pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0023108**
Facility Type	**Municipal**	APS ID	**276373**
Major / Minor	**Major**	Authorization ID	**1338097**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Borough of Elizabethtown**	Facility Name	**Elizabethtown STP**
Applicant Address	600 S Hanover Street	Facility Address	101 Amosite Road
	Elizabethtown, PA 17022		Elizabethtown, PA 17022-9596
Applicant Contact	Rebecca Denlinger	Facility Contact	Dennis Bair
Applicant Phone	(717) 367-1700	Facility Phone	(717) 917-5385
Client ID	77244	Site ID	250924
Ch 94 Load Status	Not Overloaded	Municipality	Elizabethtown Borough
Connection Status	No Limitations	County	Lancaster
Date Application Received	December 29, 2020	EPA Waived?	No
Date Application Accepted	January 13, 2021	If No, Reason	Major Facility, Significant CB Discharge

Purpose of Application: NPDES Renewal.

Summary of Review

The Borough of Elizabethtown has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued June 20, 2016 and became effective on July 1, 2016, authorizing discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Elizabethtown Borough, Lancaster County into Susquehanna River and Conoy Creek. The existing permit expiration date was June 30,2021, and the permit has been administratively extended since that time.

The Borough of Elizabethtown WWTP serves the Borough of Elizabethtown (52% of flow contributions) and Elizabethtown Regional Sewer Authority (ERSA – Mount Joy Township and West Donegal Township)(48% of flow contributions). The Borough of Elizabethtown listed six (6) permitted industrial users in their NPDES renewal application: The MARS Wrigley Confectionary, the Masonic Village, the Elizabethtown Area School District, the Elizabethtown College, the Boyer Funeral Home, Inc., and the Miller-Finkenbinder Funeral Home & Company. Of these, only the MARS Wrigley Confectionary is classified as a significant industrial user. Per the previous fact sheet, it was calculated that the new design peak hourly flow will reach 15 mgd during wet weather events. Elizabethtown met with DEP concerning the fact that the existing outfall is not large enough for the new design flows (for the 2003 expansion) and would be a major cost to expand, in addition to the consideration of the anticipated requirements of nitrogen removal sometime in the future. Elizabethtown agreed to include denitrification in the new WWTP's design as long as DEP would approve an overflow of treated effluent to Conoy Creek during periods of extreme wet weather. Therefore, the 2005 fact sheet prepared effluent limitations for a 4.5 mgd WWTP to the Susquehanna River at Outfall 001 with a 9 mgd wet weather treated overflow to Conoy Creek at Outfall 002.

Changes in this renewal: Total Zinc and Total Copper monitoring was added to Outfall 001. E. Coli monitoring was added to Outfall 001 and 002.

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	December 21, 2021
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	December 22, 2021
X		Maria D. Bebenek Maria D. Bebenek, P.E./ Program Manager	December 22, 2021

Summary of Review

Sludge use and disposal description and location(s): Aerobic digestion and disposal at Frey Farms Landfill

Supplemental information for this facility is provided at the end of this fact sheet.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	4.5
Latitude	40º 4' 55.2"	Longitude	76º 39' 53"
Quad Name	York Haven	Quad Code	1832
Wastewater Description:	Sewage Effluent		
Receiving Waters	Susquehanna River (WWF, MF)	Stream Code	6685
NHD Com ID	57464417	RMI	37.8
Drainage Area	25,500 mi^2	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	3,210	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	249	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	TSF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	pH, Polychlorinated Biphenyls		
Source(s) of Impairment	Source Unknown, Source Unknown		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Columbia Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	10

Changes Since Last Permit Issuance: USGS PA StreamStats provided a drainage area of 25,500 mi^2 and a Q_{7-10} of 3,210 cfs at the point of discharge.

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	9.0
Latitude	40º 7' 44"	Longitude	76º 37' 29"
Quad Name	Elizabethtown	Quad Code	1733
Wastewater Description:	Sewage Effluent		
Receiving Waters	Conoy Creek (TSF, MF)	Stream Code	8278
NHD Com ID	57463313	RMI	6.0
Drainage Area	7.9 mi^2	Yield (cfs/mi^2)	0.034
Q_{7-10} Flow (cfs)	0.271	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	388	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	TSF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Habitat Alterations, Siltation, Siltation		
Source(s) of Impairment	Habitat Modification – Other than Hydromodification, Habitat Modification – Other than Hydromodification, Agriculture		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Columbia Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	16

Changes Since Last Permit Issuance: USGS PA StreamStats provided a drainage area of 7.9 mi^2 and a Q_{7-10} of 0.271 cfs at the point of discharge.

Other Comments: Outfall 002 only discharges to Conoy Creek during heavy wet weather events when peak hourly flows exceed the 6.0 mgd carrying capacity of the Outfall 001 line to Susquehanna River. At the design peak hourly flow of 15 mgd, 9 mgd would overflow to Conoy Creek. The past year DMR data indicates there was flow from Outfall 002 in 7 of the last 12 months. Per the previous renewal fact sheets, since this discharge only occurs during wet weather events, using the Q_{7-10} flow as the design flow would not be appropriate.

The previous permit writer discussed the appropriate stream flow with the permittee, and determined that the water quality modeling should use a streamflow based on a dilution ratio of 2.93:1. This ratio was based on what was needed for the modeling to recommend an NH_3-N limit of 5.0 mg/l. The existing NPDES permit contains a Part C condition which states, “No discharge to Conoy Creek (Outfall 002) shall be permitted unless there is at least 2.93 gallons of streamflow for every 1 gallon of effluent overflow as averaged during the period of overflow.” As a result, this permit renewal will continue to utilize the 2.93:1 ratio to determine streamflow. At a discharge flow of 9.0 mgd, the resulting streamflow would be 40.8 cfs. The Part C requirements in the existing permit regarding the discharge to Outfall 002 will remain in the renewal.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003, 004, 005, 006, 007	Design Flow (MGD)	Variable (Stormwater)
	40º 7' 42" (003)		76º 37' 35" (003)
	40º 7' 42" (004)		76º 37' 32" (004)
	40º 7' 42" (005)		76º 37' 29" (005)
	40º 7' 48" (006)		76º 37' 30" (006)
Latitude	40º 7' 50" (007)	Longitude	76º 37' 31" (007)
Quad Name	Elizabethtown	Quad Code	1733
Wastewater Description:	Sewage Effluent		

Receiving Waters	Conoy Creek (TSF,MF)	Stream Code	8278
NHD Com ID	57463313	RMI	6.0
Drainage Area	7.9 mi^2	Yield (cfs/mi^2)	0.034
Q_{7-10} Flow (cfs)	0.271	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	388	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	TSF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Habitat Alterations, Siltation, Siltation		
Source(s) of Impairment	Habitat Modification – Other than Hydromodification, Habitat Modification – Other than Hydromodification, Agriculture		
TMDL Status	N/A	Name	N/A

Nearest Downstream Public Water Supply Intake	Columbia Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	16

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Total Nitrogen Reduction	Oxidation Ditch	Hypochlorite	4.5
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
7.2	8,650	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance: None

Other Comments: The WWTP consists of the following: Two mechanical fine screens and vortex grit separator – Two Oxidation ditches – Two secondary clarifiers – Rotary drum thickeners – Aerobic digester – Volute dewatering press – Chlorine contact tank – Cascade aeration unit - Outfall 001 to Susquehanna River.

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	3/15/2016: A routine inspection was conducted. All treatment units were online. No issues were observed, and the effluent was clear. 6/27/2017: A routine inspection was conducted. Some grease accumulation was present in the influent wet well. The clarifiers had a clear effluent, and some algae was present on the effluent weir and trough. The chlorine contact tanks had a clear appearance. The Outfall 001 effluent appeared clear, and met field test parameters. 4/19/2018: A routine inspection was conducted. The rotors in the oxidation ditches had been replaced with aerators, and the thickener feed pumps were in the process of being rebuilt. No issues were observed. 2/15/2019: A routine inspection was conducted. The clarifiers had a clear appearance, with algae present on the trough and weirs. The chlorine contact tanks appeared clear. Field results were within permitted limits. No issues were observed at the outfalls. 7/15/2019: An incident report was recorded. A sanitary sewer overflow occurred on 7/14 and entered the storm drain which discharges to Conoy Creek. No evidence of solids was visible on roadways or within stormwater inlets. The stream appeared clear without evidence of solids or odor. Living fish were observed from the bridge to approximately 200 ft. downstream. No dead fish or aquatic life were observed. 3/10/2020: A routine inspection was conducted. The clarifiers had a clear appearance. Heavy algae accumulation was present on the trough and weirs. The scum pit had a heavy accumulation of solids. Both chlorine contact tanks were online and appeared clear. Field results were within permit limits, and the effluent appeared clear. 11/2/2021: A routine inspection was conducted. The clarifiers had a clear appearance. Heavy algae accumulation was present on the trough and weirs. The scum pit had a heavy accumulation of solids. Both chlorine contact tanks were online and appeared clear. Field results were within permit limits, and the effluent appeared clear.

