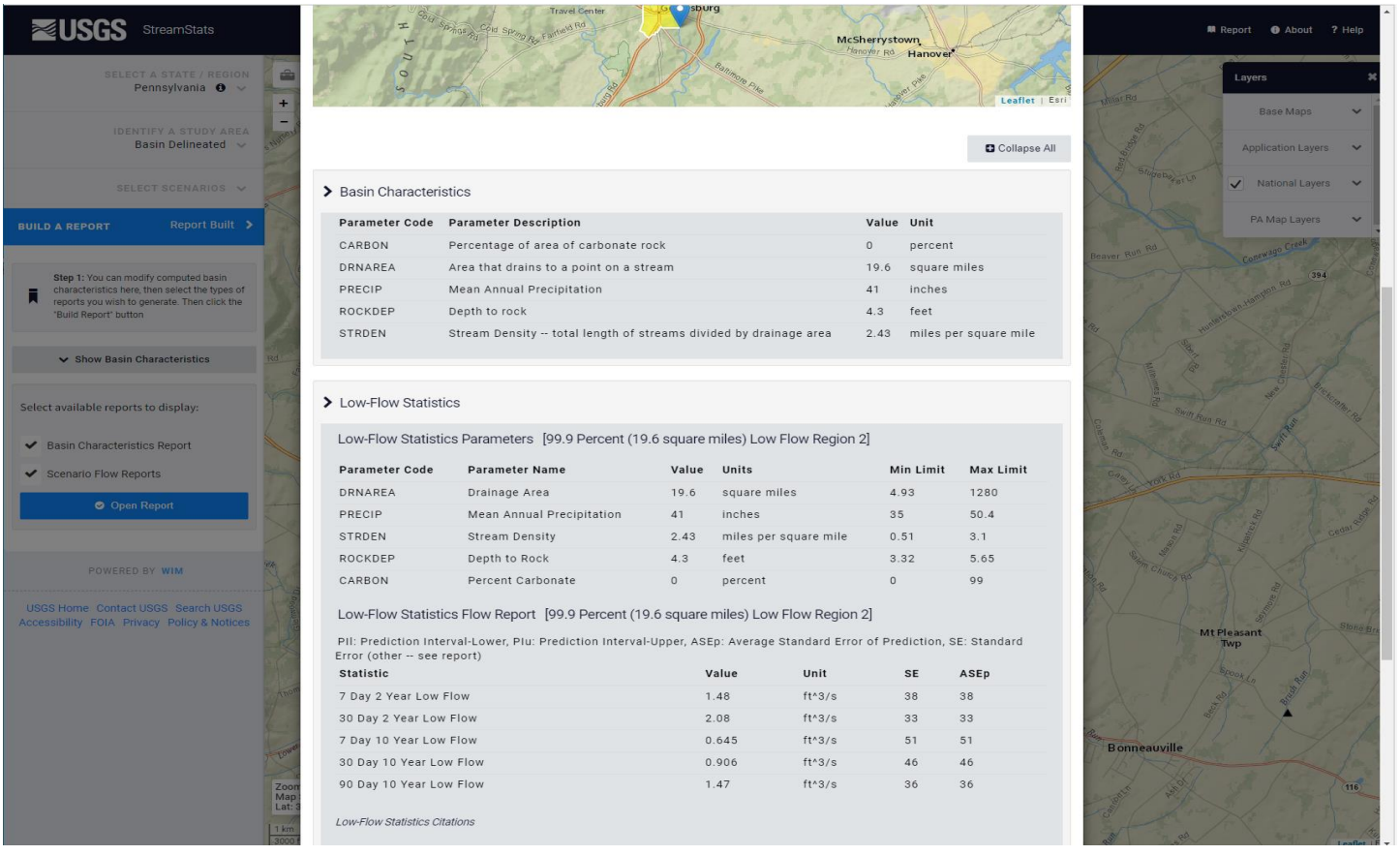
Low-Flow Statistics Parameters [99.9 Percent (19.2 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19.2	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.42	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 Flow Report [99.9 Percent (19.2 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.45	ft^3/s	38	38
30 Day 2 Year Low Flow	2.04	ft^3/s	33	33
7 Day 10 Year Low Flow	0.632	ft^3/s	51	51
30 Day 10 Year Low Flow	0.889	ft^3/s	46	46
90 Day 10 Year Low Flow	1.45	ft^3/s	36	36



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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	19.6	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	2.43	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (19.6 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	19.6	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.43	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 Flow Report [99.9 Percent (19.6 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.48	ft^3/s	38	38
30 Day 2 Year Low Flow	2.08	ft^3/s	33	33
7 Day 10 Year Low Flow	0.645	ft^3/s	51	51
30 Day 10 Year Low Flow	0.906	ft^3/s	46	46
90 Day 10 Year Low Flow	1.47	ft^3/s	36	36

Low-Flow Statistics Citations

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)
11.90	Gettysburg Boro	PA0021563	3.0000

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	20.51		
NH3-N	2.13	4.26	
Dissolved Oxygen			6

Record: 1 of 1 | No Filter | Search

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rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
13D	59041	ROCK CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
11.900	Gettysburg Boro	PA0021563	3.000	CBOD5	20.51		
				NH3-N	2.13	4.26	
				Dissolved Oxygen			6

Thursday, June 15, 2023 Version 1.1 Page 1 of 1

Page: 1 | No Filter

rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13D	59041	ROCK 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
11.900	Gettysburg Boro	16.21	17.83	16.21	17.83	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
11.900	Gettysburg Boro	1.79	2.13	1.79	2.13	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5 Baseline (mg/L)	CBOD5 Multiple (mg/L)	NH3-N Baseline (mg/L)	NH3-N Multiple (mg/L)	Dissolved Oxygen Baseline (mg/L)	Dissolved Oxygen Multiple (mg/L)	Critical Reach	Percent Reduction
11.900	Gettysburg Boro	20.51	20.51	2.13	2.13	6	6	0	0

Thursday, June 15, 2023 Version 1.1 Page 1 of 1

Page: 1 | No Filter

rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
13D	59041	ROCK CREEK

RM	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
11.500	3.000	20.601	7.000

Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
29.190	0.855	44.553	0.276

Reach CBOD5 (mg/L)	Reach Kr (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
18.219	1.213	1.267	0.733

Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
6.289	11.924	Tsivoglou	6

Reach Travel Time (days)
0.168

Subreach Results

Travel time (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.017	17.91	1.85	6.17
0.034	17.53	1.83	6.09
0.051	17.17	1.80	6.04
0.067	16.81	1.78	6.02
0.084	16.46	1.76	6.00
0.101	16.12	1.74	6.01
0.118	15.79	1.72	6.02
0.135	15.46	1.70	6.04
0.152	15.14	1.67	6.06
0.168	14.82	1.65	6.10

Thursday, June 15, 2023 Version 1.1 Page 1 of 1

Page: 1 No Filter

rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

Thursday, June 15, 2023 Version 1.1 Page 1 of 1

Page: 1 No Filter

rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
13D	59041	ROCK CREEK

RM	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												
11.500	0.83	0.00	0.83	4.641	0.00449	.855	29.19	44.55	0.28	0.168	20.60	7.00
Q1-10 Flow												
11.500	0.41	0.00	0.41	4.641	0.00449	NA	NA	NA	0.27	0.173	20.40	7.00
Q30-10 Flow												
11.500	0.86	0.00	0.86	4.641	0.00449	NA	NA	NA	0.28	0.164	20.78	7.00

Thursday, June 15, 2023 Version 1.1 Page 1 of 1

Page: 1 No Filter

rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RM	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13D	59041	ROCK CREEK	11.500	472.00	19.20	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	0.033	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
Gettysburg Boro	PA0021563	3.0000	3.0000	3.0000	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

Thursday, June 15, 2023 Version 1.1 Page 1 of 2

Page: 1 No Filter

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	59041	ROCK CREEK	11.140	454.00	19.80	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	0.033	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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

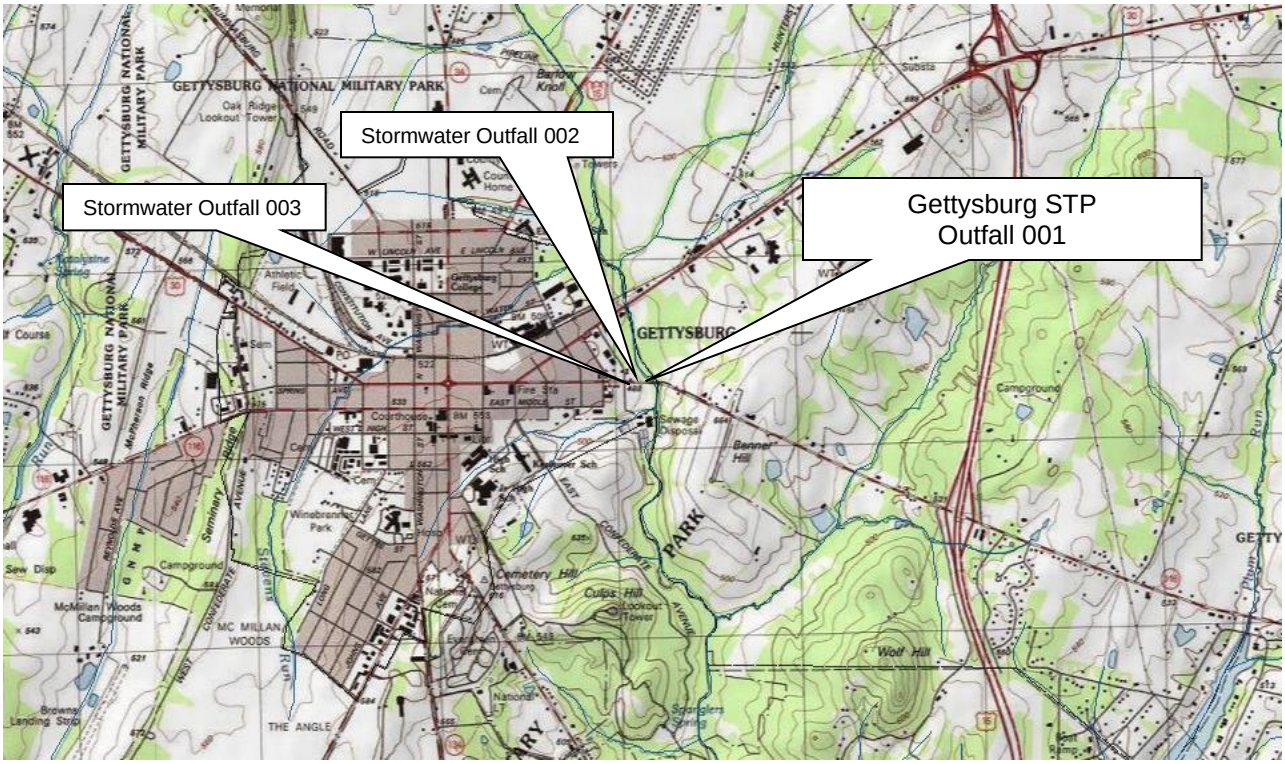
Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
GettysburgSTP	PA0021563	0.0000	0.0000	0.0000	0.000	20.00	7.00