Other Comments: There are currently no open violations associated with the permittee or facility.

Compliance History

DMR Data for Outfall 001 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
Flow (MGD) Average Monthly	2.169	3.867	1.985	2.049	1.685	1.86	2.192	2.906	2.576	2.249	2.408	1.816
Flow (MGD) Daily Maximum	3.523	11.638	3.622	3.708	1.959	2.187	2.988	6.977	5.881	3.428	7.506	2.395
pH (S.U.) Minimum	7.74	7.28	7.82	7.69	7.75	7.72	7.66	7.26	7.51	7.65	7.25	7.75
pH (S.U.) Instantaneous Maximum	7.94	7.94	7.97	8.1	7.93	7.92	7.85	7.79	7.78	7.82	7.89	7.89
DO (mg/L) Minimum	8.5	7.2	8.1	8.1	8.1	8.7	9.2	9.6	10.5	10.1	8.6	9.0
TRC (mg/L) Average Monthly	0.3	0.29	0.35	0.29	0.25	0.35	0.25	0.23	< 0.32	0.37	0.36	0.41
TRC (mg/L) Instantaneous Maximum	0.51	0.53	0.49	0.48	0.37	0.49	0.42	0.45	0.49	0.5	0.52	1.08
CBOD5 (lbs/day) Average Monthly	49	106	52	< 46	41	< 35	50	76	68	51	< 35	< 30
CBOD5 (lbs/day) Weekly Average	55	220	60	< 61	45	43	59	120	88	57	< 43	< 31
CBOD5 (mg/L) Average Monthly	3	3	3	< 3	3	< 2	3	3	3	3	< 2	< 2
CBOD5 (mg/L) Weekly Average	3.0	4.0	4.0	4.0	3.0	3.0	3.0	4.0	4.0	3.0	< 2.0	< 2.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	3755	4391	3560	3232	3421	3605	3624	3884	3737	3864	3347	3222
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	4159	6968	4113	4848	3972	4249	4134	4551	4288	4491	4327	3596
BOD5 (mg/L) Raw Sewage Influent Average Monthly	203	146	194	174	219	213	191	157	179	199	183	202
TSS (lbs/day) Average Monthly	< 70	< 233	< 68	< 79	< 56	< 62	< 70	< 99	< 83	< 73	< 69	< 60

TSS (lbs/day) Raw Sewage Influent Average Monthly	4050	6483	4186	4727	3624	3878	4017	4582	4402	3949	3890	3660
TSS (lbs/day) Raw Sewage Influent Daily Maximum	4758	13182	6230	6593	4117	4525	4746	5414	5168	4458	6950	4397
TSS (lbs/day) Weekly Average	< 73	< 704	< 80	< 122	< 60	< 69	< 78	< 161	< 118	< 92	< 86	< 62
TSS (mg/L) Average Monthly	< 4	< 5.1	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
TSS (mg/L) Raw Sewage Influent Average Monthly	219	202	225	248	232	228	212	185	210	205	215	229
TSS (mg/L) Weekly Average	< 5	< 8.9	4	< 6	< 4	< 4	< 4	< 4	4	< 4	< 4	< 4
Fecal Coliform (CFU/100 ml) Geometric Mean	< 2	< 4	< 1	6	< 4	< 2	5	7	< 4	2	9	< 10
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	21	74	14	188	117	7	603	34	32	3	4300	26
Nitrate-Nitrite (mg/L) Average Monthly	2.1	2.86	1.89	1.76	1.89	2.06	2.2	2.89	2.65	2.63	2.58	2.07
Nitrate-Nitrite (lbs) Total Monthly	1111	2780	1003	1022	803	985	1150	2349	1530	1469	1388	923
Total Nitrogen (lbs/day) Average Monthly	< 46	< 113	< 47	< 48	< 41	< 44	< 53	100	72	< 60	< 57	42
Total Nitrogen (mg/L) Average Monthly	< 2.7	< 3.49	< 2.75	< 2.56	< 2.89	< 2.85	< 3.04	3.86	3.47	< 3.32	< 3.31	2.82
Total Nitrogen (lbs) Effluent Net Total Monthly	< 1436	< 3387	< 1463	< 1495	< 1225	< 1367	< 1596	3102	2009	< 1847	< 1780	1258
Total Nitrogen (lbs) Total Monthly	< 1436	< 3387	< 1463	< 1495	< 1225	< 1367	< 1596	3102	2009	< 1847	< 1780	1258
Total Nitrogen (lbs) Effluent Net Total Annual		< 22178										
Total Nitrogen (lbs) Total Annual		< 22178										
Ammonia (lbs/day) Average Monthly	1	< 5	< 1	< 1	< 2	< 2	< 2	< 2	2	< 1	< 1	< 0.9

Ammonia (mg/L) Average Monthly	0.08	< 0.11	< 0.09	< 0.08	< 0.11	< 0.15	< 0.12	< 0.1	0.12	< 0.07	< 0.05	< 0.06
Ammonia (lbs) Total Monthly	40	< 150	< 45	< 46	< 46	< 72	< 62	< 69	66	< 42	< 30	< 27
Ammonia (lbs) Total Annual		< 685										
TKN (mg/L) Average Monthly	< 0.61	< 0.64	< 0.86	< 0.8	< 1	< 0.79	< 0.85	0.97	0.82	< 0.69	< 0.72	0.75
TKN (lbs) Total Monthly	< 324	< 607	< 461	< 474	< 422	< 382	< 447	753	479	< 378	< 392	336
Total Phosphorus (lbs/day) Average Monthly	4.0	21.0	7.0	5.0	5.0	6.0	5.0	12.0	4.0	5.0	4.0	3.0
Total Phosphorus (mg/L) Average Monthly	0.23	0.74	0.39	0.25	0.32	0.4	0.29	0.5	0.21	0.29	0.21	0.17
Total Phosphorus (lbs) Effluent Net Total Monthly	126	624	205	148	136	191	150	360	121	165	112	77
Total Phosphorus (lbs) Total Monthly	126	624	205	148	136	191	150	360	121	165	112	77
Total Phosphorus (lbs) Effluent Net Total Annual		5303										
Total Phosphorus (lbs) Total Annual		5303										

DMR Data for Outfall 002 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
Flow (MGD) Average Monthly	0.011	2.604	0.039	0.065				0.145	0.686		0.892	
Flow (MGD) Daily Maximum	0.011	6.139	0.04	0.091				0.145	0.686		1.471	
pH (S.U.) Minimum	7.89	7.28	7.87	7.69				7.26	7.53		7.25	
pH (S.U.) Instantaneous Maximum	7.89	7.9	7.87	7.87				7.26	7.53		7.81	
DO (mg/L) Minimum	9.0	7.2	8.1	8.1				9.6	10.6		8.6	
TRC (mg/L) Average Monthly	0.41	0.39	0.42	0.31				0.45	0.19		0.29	

TRC (mg/L) Instantaneous Maximum	0.41	0.49	0.44	0.39				0.45	0.19		0.37	
CBOD5 (mg/L) Average Monthly	3	4	3	< 2				3	3		< 2	
CBOD5 (mg/L) Weekly Average	3	4	3	2				3	3		< 2	
TSS (mg/L) Average Monthly	< 4	< 8.9	< 4	< 4				< 4	4		< 4	
TSS (mg/L) Weekly Average	< 4	13.8	4	< 4				< 4	4		< 4	
Fecal Coliform (CFU/100 ml) Geometric Mean	2	< 1	< 1	66				7	7		4	
Total Nitrogen (mg/L) Average Monthly	2.69	3.71	< 2.76	< 2.23				4.76	4.76		3.63	
Ammonia (mg/L) Average Monthly	0.06	0.19	< 0.07	0.09				0.09	0.09		0.08	
Total Phosphorus (mg/L) Average Monthly	0.14	0.55	0.44	0.19				0.36	0.36		0.27	

Compliance History

Effluent Violations for Outfall 002, from: December 1, 2020 To: October 31, 2021

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	03/31/21	Avg Mo	0.45	mg/L	0.44	mg/L

Existing Effluent Limitations and Monitoring Requirements

The tables below summarize the effluent limits and monitoring requirements implemented in the existing NPDES permit.

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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
CBOD5	938	1407 Wkly Avg	XXX	25	37.5	50	2/week	24-Hr Composite
TSS	1126	1689 Wkly Avg	XXX	30	45	60	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/week	Grab
Ammonia	Report	XXX	XXX	Report	XXX	Report	2/week	24-Hr Composite
Total Nitrogen	300	XXX	XXX	8.0	XXX	XXX	1/month	Calculation
Total Phosphorus	37.5	XXX	XXX	1.0	XXX	3	2/week	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	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	109,500	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	13,688	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Composite samples may be taken before or after disinfection; grab samples shall be taken after disinfection.

Outfall 002

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	1/discharge	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	Refer to Part C.V.B.	Refer to Part C.V.B.
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	Refer to Part C.V.B.	Refer to Part C.V.B.
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.44	XXX	1.43	Refer to Part C.V.B.	Refer to Part C.V.B.
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	20	30	40	Refer to Part C.V.B.	Refer to Part C.V.B.
Total Suspended Solids	XXX	XXX	XXX	30	45	60	Refer to Part C.V.B.	Refer to Part C.V.B.
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	Refer to Part C.V.B.	Refer to Part C.V.B.
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	Refer to Part C.V.B.	Refer to Part C.V.B.
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	8.0	XXX	16	Refer to Part C.V.B.	Refer to Part C.V.B.
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	5.0	XXX	10	Refer to Part C.V.B.	Refer to Part C.V.B.
Total Nitrogen	XXX	XXX	XXX	8.0	XXX	XXX	Refer to Part C.V.B.	Refer to Part C.V.B.
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	3	Refer to Part C.V.B.	Refer to Part C.V.B.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 4.5
Latitude 40º 4' 55.2" **Longitude** 76º 39' 53"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

$CBOD_5$ & NH_3-N.

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.1b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N) and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit renewal. The model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 25 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The flow data used to run the model was acquired from USGS PA StreamStats, and is included as an attachment. The $CBOD_5$ limit is the same as the existing permit limit, which will remain in the renewal permit. DEP's SOP No. BCW-PMT-033 states that for existing discharges, if WQM modeling results for summer indicates that an average monthly limit of 25 mg/l is acceptable, a year-round monitoring requirement for NH_3-N should generally be established, at a minimum. The existing permit has a year-round monitoring requirement for NH_3-N, which is consistent with the SOP and will remain in the permit.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.3 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis. Stream pH and hardness inputs were based on data acquired from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network (WQN) Station ID 201 from 2010 to 2020 for pH and hardness. A 90th percentile analysis was performed on the data which provided a stream pH of 8.376 and hardness of 128 mg/l. Based on effluent sample results reported on the application, the Toxics Management Spreadsheet recommended monitoring for Total Zinc and Total Copper.

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

a. Establish average monthly and instantaneous maximum (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.

Since the reported maximum concentrations for Total Zinc and Total Copper were greater than 10% of their respective WQBELs, per DEP's SOP No. BPNPSM-PMT-033, monitoring requirements will be added to the permit for these parameters. A measurement frequency of 1/quarter will be used.

Total Residual Chlorine

The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92, Section 92.2d (3) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The attached printout indicates that a water quality limit of 0.5 mg/l would be needed to prevent toxicity concerns. It is recommended that a TRC limit of 0.5 mg/l monthly average and 1.6 mg/l instantaneous maximum be applied this permit cycle, the same as the existing permit.

Best Professional Judgement (BPJ) Limitations

Dissolved Oxygen
A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This is the existing permit limit, and it is recommended that it remain in the permit to ensure that the facility continues to achieve compliance with water quality standards.

Additional Considerations

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed 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). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on December 17, 2019, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads 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. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow. For new Phase 4 and 5 sewage dischargers, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

The Borough of Elizabethtown WWTP is a Phase 1 significant discharger. The facility's waste load allocation (WLA) is tracked under an individual WLA as a significant discharger in the Phase 3 Supplement. The following Cap Loads specified in the current Phase 3 Supplement will be included in the draft permit:

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
PA0023108	1	Elizabethtown Borough	6/20/2016	6/30/2021	10/1/2010	109,500	-	13,688	.961	0..436

The Cap Loads are unchanged from the existing permit. On February 8, 2008, Cap Loads for TN and TP based on 6.0 mg/l and 0.8 mg/l, respectively, were introduced into the NPDES permit. The Borough of Elizabethtown appealed the permit due to a disagreement on the calculation of the Cap Loads. The Borough asserted that the WWTP was designed for an effluent TN concentration of 8 mg/l and TP concentration of 2 mg/l based on DEP's direction in 1999, and that the Borough had made significant modifications based on that direction. The appeal was settled with DEP agreeing to drop the annual mass limits for nutrients, and in place DEP added a TN limit of 8.0 mg/l as a monthly average, and a TP limit of 1.0 mg/l as a monthly average and 3.0 mg/l as an instantaneous maximum. The existing permit contains language in Part A.1.C. of the permit that states "The loading amount of 82,191 lbs/year for Total Nitrogen and 10,959 lbs/year for Total Phosphorus shall be used for the purposes of determining eligibility to sell nutrient credits. Loadings less than these values may be sold as part of the nutrient trading process." This language will be carried over to the renewal permit.

The Phase 3 Supplement states that "the minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for significant sewage dischargers will be 2/week." This is consistent with the existing permit, and a monitoring frequency of 2/week will remain in the renewal. DEP no longer offers any tools to calculate monthly loads for Net TN and Net TP, and it is no longer needed since offsets and credits are applied annually. Therefore, this reporting requirement is no longer needed and will be removed from the 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 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.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/l and the discharge flow exceeds 0.1 mgd, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 mgd or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/l.

Based on the sampling data provided in the application, the maximum TDS concentration was 798 mg/l, and the maximum Bromide concentration was 0.2 mg/l. Therefore, monitoring requirements for these parameters will not be required.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. This is consistent with the existing permit limits, which will remain in the renewal.

E. Coli

PA Code § 92a.61 requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of >= 1 mgd will include E. Coli monitoring with a frequency of 1/month. This parameter has been added to the renewal permit.

Sampling Frequency & Sample Type

The monitoring requirements were established based on the BPJ and/or Table 6-3 of DEP's technical guidance No. 362-0400-001.

Flow Monitoring

Flow monitoring is recommended by DEP's technical guidance and is also required by 25 PA Code §§ 92a.27 and 92a.61.

Influent BOD_5 and Total Suspended Solids (TSS) Monitoring

As a result of negotiation with US EPA, influent monitoring of TSS and BOD_5 are required for any publicly owned treatment works (POTWs); therefore, influent sampling of BOD_5 and TSS will be included in the permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for effluent TSS and $CBOD_5$.

Mass Loading Limitation

All mass loading effluent limitations recommended in the draft permit are concentration-based, calculated using a formula: design flow (MGD) x concentration limit (mg/l) x conversion factor of 8.34.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream 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

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is a fish consumption impairment for polychlorinated biphenyls and pH due to an unknown source.

Class A Wild Trout Fisheries

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

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 9.0
Latitude 40º 7' 44" **Longitude** 76º 37' 29"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

$CBOD_5$ & NH_3-N.

The WQM 7.0 ver. 1.1b model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 8.82 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The existing $CBOD_5$ limit of 20 mg/l and NH_3-N limit of 5.0 mg/l are more stringent and will remain in the permit. The flow data used to run the model was acquired from USGS PA StreamStats, and is included as an attachment. The model was run using the streamflow to discharge ratio of 2.93:1, discussed above in the fact sheet.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.3 to develop appropriate permit requirements for toxic pollutants of concern. The reported sample results were modified using a 0.33 dilution factor, due to the fact that maximum sewage flow of 4.5 mgd is only a portion of the potential 13.5 mgd flow. The additional 9.0 mgd is not expected to have significant amounts of contaminants as it is mainly I&I from wet weather events. Stream pH and hardness inputs were based on data acquired from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network (WQN) Station ID 269 on Conewago Creek from 2011 to 2020 for pH and hardness. A 90th percentile analysis was performed on the data which provided a stream pH of 7.46 and hardness of 301.9 mg/l.

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

a. Establish average monthly and instantaneous maximum (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.

Based on the effluent sample results reported on the application, Dichlorobromomethane would need to be monitored. However, as this parameter is only slightly over 25%, and the 2.93:1 dilution ratio will very rarely be seen, and only for brief periods of time, monitoring for Dichlorobromomethane will not be included in the permit. This is consistent with how the toxics analysis was performed in previous renewals.

Total Residual Chlorine

The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92, Section 92.2d (3) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The attached printout indicates that a water quality limit of 0.44 mg/l would be needed to prevent toxicity concerns. It is recommended that a TRC limit of 0.44 mg/l monthly average and 1.43 mg/l instantaneous maximum be applied this permit cycle, the same as the existing permit.

Best Professional Judgement (BPJ) Limitations

Dissolved Oxygen
A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This is the existing permit limit, and it is recommended that it remain in the permit to ensure that the facility continues to achieve compliance with water quality standards.