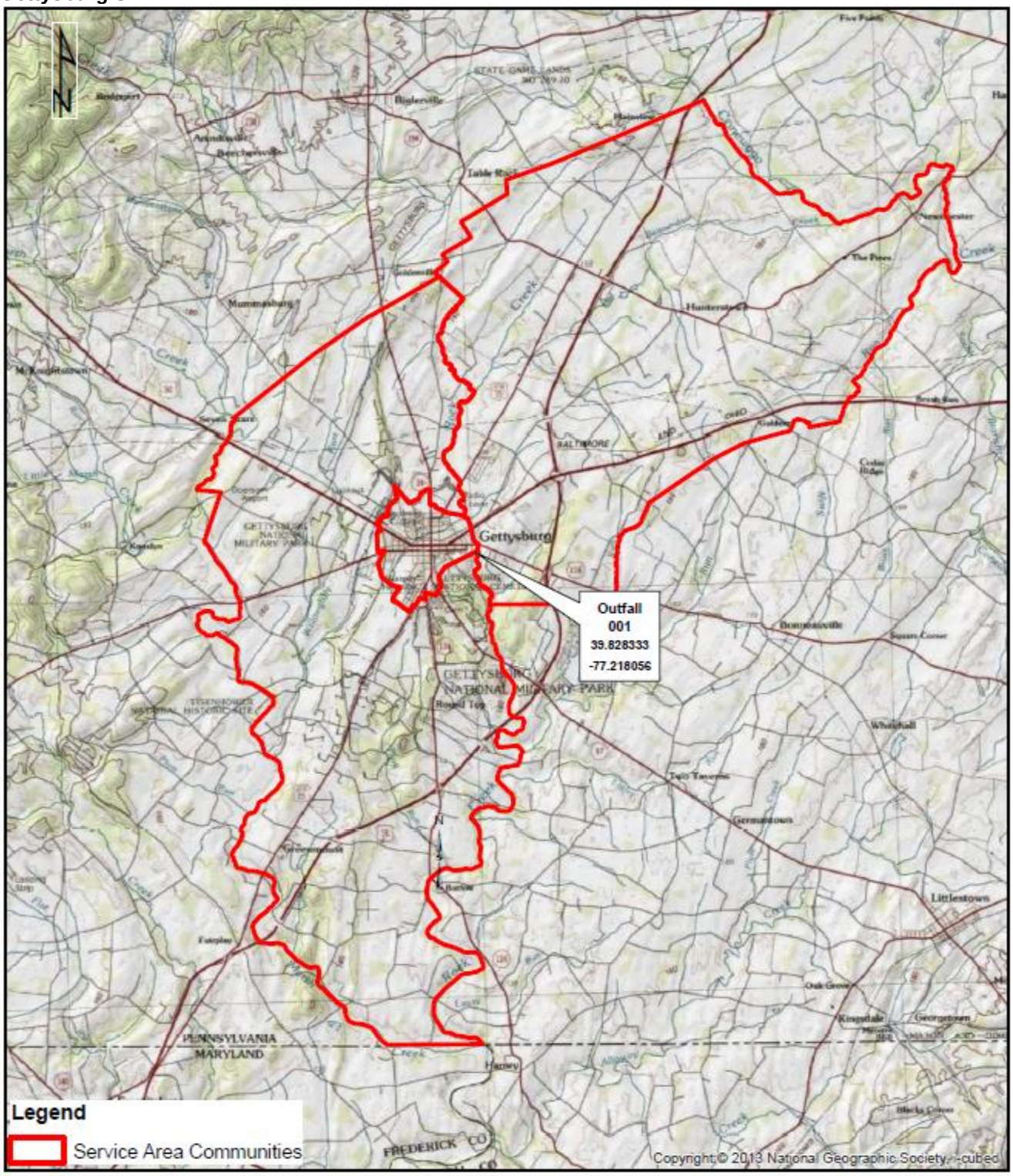
Parameter Data

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

Thursday, June 15, 2023 Version 1.1 Page 2 of 2

Page: 2 No Filter





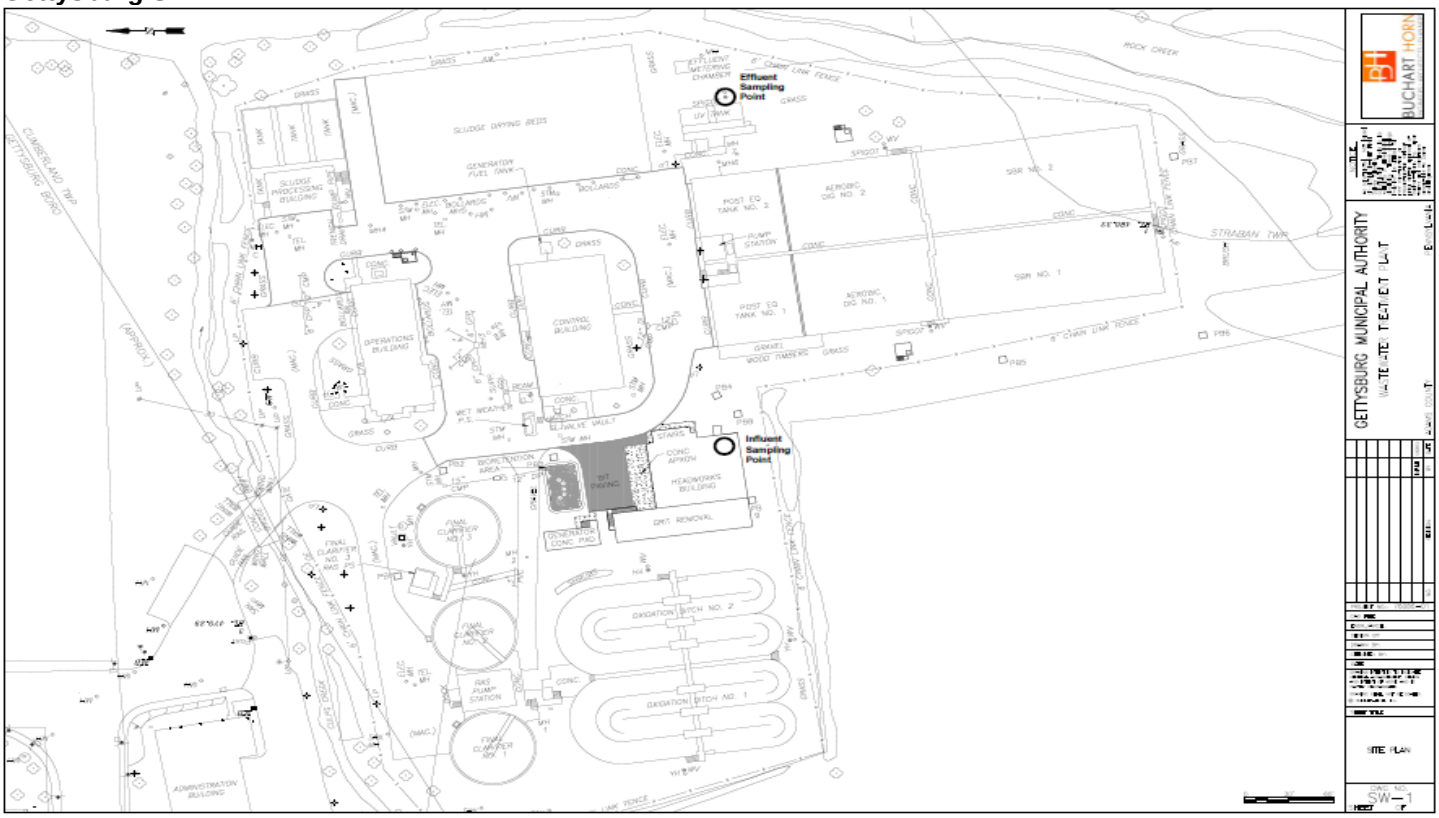
Gettysburg Municipal Authority

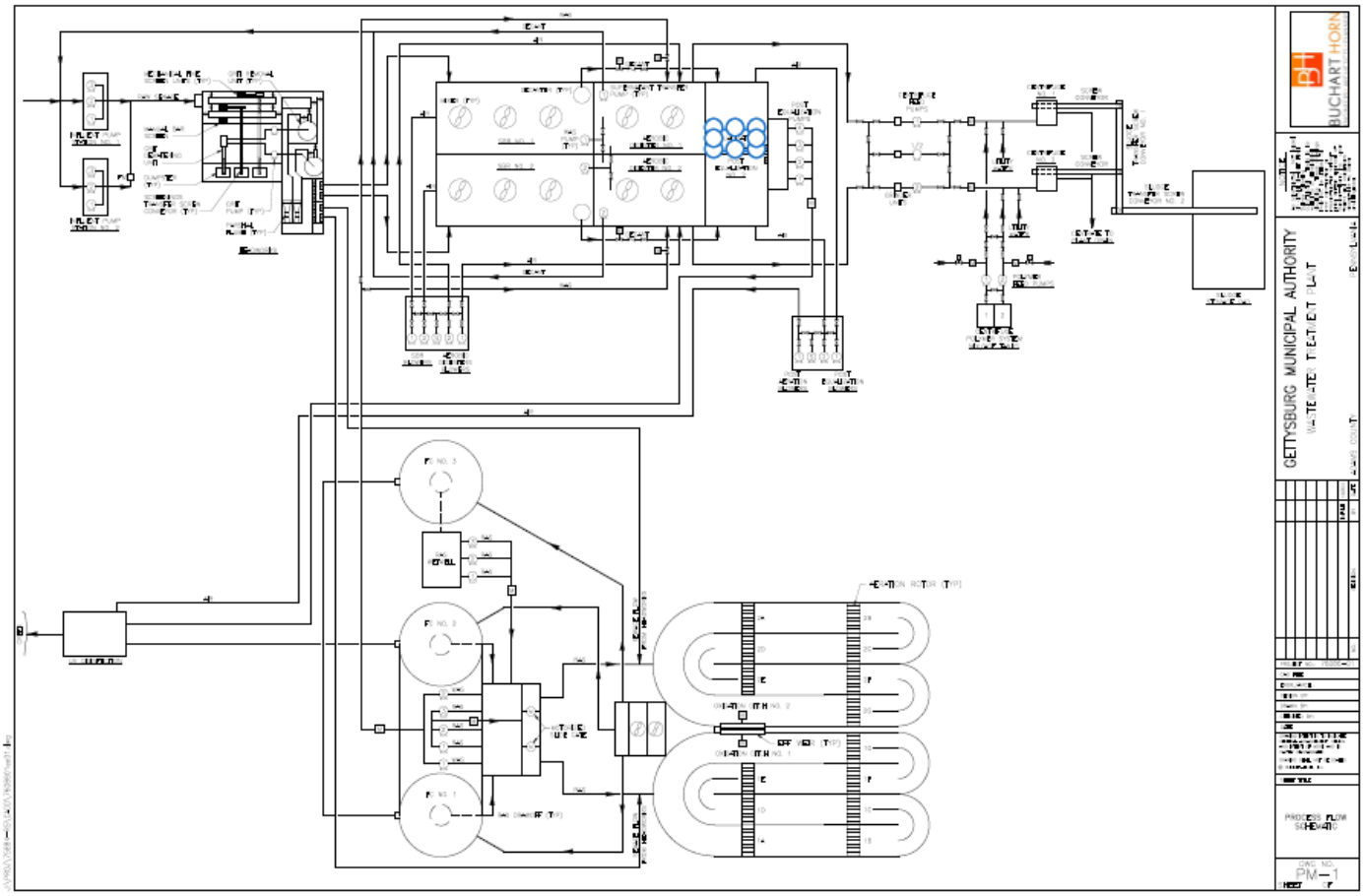
Gettysburg STP NPDES Renewal

LOCATION MAP

0 5,000 10,000 20,000 Feet

BUCHART HORN
ENGINEERS • ARCHITECTS • PLANNERS


Effluent Sampling Point
Influent Sampling Point
GETTYSBURG MUNICIPAL AUTHORITY
WASTEWATER TREATMENT PLANT
SITE PLAN
SW-1


GETTYSBURG MUNICIPAL AUTHORITY
WASTEWATER TREATMENT PLANT
PROCESS FLOW SCHEMATIC
PM-1

WET Summary and Evaluation

Facility Name	Gettysburg MA
Permit No.	PA0021563
Design Flow (MGD)	3
Q_{7-10} Flow (cfs)	0.63
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/17/19	9/7/20	9/27/21	10/4/22
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/17/19	9/7/20	9/27/21	10/4/22
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/17/19	9/18/20	9/28/21	10/4/22
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	9/17/19	9/18/20	9/28/21	10/4/22
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**88** % Effluent
Dilution Series	**22, 44, 88, 94, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Gettysburg Municipal Authority NPDES Permit No.: PA0021563 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Rock Creek

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