Additional Considerations

Chesapeake Bay Total Maximum Daily Load (TMDL)

The Borough of Elizabethtown WWTP is a Phase 1 significant discharger. The facility's waste load allocation (WLA) is tracked under an individual WLA as a significant discharger in the Phase 3 Supplement. The following Cap Loads specified in the current Phase 3 Supplement will be included in the draft permit:

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
PA0023108	1	Elizabethtown Borough	6/20/2016	6/30/2021	10/1/2010	109,500	-	13,688	.961	0..436

The Cap Loads are unchanged from the existing permit. On February 8, 2008, Cap Loads for TN and TP based on 6.0 mg/l and 0.8 mg/l, respectively, were introduced into the NPDES permit. The Borough of Elizabethtown appealed the permit due to a disagreement on the calculation of the Cap Loads. The Borough asserted that the WWTP was designed for an effluent TN concentration of 8 mg/l and TP concentration of 2 mg/l based on DEP's direction in 1999, and that the Borough had made significant modifications based on that direction. The appeal was settled with DEP agreeing to drop the annual mass limits for nutrients, and in place DEP added a TN limit of 8.0 mg/l as a monthly average, and a TP limit of 1.0 mg/l as a monthly average and 3.0 mg/l as an instantaneous maximum. The existing permit contains language in Part A.1.C. of the permit that states "The loading amount of 82,191 lbs/year for Total Nitrogen and 10,959 lbs/year for Total Phosphorus shall be used for the purposes of determining eligibility to sell nutrient credits. Loadings less than these values may be sold as part of the nutrient trading process." This language will be carried over to the renewal permit.

The Phase 3 Supplement states that "the minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for significant sewage dischargers will be 2/week." This is consistent with the existing permit, and a monitoring frequency of 2/week will remain in the renewal. DEP no longer offers any tools to calculate monthly loads for Net TN and Net TP, and it is no longer needed since offsets and credits are applied annually. Therefore, this reporting requirement is no longer needed and will be removed from the 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 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.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/l and the discharge flow exceeds 0.1 mgd, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 mgd or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/l.

Based on the sampling data provided in the application, the maximum TDS concentration was 798 mg/l, and the maximum Bromide concentration was 0.2 mg/l. Therefore, monitoring requirements for these parameters will not be required.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. This is consistent with the existing permit limits, which will remain in the renewal.

E. Coli

PA Code § 92a.61 requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of >= 1 mgd will include E. Coli monitoring with a frequency of 1/month. This parameter has been added to the renewal permit.

Sampling Frequency & Sample Type

The monitoring requirements were established based on the BPJ and/or Table 6-3 of DEP's technical guidance No. 362-0400-001.

Flow Monitoring

Flow monitoring is recommended by DEP's technical guidance and is also required by 25 PA Code §§ 92a.27 and 92a.61.

Mass Loading Limitation

All mass loading effluent limitations recommended in the draft permit are concentration-based, calculated using a formula: design flow (MGD) x concentration limit (mg/l) x conversion factor of 8.34.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream 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

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is an aquatic life impairment for habitat alterations and siltation due to habitat modifications – other than hydromodification, and for siltation due to agriculture.

Class A Wild Trout Fisheries

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

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%, 60%, 30%, 2%, and 1%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 2%.

Summary of Four Most Recent Test Results

TST Data Analysis

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
8/14/2018	Pass	Pass	Pass	Pass
8/26/2019	Pass	Pass	Pass	Pass
6/15/2020	Pass	Pass	Pass	Pass
9/26/2021	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t 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**

Comments: All of the endpoint results were greater than the TIWC.

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

Acute Partial Mix Factor (PMFa): **.005** Chronic Partial Mix Factor (PMFc): **.037**

1. Determine IWC – Acute (IWCa):

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

[(4.5 MGD x 1.547) / ((3,210 cfs x .005) + (4.5 MGD x 1.547))] x 100 = **30.25%**

Is IWCa < 1%? ☐ **YES** ☒ **NO (YES - Acute Tests Required OR NO - Chronic Tests Required)**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

N/A

Type of Test for Permit Renewal: **Chronic**

2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = N/A

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

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

[(4.5 MGD x 1.547) / ((3,210 cfs x .037) + (4.5 MGD x 1.547))] x 100 = **5.5%**

3. Determine Dilution Series

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

Dilution Series = 100%, 60%, 30%, 6%, and 3%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

If WET limits will be established, identify the species and the limit values for the permit (TU).

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A

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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	938	1407	XXX	25	37.5	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	1126	1689	XXX	30	45	60	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) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	300	XXX	XXX	8.0	XXX	XXX	1/month	Calculation
Ammonia	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Phosphorus	37.5	XXX	XXX	1.0	XXX	3	2/week	24-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Zinc	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Total Copper	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: Composite samples may be taken before or after disinfection; grab samples shall be taken after disinfection.

Other Comments: None

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 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/discharge	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	See Permit (1)	See Permit (1)
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	See Permit (1)	See Permit (1)
TRC	XXX	XXX	XXX	0.44	XXX	1.43	See Permit (1)	See Permit (1)
CBOD5	XXX	XXX	XXX	20	30	40	See Permit (1)	See Permit (1)
TSS	XXX	XXX	XXX	30	45	60	See Permit (1)	See Permit (1)
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	See Permit (1)	See Permit (1)
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	See Permit (1)	See Permit (1)
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	See Permit (1)	See Permit (1)
Total Nitrogen	XXX	XXX	XXX	8.0	XXX	XXX	See Permit (1)	See Permit (1)
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	8.0	XXX	16	See Permit (1)	See Permit (1)
Ammonia May 1 - Oct 31	XXX	XXX	XXX	5.0	XXX	10	See Permit (1)	See Permit (1)
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	3	See Permit (1)	See Permit (1)

(1) If the streamflow to wasteflow ratio during a discharge event from Outfall 002 falls below 4 to 1, then a sample must be analyzed for each discharge event to determine compliance with the permit limitations for Outfall 002. A discharge from Outfall 002 shall be considered a single event as long as four hours has not elapsed from the end of a discharge to the beginning of the next on any calendar day. If four hours has passed between discharges, then it will be considered a new discharge event and must be sampled separately.

If the streamflow to wasteflow ratio during a discharge event from Outfall 002 is 4 to 1 or greater, then no sampling is required and the quality of the discharge will be assumed to be equivalent to the nearest required analysis of Outfall 001.

Sampling each single discharge event shall consist of one grab sample of every four-hour period that a discharge occurs during any calendar day. Grab samples taken on any calendar day can then be composited for one analysis. A separate analysis will be required for each calendar day that a discharge would occur.

Compliance Sampling Location: Composite samples may be taken before or after disinfection; grab samples shall be taken after disinfection.

Other Comments: None

Proposed 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.

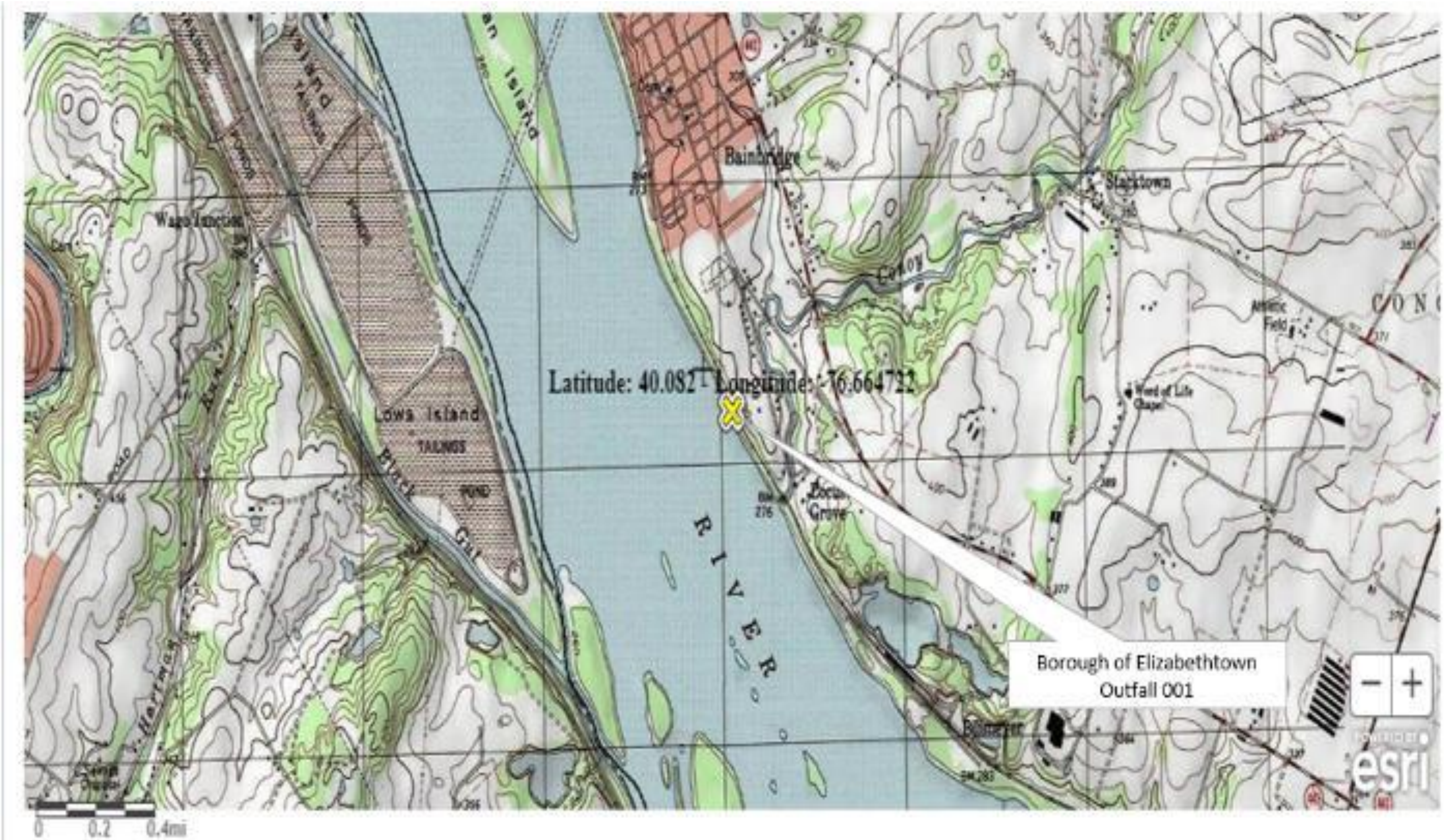
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

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	XXX	109,500	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	XXX	13,688	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: At discharge from facility

Other Comments: None

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: SOP No. BCW-PMT-033
☐	Other:



Borough of Elizabethtown PA0023108 Outfall 001

Region ID:	PA
Workspace ID:	PA20211213160914128000
Clicked Point (Latitude, Longitude):	40.07778, -76.66706
Time:	2021-12-13 11:09:49 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	25500	square miles
BSLOPD	Mean basin slope measured in degrees	8.1978	degrees
ROCKDEP	Depth to rock	4.5	feet
URBAN	Percentage of basin with urban development	2.7662	percent
PRECIP	Mean Annual Precipitation	40	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.76	miles per square mile
CARBON	Percentage of area of carbonate rock	6.26	percent
ELEV	Mean Basin Elevation	1343	feet
GLACIATED	Percentage of basin area that was historically covered by glaciers	46.2447	percent
FOREST	Percentage of area covered by forest	68.6192	percent

Low-Flow Statistics Parameters [2.1 Percent (527 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25500	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	8.1978	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	2.7662	percent	0	89

Low-Flow Statistics Parameters [43.3 Percent (11100 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25500	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	1.76	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	6.26	percent	0	99

Low-Flow Statistics Parameters [6.3 Percent (1610 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25500	square miles	2.33	1720
ELEV	Mean Basin Elevation	1343	feet	898	2700
PRECIP	Mean Annual Precipitation	40	inches	38.7	47.9

Low-Flow Statistics Parameters [48.1 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25500	square miles	4.84	982
PRECIP	Mean Annual Precipitation	40	inches	33.1	47.1
GLACIATED	Percent of Glaciation	46.2447	percent	0	100
FOREST	Percent Forest	68.6192	percent	41	100

Low-Flow Statistics Disclaimers [2.1 Percent (527 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [2.1 Percent (527 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	9180	ft^3/s
30 Day 2 Year Low Flow	10200	ft^3/s
7 Day 10 Year Low Flow	7180	ft^3/s
30 Day 10 Year Low Flow	7550	ft^3/s
90 Day 10 Year Low Flow	8030	ft^3/s

Low-Flow Statistics Disclaimers [43.3 Percent (11100 square miles) 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 [43.3 Percent (11100 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	5810	ft^3/s
30 Day 2 Year Low Flow	6870	ft^3/s
7 Day 10 Year Low Flow	4330	ft^3/s
30 Day 10 Year Low Flow	5110	ft^3/s
90 Day 10 Year Low Flow	6360	ft^3/s

Low-Flow Statistics Disclaimers [6.3 Percent (1610 square miles) Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [6.3 Percent (1610 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2380	ft^3/s
30 Day 2 Year Low Flow	2940	ft^3/s
7 Day 10 Year Low Flow	1430	ft^3/s
30 Day 10 Year Low Flow	1780	ft^3/s
90 Day 10 Year Low Flow	2450	ft^3/s

Low-Flow Statistics Disclaimers [48.1 Percent (12300 square miles) Low Flow Region 5]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [48.1 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3530	ft^3/s
30 Day 2 Year Low Flow	4450	ft^3/s
7 Day 10 Year Low Flow	2280	ft^3/s
30 Day 10 Year Low Flow	2970	ft^3/s
90 Day 10 Year Low Flow	3830	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	4560	ft^3/s
30 Day 2 Year Low Flow	5510	ft^3/s
7 Day 10 Year Low Flow	3210	ft^3/s
30 Day 10 Year Low Flow	3910	ft^3/s
90 Day 10 Year Low Flow	4920	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

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Borough of Elizabethtown PA0023108 Downstream Pt. RMI = 31

Region ID:	PA
Workspace ID:	PA20211213164337819000
Clicked Point (Latitude, Longitude):	40.05303, -76.54484
Time:	2021-12-13 11:44:11 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	25900	square miles
BSLOPD	Mean basin slope measured in degrees	8.1637	degrees
ROCKDEP	Depth to rock	4.5	feet
URBAN	Percentage of basin with urban development	2.8655	percent
PRECIP	Mean Annual Precipitation	40	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.76	miles per square mile
CARBON	Percentage of area of carbonate rock	6.45	percent
ELEV	Mean Basin Elevation	1334	feet
GLACIATED	Percentage of basin area that was historically covered by glaciers	45.6689	percent
FOREST	Percentage of area covered by forest	68.0806	percent

Low-Flow Statistics Parameters [3.3 Percent (847 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25900	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	8.1637	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	2.8655	percent	0	89

Low-Flow Statistics Parameters [42.8 Percent (11100 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25900	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	1.76	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	6.45	percent	0	99

Low-Flow Statistics Parameters [6.2 Percent (1610 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25900	square miles	2.33	1720
ELEV	Mean Basin Elevation	1334	feet	898	2700
PRECIP	Mean Annual Precipitation	40	inches	38.7	47.9

Low-Flow Statistics Parameters [47.5 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25900	square miles	4.84	982
PRECIP	Mean Annual Precipitation	40	inches	33.1	47.1
GLACIATED	Percent of Glaciation	45.6689	percent	0	100
FOREST	Percent Forest	68.0806	percent	41	100

Low-Flow Statistics Disclaimers [3.3 Percent (847 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [3.3 Percent (847 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	9290	ft^3/s
30 Day 2 Year Low Flow	10300	ft^3/s
7 Day 10 Year Low Flow	7270	ft^3/s
30 Day 10 Year Low Flow	7650	ft^3/s
90 Day 10 Year Low Flow	8150	ft^3/s

Low-Flow Statistics Disclaimers [42.8 Percent (11100 square miles) 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 [42.8 Percent (11100 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	5930	ft^3/s
30 Day 2 Year Low Flow	7000	ft^3/s
7 Day 10 Year Low Flow	4420	ft^3/s
30 Day 10 Year Low Flow	5210	ft^3/s
90 Day 10 Year Low Flow	6480	ft^3/s

Low-Flow Statistics Disclaimers [6.2 Percent (1610 square miles) Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [6.2 Percent (1610 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2410	ft^3/s
30 Day 2 Year Low Flow	2970	ft^3/s
7 Day 10 Year Low Flow	1450	ft^3/s
30 Day 10 Year Low Flow	1800	ft^3/s
90 Day 10 Year Low Flow	2470	ft^3/s

Low-Flow Statistics Disclaimers [47.5 Percent (12300 square miles) Low Flow Region 5]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [47.5 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3540	ft^3/s
30 Day 2 Year Low Flow	4470	ft^3/s
7 Day 10 Year Low Flow	2280	ft^3/s
30 Day 10 Year Low Flow	2980	ft^3/s
90 Day 10 Year Low Flow	3850	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	4670	ft^3/s
30 Day 2 Year Low Flow	5640	ft^3/s
7 Day 10 Year Low Flow	3300	ft^3/s
30 Day 10 Year Low Flow	4010	ft^3/s
90 Day 10 Year Low Flow	5020	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