3	218	7						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Strea m CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteri a Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		512									
	Chloride (PWS)	mg/L		130									
	Bromide	mg/L		0.14									
	Sulfate (PWS)	mg/L		130									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		270									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		18.7									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		240									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		0.5									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.3									
	Total Copper	µg/L		4.7									
	Free Cyanide	µg/L		1									
	Total Cyanide	µg/L	<	2									
	Dissolved Iron	µg/L		189									
	Total Iron	µg/L		249									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		7.3									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		1.5									
	Total Phenols (Phenolics) (PWS)	µg/L		13									
	Total Selenium	µg/L		0.9									
	Total Silver	µg/L	<	0.3									
	Total Thallium	µg/L	<	1									
	Total Zinc	µg/L		29									
	Total Molybdenum	µg/L		4.1									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L		0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L	<	0.5									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	5									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	10									
	2,4-Dichlorophenol	µg/L	<	10									
	2,4-Dimethylphenol	µg/L	<	10									
	4,6-Dinitro-o-Cresol	µg/L	<	10									
	2,4-Dinitrophenol	µg/L	<	10									
	2-Nitrophenol	µg/L	<	10									
	4-Nitrophenol	µg/L	<	10									
	p-Chloro-m-Cresol	µg/L	<	10									
	Pentachlorophenol	µg/L	<	10									
	Phenol	µg/L	<	10									
	2,4,6-Trichlorophenol	µg/L	<	10									
Group 5	Acenaphthene	µg/L	<	2.5									
	Acenaphthylene	µg/L	<	2.5									
	Anthracene	µg/L	<	2.5									
	Benzidine	µg/L	<	50									
	Benzo(a)Anthracene	µg/L	<	2.5									
	Benzo(a)Pyrene	µg/L	<	2.5									
	3,4-Benzofluoranthene	µg/L	<	2.5									
	Benzo(ghi)Perylene	µg/L	<	2.5									
	Benzo(k)Fluoranthene	µg/L	<	2.5									
	Bis(2-Chloroethoxy)Methane	µg/L	<	5									
	Bis(2-Chloroethyl)Ether	µg/L	<	5									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	5									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5									
	4-Bromophenyl Phenyl Ether	µg/L	<	5									
	Butyl Benzyl Phthalate	µg/L	<	5									
	2-Chloronaphthalene	µg/L	<	5									
	4-Chlorophenyl Phenyl Ether	µg/L	<	5									
	Chrysene	µg/L	<	2.5									
	Dibenzo(a,h)Anthrancene	µg/L	<	2.5									
	1,2-Dichlorobenzene	µg/L	<	0.5									
	1,3-Dichlorobenzene	µg/L	<	0.5									
	1,4-Dichlorobenzene	µg/L	<	0.5									
	3,3-Dichlorobenzidine	µg/L	<	5									
	Diethyl Phthalate	µg/L	<	5									
	Dimethyl Phthalate	µg/L	<	5									
	Di-n-Butyl Phthalate	µg/L	<	5									
	2,4-Dinitrotoluene	µg/L	<	5									