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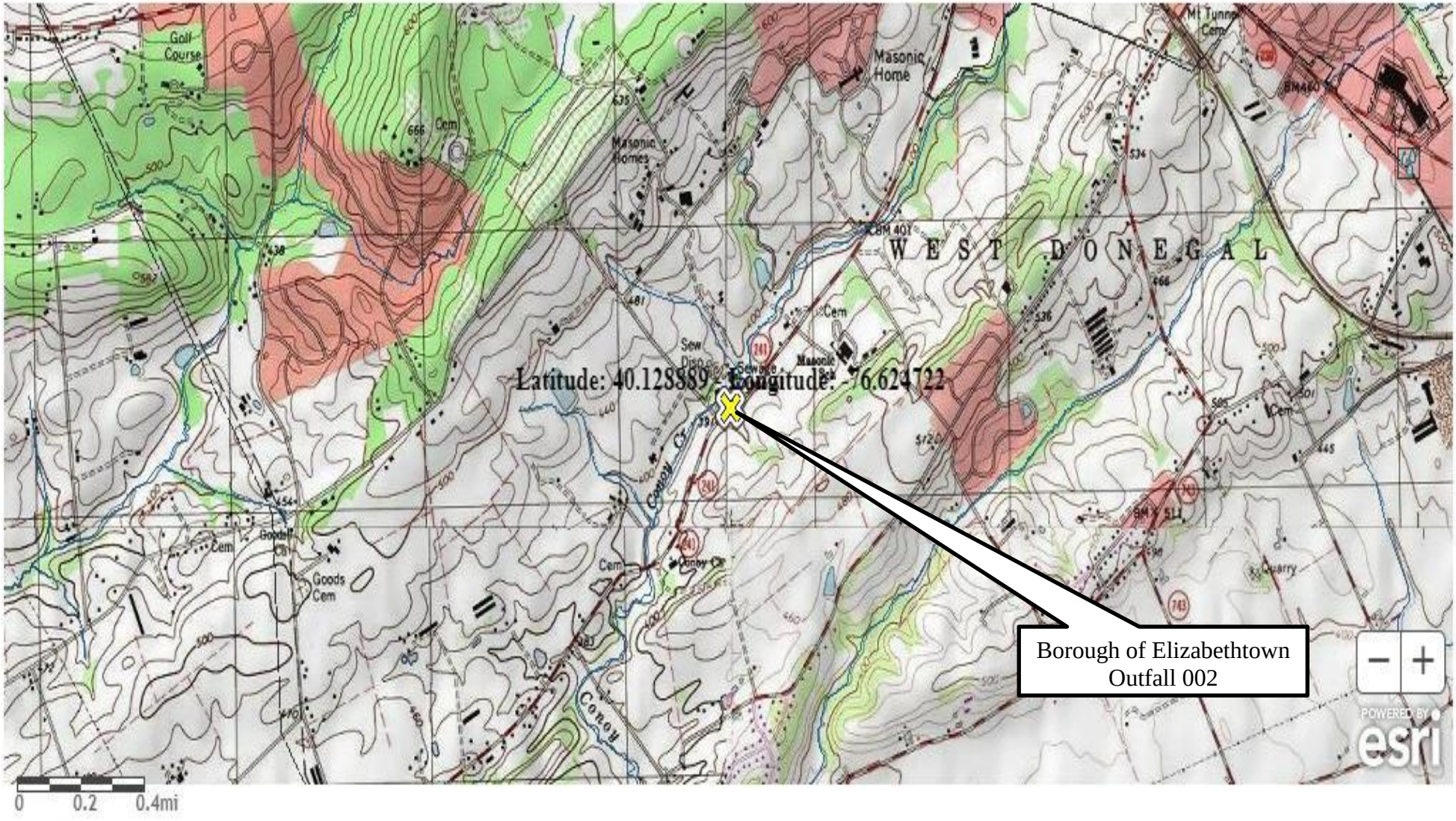
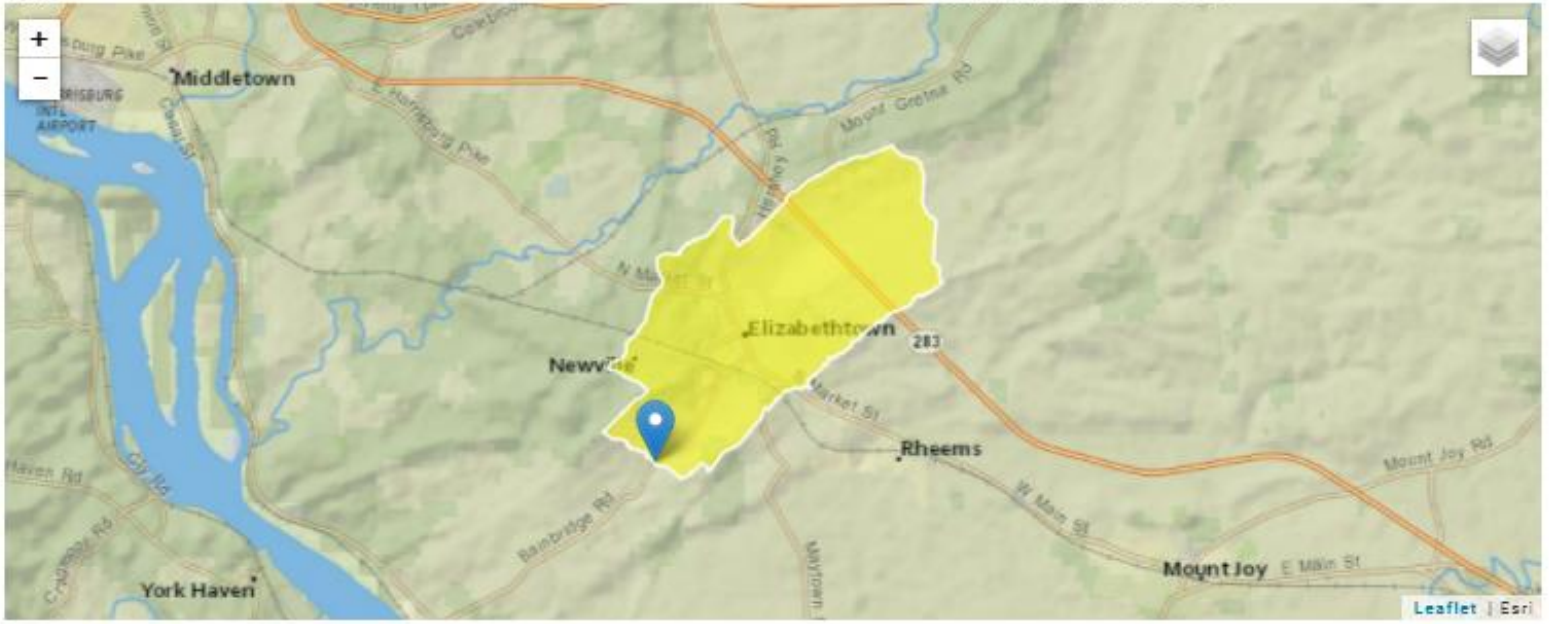


Borough of Elizabethtown PA0023108 Outfall 002

Region ID:	PA
Workspace ID:	PA20211213182536167000
Clicked Point (Latitude, Longitude):	40.12913, -76.62509
Time:	2021-12-13 13:25:56 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	7.9	square miles
BSLOPD	Mean basin slope measured in degrees	3.0958	degrees
ROCKDEP	Depth to rock	4	feet
URBAN	Percentage of basin with urban development	26.1561	percent

Low-Flow Statistics Parameters [99.9 Percent (7.9 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	7.9	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	3.0958	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4	feet	4.13	5.21
URBAN	Percent Urban	26.1561	percent	0	89

Low-Flow Statistics Disclaimers [99.9 Percent (7.9 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [99.9 Percent (7.9 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.713	ft^3/s
30 Day 2 Year Low Flow	1.12	ft^3/s
7 Day 10 Year Low Flow	0.271	ft^3/s
30 Day 10 Year Low Flow	0.445	ft^3/s
90 Day 10 Year Low Flow	0.923	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Borough of Elizabethtown PA0023108 Outfall 002 Downstream Pt.