	2,6-Dinitrotoluene	µg/L	<	5									
	Di-n-Octyl Phthalate	µg/L	<	5									
	1,2-Diphenylhydrazine	µg/L	<	5									
	Fluoranthene	µg/L	<	2.5									
	Fluorene	µg/L	<	2.5									
	Hexachlorobenzene	µg/L	<	5									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	5									
	Hexachloroethane	µg/L	<	5									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.5									
	Isophorone	µg/L	<	5									
	Naphthalene	µg/L	<	0.5									
	Nitrobenzene	µg/L	<	5									
	n-Nitrosodimethylamine	µg/L	<	5									
	n-Nitrosodi-n-Propylamine	µg/L	<	5									
	n-Nitrosodiphenylamine	µg/L	<	5									
	Phenanthrene	µg/L	<	2.5									
	Pyrene	µg/L	<	2.5									
	1,2,4-Trichlorobenzene	µg/L	<	0.5									
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Gettysburg Municipal Authority, NPDES Permit No. PA0021563, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Rock Creek

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	059041	11.9	472	19.2			Yes
End of Reach 1	059041	11.14	454	19.6			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	11.9	0.033										100	7		
End of Reach 1	11.14	0.033													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	11.9														
End of Reach 1	11.14														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Gettysburg Municipal Authority, NPDES Permit No. PA0021563, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All | ( ) Inputs | ( ) Results | ( ) Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.474 PMF: 1 Analysis Hardness (mg/l): 203.83 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	852	
Total Antimony	0	0		0	1,100	1,100	1,250	
Total Arsenic	0	0		0	340	340	386	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	23,867	
Total Boron	0	0		0	8,100	8,100	9,206	
Total Cadmium	0	0		0	4.022	4.4	5.0	Chem Translator of 0.914 applied
Total Chromium (III)	0	0		0	1020.886	3,231	3,672	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	18.5	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	108	
Total Copper	0	0		0	26.288	27.4	31.1	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	25.0	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	138.907	202	230	Chem Translator of 0.687 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.87	Chem Translator of 0.85 applied
Total Nickel	0	0		0	855.258	857	974	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	10.948	12.9	14.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	73.9	
Total Zinc	0	0		0	214.235	219	249	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.41	

Acrylonitrile	0	0		0	650	650	739	
Benzene	0	0		0	640	640	727	
Bromoform	0	0		0	1,800	1,800	2,046	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,182	
Chlorobenzene	0	0		0	1,200	1,200	1,364	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	20,457	
Chloroform	0	0		0	1,900	1,900	2,159	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	17,048	
1,1-Dichloroethylene	0	0		0	7,500	7,500	8,524	
1,2-Dichloropropane	0	0		0	11,000	11,000	12,502	
1,3-Dichloropropylene	0	0		0	310	310	352	
Ethylbenzene	0	0		0	2,900	2,900	3,296	
Methyl Bromide	0	0		0	550	550	625	
Methyl Chloride	0	0		0	28,000	28,000	31,823	
Methylene Chloride	0	0		0	12,000	12,000	13,638	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,137	
Tetrachloroethylene	0	0		0	700	700	796	
Toluene	0	0		0	1,700	1,700	1,932	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	7,728	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,410	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,864	
Trichloroethylene	0	0		0	2,300	2,300	2,614	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	636	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,932	
2,4-Dimethylphenol	0	0		0	660	660	750	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	90.9	
2,4-Dinitrophenol	0	0		0	660	660	750	
2-Nitrophenol	0	0		0	8,000	8,000	9,092	
4-Nitrophenol	0	0		0	2,300	2,300	2,614	
p-Chloro-m-Cresol	0	0		0	160	160	182	
Pentachlorophenol	0	0		0	8.723	8.72	9.91	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	523	
Acenaphthene	0	0		0	83	83.0	94.3	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	341	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.57	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	34,096	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,114	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	307	
Butyl Benzyl Phthalate	0	0		0	140	140	159	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	932	
1,3-Dichlorobenzene	0	0		0	350	350	398	
1,4-Dichlorobenzene	0	0		0	730	730	830	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,546	
Dimethyl Phthalate	0	0		0	2,500	2,500	2,841	
Di-n-Butyl Phthalate	0	0		0	110	110	125	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,818	
2,6-Dinitrotoluene	0	0		0	990	990	1,125	
1,2-Diphenylhydrazine	0	0		0	15	15.0	17.0	
Fluoranthene	0	0		0	200	200	227	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	11.4	
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.68	
Hexachloroethane	0	0		0	60	60.0	68.2	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	11,365	
Naphthalene	0	0		0	140	140	159	
Nitrobenzene	0	0		0	4,000	4,000	4,546	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	19,321	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	341	
Phenanthrene	0	0		0	5	5.0	5.68	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	148	

☑ *CFC* CCT (min): 0.474 PMF: 1 Analysis Hardness (mg/l): 203.83 Analysis pH: 7.00

Pollutants	Upstream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	250	
Total Arsenic	0	0		0	150	150	170	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,660	
Total Boron	0	0		0	1,600	1,600	1,818	
Total Cadmium	0	0		0	0.403	0.46	0.52	Chem Translator of 0.879 applied
Total Chromium (III)	0	0		0	132.796	154	175	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	11.8	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	21.6	
Total Copper	0	0		0	16.457	17.1	19.5	Chem Translator of 0.96 applied

Free Cyanide	0	0		0	5.2	5.2	5.91	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,705	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	5.413	7.88	8.95	Chem Translator of 0.687 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.03	Chem Translator of 0.85 applied
Total Nickel	0	0		0	94.993	95.3	108	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.67	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	14.8	
Total Zinc	0	0		0	215.987	219	249	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.41	
Acrylonitrile	0	0		0	130	130	148	
Benzene	0	0		0	130	130	148	
Bromoform	0	0		0	370	370	421	
Carbon Tetrachloride	0	0		0	560	560	636	
Chlorobenzene	0	0		0	240	240	273	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	3,978	
Chloroform	0	0		0	390	390	443	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,523	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,705	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,500	
1,3-Dichloropropylene	0	0		0	61	61.0	69.3	
Ethylbenzene	0	0		0	580	580	659	
Methyl Bromide	0	0		0	110	110	125	
Methyl Chloride	0	0		0	5,500	5,500	6,251	
Methylene Chloride	0	0		0	2,400	2,400	2,728	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	239	
Tetrachloroethylene	0	0		0	140	140	159	
Toluene	0	0		0	330	330	375	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,591	
1,1,1-Trichloroethane	0	0		0	610	610	693	
1,1,2-Trichloroethane	0	0		0	680	680	773	
Trichloroethylene	0	0		0	450	450	511	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	125	
2,4-Dichlorophenol	0	0		0	340	340	386	
2,4-Dimethylphenol	0	0		0	130	130	148	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	18.2	
2,4-Dinitrophenol	0	0		0	130	130	148	
2-Nitrophenol	0	0		0	1,600	1,600	1,818	
4-Nitrophenol	0	0		0	470	470	534	

p-Chloro-m-Cresol	0	0		0	500	500	568	
Pentachlorophenol	0	0		0	6.693	6.69	7.61	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	103	
Acenaphthene	0	0		0	17	17.0	19.3	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	67.1	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.11	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,819	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,034	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	61.4	
Butyl Benzyl Phthalate	0	0		0	35	35.0	39.8	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	182	
1,3-Dichlorobenzene	0	0		0	69	69.0	78.4	
1,4-Dichlorobenzene	0	0		0	150	150	170	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	909	
Dimethyl Phthalate	0	0		0	500	500	568	
Di-n-Butyl Phthalate	0	0		0	21	21.0	23.9	
2,4-Dinitrotoluene	0	0		0	320	320	364	
2,6-Dinitrotoluene	0	0		0	200	200	227	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.41	
Fluoranthene	0	0		0	40	40.0	45.5	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	2.27	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.14	
Hexachloroethane	0	0		0	12	12.0	13.6	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,387	
Naphthalene	0	0		0	43	43.0	48.9	
Nitrobenzene	0	0		0	810	810	921	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,864	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	67.1	
Phenanthrene	0	0		0	1	1.0	1.14	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	29.5	

☑ THH CCT (min): 0.474 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	6.36	
Total Arsenic	0	0		0	10	10.0	11.4	
Total Barium	0	0		0	2,400	2,400	2,728	
Total Boron	0	0		0	3,100	3,100	3,523	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	4.55	
Dissolved Iron	0	0		0	300	300	341	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,137	
Total Mercury	0	0		0	0.050	0.05	0.057	
Total Nickel	0	0		0	610	610	693	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.27	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.41	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	114	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	6.48	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	37.5	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	77.3	

Methyl Bromide	0	0		0	100	100.0	114	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	64.8	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	114	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	11,365	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	34.1	
2,4-Dichlorophenol	0	0		0	10	10.0	11.4	
2,4-Dimethylphenol	0	0		0	100	100.0	114	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.27	
2,4-Dinitrophenol	0	0		0	10	10.0	11.4	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,546	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	79.6	
Anthracene	0	0		0	300	300	341	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	227	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.11	
2-Chloronaphthalene	0	0		0	800	800	909	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,137	
1,3-Dichlorobenzene	0	0		0	7	7.0	7.96	
1,4-Dichlorobenzene	0	0		0	300	300	341	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	682	
Dimethyl Phthalate	0	0		0	2,000	2,000	2,273	
Di-n-Butyl Phthalate	0	0		0	20	20.0	22.7	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	

2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	22.7	
Fluorene	0	0		0	50	50.0	56.8	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.55	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	38.6	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	11.4	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	22.7	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.08	