Region ID:	PA
Workspace ID:	PA20211221135056323000
Clicked Point (Latitude, Longitude):	40.11251, -76.62681
Time:	2021-12-21 08:51:16 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	9.63	square miles
BSLOPD	Mean basin slope measured in degrees	3.1194	degrees
ROCKDEP	Depth to rock	4.2	feet
URBAN	Percentage of basin with urban development	22.0547	percent

Low-Flow Statistics Parameters [99.9 Percent (9.63 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	9.63	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	3.1194	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.2	feet	4.13	5.21
URBAN	Percent Urban	22.0547	percent	0	89

Low-Flow Statistics Flow Report [99.9 Percent (9.63 square miles) Low Flow Region 1]

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

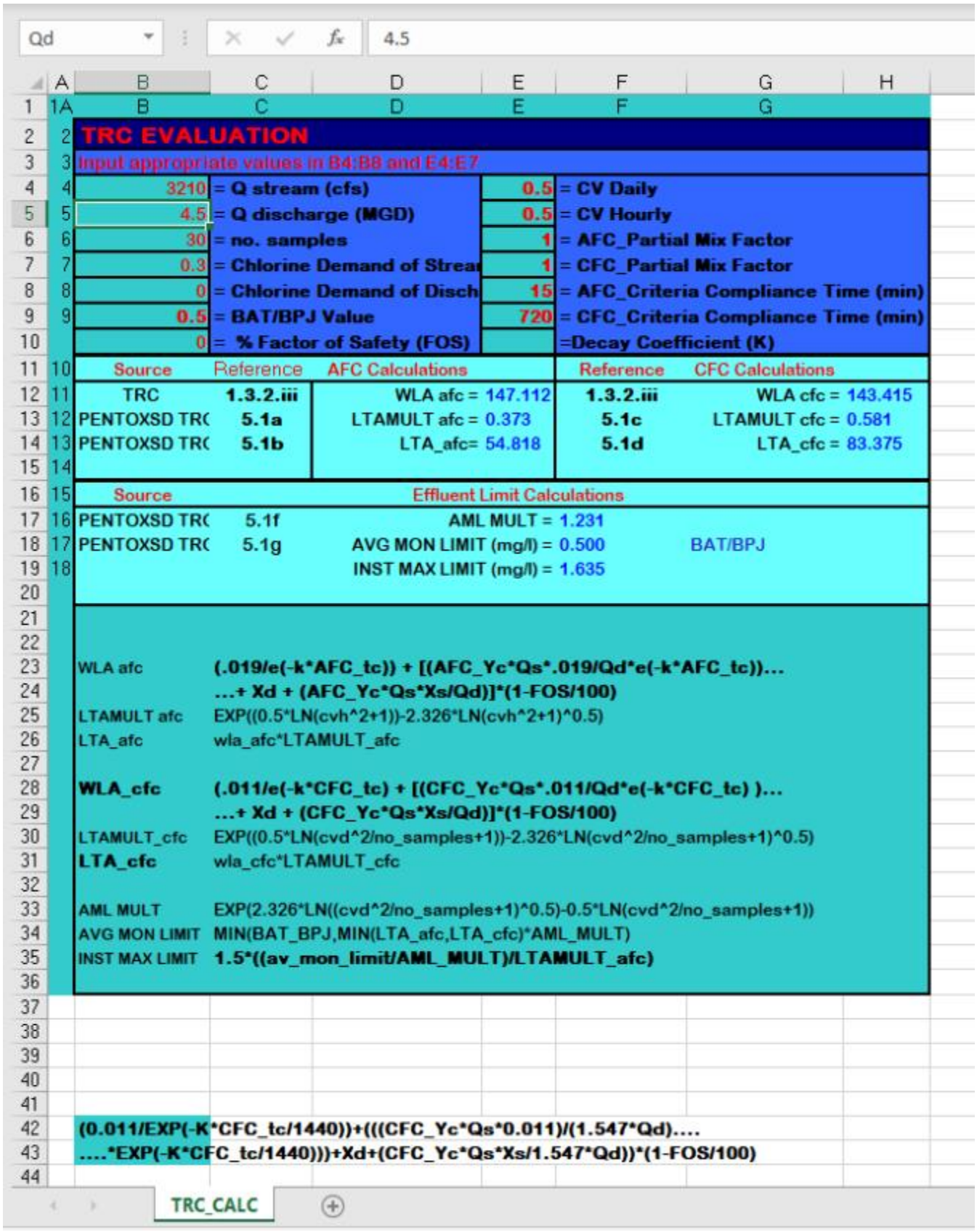
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.01	ft^3/s	46	46
30 Day 2 Year Low Flow	1.54	ft^3/s	38	38
7 Day 10 Year Low Flow	0.401	ft^3/s	51	51
30 Day 10 Year Low Flow	0.633	ft^3/s	46	46
90 Day 10 Year Low Flow	1.27	ft^3/s	41	41

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Outfall 001 TRC Evaluation:



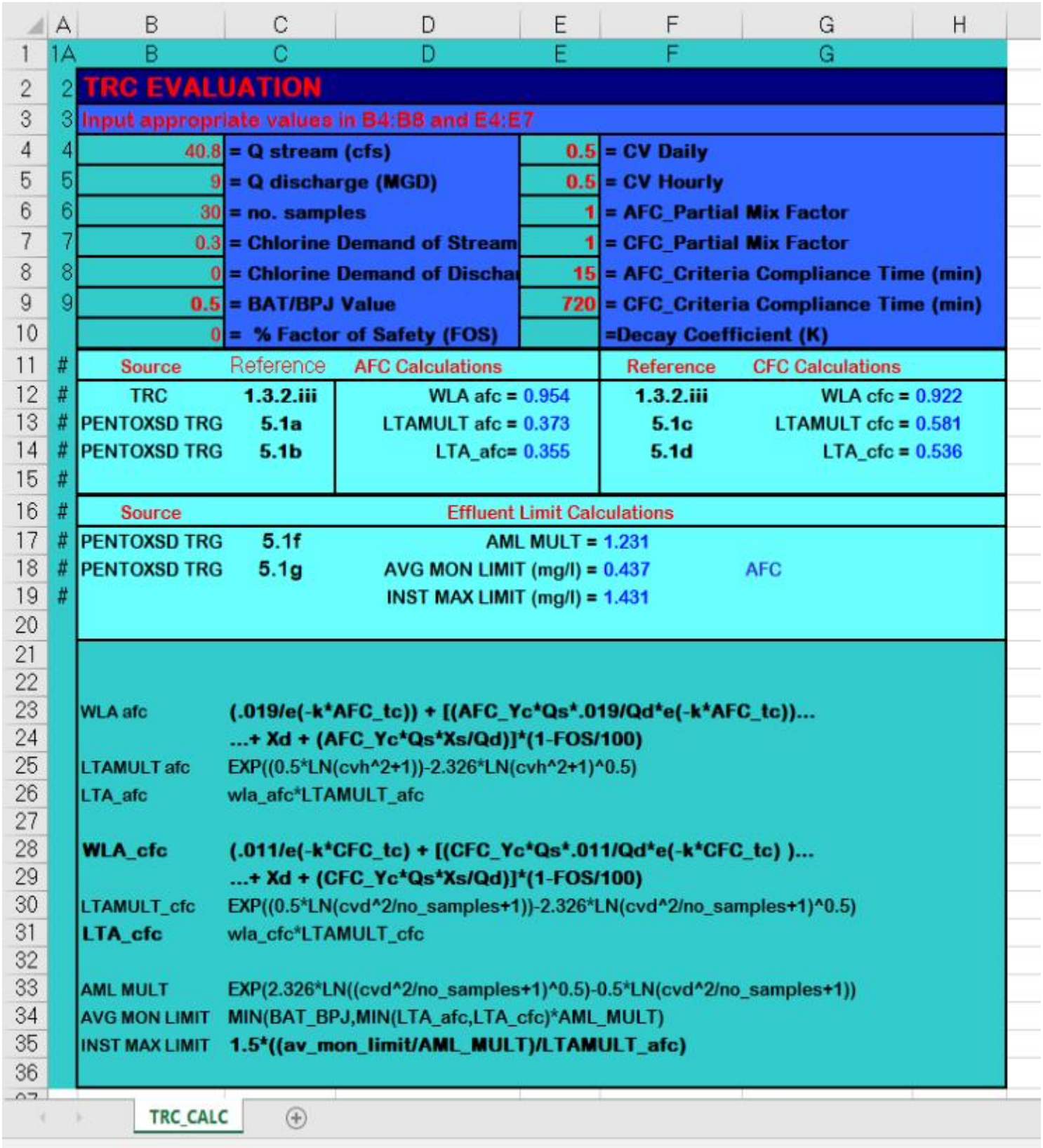
TRC EVALUATION						
Input appropriate values in B4:B8 and E4:E7						
3210	= Q stream (cfs)		0.5	= CV Daily		
4.5	= Q discharge (MGD)		0.5	= CV Hourly		
30	= no. samples		1	= AFC_Partial Mix Factor		
0.3	= Chlorine Demand of Strea		1	= CFC_Partial Mix Factor		
0	= Chlorine Demand of Disch		15	= AFC_Criteria Compliance Time (min)		
0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)		
0	= % Factor of Safety (FOS)			=Decay Coefficient (K)		
Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc = 147.112		1.3.2.iii	WLA cfc = 143.415	
PENTOXSD TRC	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581	
PENTOXSD TRC	5.1b	LTA_afc= 54.818		5.1d	LTA_cfc = 83.375	
Source		Effluent Limit Calculations				
PENTOXSD TRC	5.1f	AML MULT = 1.231				
PENTOXSD TRC	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ		
		INST MAX LIMIT (mg/l) = 1.635				

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)

(0.011/EXP(-K*CFC_tc/1440))+(((CFC_Yc*Qs*0.011)/(1.547*Qd)....
....*EXP(-K*CFC_tc/1440)))+Xd+(CFC_Yc*Qs*Xs/1.547*Qd))*(1-FOS/100)

Permit No. PA0023108

Outfall 002 TRC Evaluation:



		TRC EVALUATION				
		Input appropriate values in B4:B8 and E4:E7				
4	40.8	= Q stream (cfs)	0.5	= CV Daily		
5	9	= Q discharge (MGD)	0.5	= CV Hourly		
6	30	= no. samples	1	= AFC_Partial Mix Factor		
7	0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor		
8	0	= Chlorine Demand of Discha	15	= AFC_Criteria Compliance Time (min)		
9	0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)		
10	0	= % Factor of Safety (FOS)		=Decay Coefficient (K)		
#	Source	Reference	AFC Calculations	Reference	CFC Calculations	
#	TRC	1.3.2.iii	WLA afc = 0.954	1.3.2.iii	WLA cfc = 0.922	
#	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581	
#	PENTOXSD TRG	5.1b	LTA_afc= 0.355	5.1d	LTA_cfc = 0.536	
#						
#	Source		Effluent Limit Calculations			
#	PENTOXSD TRG	5.1f	AML MULT = 1.231			
#	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.437	AFC		
#			INST MAX LIMIT (mg/l) = 1.431			

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)

TRC_CALC

Permit No. PA0023108

Outfall 001 WET Summary:

WET Summary and Evaluation

Facility Name	Elizabethtown STP
Permit No.	PA0023108
Design Flow (MGD)	4.5
Q_{7-10} Flow (cfs)	3210
PMF_a	0.005
PMF_c	0.037

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	8/14/18	8/27/19	6/16/20	9/7/21
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	8/14/18	8/27/19	6/16/20	9/7/21
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	8/14/18	8/26/19	6/15/20	9/26/21
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	8/14/18	8/26/19	6/15/20	9/26/21
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**6** % Effluent
Dilution Series	**3, 6, 30, 60, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

Permit No. PA0023108

Outfall 001 WQM 7.0 Results:

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
07K	6685	SUSQUEHANNA RIVER	37.800	249.00	25500.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	3210.00	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
Elizabethtown	PA0023108	4.5000	4.5000	4.5000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0023108

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
07K	6685	SUSQUEHANNA RIVER	31.000	234.00	25900.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	3300.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0023108

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

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												
37.800	3210.00	0.00	3210.00	6.9615	0.00042	.702	2179.12	3105.76	2.10	0.198	20.01	7.00
Q1-10 Flow												
37.800	2054.40	0.00	2054.40	6.9615	0.00042	NA	NA	NA	1.64	0.253	20.02	7.00
Q30-10 Flow												
37.800	4365.60	0.00	4365.60	6.9615	0.00042	NA	NA	NA	2.50	0.166	20.01	7.00

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Permit No. PA0023108

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	5		

Permit No. PA0023108

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

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
37.800	Elizabethtown	16.74	50	16.74	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
37.800	Elizabethtown	1.89	25	1.89	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
37.80	Elizabethtown	25	25	25	25	5	5	0	0

Permit No. PA0023108

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
37.800	4.500	20.011	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2179.122	0.702	3105.759	2.104
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.05	0.034	0.05	0.701
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.236	4.101	Tsivoglou	5
Reach Travel Time (days)			
0.198			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.020	2.05	0.05	8.24
0.040	2.05	0.05	8.24
0.059	2.05	0.05	8.24
0.079	2.04	0.05	8.24
0.099	2.04	0.05	8.24
0.119	2.04	0.05	8.24
0.138	2.04	0.05	8.24
0.158	2.04	0.05	8.24
0.178	2.04	0.05	8.24
0.198	2.04	0.05	8.24

Permit No. PA0023108

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

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)
37.800	Elizabethtown	PA0023108	4.500	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

Permit No. PA0023108

Outfall 002 WQM 7.0 Results:

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
07G	8278	CONOY CREEK	6.000	388.00	7.90	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	0.100	40.80	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
Elizabethtown	A0023108	9.0000	9.0000	9.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0023108

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
07G	8278	CONOY CREEK	4.330	357.00	9.63	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	0.100	40.80	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0023108

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07G	8278	CONOY 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												
6.000	40.80	0.00	40.80	13.923	0.00352	.864	52.01	60.21	1.22	0.084	21.27	7.00
Q1-10 Flow												
6.000	26.11	0.00	26.11	13.923	0.00352	NA	NA	NA	1.02	0.100	21.74	7.00
Q30-10 Flow												
6.000	55.49	0.00	55.49	13.923	0.00352	NA	NA	NA	1.39	0.073	21.00	7.00

Permit No. PA0023108

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	5		

Permit No. PA0023108

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07G	8278	CONOY 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
6.000	Elizabethtown	14.51	41.72	14.51	41.72	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
6.000	Elizabethtown	1.77	8.82	1.77	8.82	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
6.00	Elizabethtown	25	25	8.82	8.82	5	5	0	0

Permit No. PA0023108

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07G	8278	CONOY CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
6.000	9.000	21.272	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
52.013	0.864	60.211	1.218
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.85	1.199	2.24	0.772
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.418	20.585	Tsivoglou	5
Reach Travel Time (days)			
0.084			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.008	7.77	2.23	7.48
0.017	7.69	2.21	7.54
0.025	7.60	2.20	7.59
0.034	7.52	2.19	7.64
0.042	7.44	2.17	7.68
0.050	7.37	2.16	7.71
0.059	7.29	2.14	7.74
0.067	7.21	2.13	7.77
0.075	7.13	2.12	7.79
0.084	7.06	2.10	7.81

Permit No. PA0023108

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07G	8278	CONOY 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)
6.000	Elizabethtown	A0023108	9.000	CBOD5	25		
				NH3-N	8.82	17.64	
				Dissolved Oxygen			5

Permit No. PA0023108

Outfall 001 TMS Results:

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Borough of Elizabethtown** NPDES Permit No.: **PA0023108** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Sewage Effluent**

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
4.5	276	8.29						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		798									
	Chloride (PWS)	mg/L		248									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		72.9									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		47									
	Total Antimony	µg/L		0.5									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		30									
	Total Beryllium	µg/L	<	0.4									
	Total Boron	µg/L		412									
	Total Cadmium	µg/L	<	0.08									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L		14									
	Free Cyanide	µg/L		2									
	Total Cyanide	µg/L		26									
	Dissolved Iron	µg/L		18									
	Total Iron	µg/L		40									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		18									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		1									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	0.05									
	Total Thallium	µg/L	<	0.4									
	Total Zinc	µg/L		43									
	Total Molybdenum	µg/L		6									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.9									

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Group 3	Carbon Tetrachloride	µg/L	<	0.5										
	Chlorobenzene	µg/L	<	0.5										
	Chlorodibromomethane	µg/L	<	5.6										
	Chloroethane	µg/L	<	0.5										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5										
	Chloroform	µg/L		12.3										
	Dichlorobromomethane	µg/L		12.3										
	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	<	0.9										
	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	<	0.0892										
	2,4-Dichlorophenol	µg/L	<	0.0804										
	2,4-Dimethylphenol	µg/L	<	0.428										
	4,6-Dinitro-o-Cresol	µg/L	<	0.116										
	2,4-Dinitrophenol	µg/L	<	2.94										
	2-Nitrophenol	µg/L	<	0.05										
	4-Nitrophenol	µg/L	<	0.0402										
	p-Chloro-m-Cresol	µg/L	<	0.0971										
	Pentachlorophenol	µg/L	<	0.102										
	Phenol	µg/L	<	0.0441										
	2,4,6-Trichlorophenol	µg/L	<	0.373										
Group 5	Acenaphthene	µg/L	<	0.101										
	Acenaphthylene	µg/L	<	0.0912										
	Anthracene	µg/L	<	0.098										
	Benzidine	µg/L	<	4.9										
	Benzo(a)Anthracene	µg/L	<	0.0608										
	Benzo(a)Pyrene	µg/L	<	0.0706										
	3,4-Benzofluoranthene	µg/L	<	0.0411										
	Benzo(ghi)Perylene	µg/L	<	0.0804										
	Benzo(k)Fluoranthene	µg/L												
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.0833										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.0765										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.0873										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.373										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.106										
	Butyl Benzyl Phthalate	µg/L	<	0.0647										
	2-Chloronaphthalene	µg/L	<	0.0892										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.0931										
	Chrysene	µg/L	<	0.0716										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.052										
	1,2-Dichlorobenzene	µg/L	<	0.05										
	1,3-Dichlorobenzene	µg/L	<	0.05										
	1,4-Dichlorobenzene	µg/L	<	0.05										
	3,3-Dichlorobenzidine	µg/L	<	0.136										
	Diethyl Phthalate	µg/L	<	0.115										
	Dimethyl Phthalate	µg/L	<	0.0892										
	Di-n-Butyl Phthalate	µg/L	<	0.0833										
	2,4-Dinitrotoluene	µg/L	<	0.0824										

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	2,6-