☑ CRL CCT (min): 5.930 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	

Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.12	
Benzene	0	0		0	0.58	0.58	1.2	
Bromoform	0	0		0	7	7.0	14.5	
Carbon Tetrachloride	0	0		0	0.4	0.4	0.83	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	1.66	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	1.97	
1,2-Dichloroethane	0	0		0	9.9	9.9	20.5	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	1.87	
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.56	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	41.5	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.41	
Tetrachloroethylene	0	0		0	10	10.0	20.7	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	1.14	
Trichloroethylene	0	0		0	0.6	0.6	1.24	
Vinyl Chloride	0	0		0	0.02	0.02	0.041	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.062	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	3.11	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.0002	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.002	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0002	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.002	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.021	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.062	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	0.66	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.25	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0002	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.1	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.1	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.1	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.062	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0002	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.021	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.21	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.002	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.001	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.01	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	6.85	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)

Total Boron	Report	Report	Report	Report	Report	µg/L	1,818	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	19.5	CFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	8.53	13.3	341	532	852	µg/L	341	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,705	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	5.67	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	219	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	2,728	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	0.52	µg/L	Discharge Conc < TQL
Total Chromium (III)	175	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	11.8	µg/L	Discharge Conc < TQL
Total Cobalt	21.6	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	4.55	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Lead	8.95	µg/L	Discharge Conc < TQL
Total Manganese	1,137	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.057	µg/L	Discharge Conc < TQL
Total Nickel	108	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	12.9	µg/L	Discharge Conc < TQL
Total Thallium	0.27	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.12	µg/L	Discharge Conc < TQL
Benzene	1.2	µg/L	Discharge Conc < TQL
Bromoform	14.5	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	0.83	µg/L	Discharge Conc < TQL
Chlorobenzene	114	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	1.66	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	3,978	µg/L	Discharge Conc < TQL
Chloroform	6.48	µg/L	Discharge Conc < TQL

Dichlorobromomethane	1.97	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	20.5	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	37.5	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	1.87	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.56	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	77.3	µg/L	Discharge Conc < TQL
Methyl Bromide	114	µg/L	Discharge Conc < TQL
Methyl Chloride	6,251	µg/L	Discharge Conc < TQL
Methylene Chloride	41.5	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.41	µg/L	Discharge Conc < TQL
Tetrachloroethylene	20.7	µg/L	Discharge Conc < TQL
Toluene	64.8	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	114	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	693	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	1.14	µg/L	Discharge Conc < TQL
Trichloroethylene	1.24	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.041	µg/L	Discharge Conc < TQL
2-Chlorophenol	34.1	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	11.4	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	114	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.27	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	11.4	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,818	µg/L	Discharge Conc < TQL
4-Nitrophenol	534	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.062	µg/L	Discharge Conc < TQL
Phenol	4,546	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	3.11	µg/L	Discharge Conc < TQL
Acenaphthene	19.3	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	341	µg/L	Discharge Conc < TQL
Benzidine	0.0002	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.002	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0002	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.002	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.021	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.062	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	227	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	0.66	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	61.4	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.11	µg/L	Discharge Conc < TQL

2-Chloronaphthalene	909	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.25	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0002	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	182	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	7.96	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	170	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.1	µg/L	Discharge Conc < TQL
Diethyl Phthalate	682	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	568	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	22.7	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.1	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.1	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.062	µg/L	Discharge Conc < TQL
Fluoranthene	22.7	µg/L	Discharge Conc < TQL
Fluorene	56.8	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0002	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.021	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.14	µg/L	Discharge Conc < TQL
Hexachloroethane	0.21	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.002	µg/L	Discharge Conc < TQL
Isophorone	38.6	µg/L	Discharge Conc < TQL
Naphthalene	48.9	µg/L	Discharge Conc < TQL
Nitrobenzene	11.4	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.001	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.01	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	6.85	µg/L	Discharge Conc < TQL
Phenanthrene	1.14	µg/L	Discharge Conc < TQL
Pyrene	22.7	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.08	µg/L	Discharge Conc < TQL

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	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	Report	XXX	XXX	1/day	Recorded
$CBOD_5$	250	375	XXX	10.0	15.0	20	2/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	375	563	XXX	15.0	22.5	30	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Ammonia May 1 - Oct 31	25	XXX	XXX	1.0	XXX	2	2/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	75	XXX	XXX	3.0	XXX	6	2/week	24-Hr Composite
Total Phosphorus	8.5	XXX	XXX	0.6	XXX	1.2	2/week	24-Hr Composite

Existing Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Total Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia-Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Kjeldahl Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	44,748	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	5,966	XXX	XXX	XXX	XXX	1/month	Calculation

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" (362-0400-001), 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
UV Intensity (mW/cm^2)	XXX	XXX	Report	Report	XXX	XXX	1/day	Recorded
$CBOD_5$	250.0	375.0	XXX	10.0	15.0	20.0	2/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	375.0	563.0	XXX	15.0	22.5	30.0	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia May 1 - Oct 31	25.0	XXX	XXX	1.0	XXX	2.0	2/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	75.0	XXX	XXX	3.0	XXX	6.0	2/week	24-Hr Composite
Total Phosphorus	8.5	XXX	XXX	0.6	XXX	1.2	2/week	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" (362-0400-001), 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	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	44,748	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	5,966	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location:

Other Comments:

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, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033
☐	Other: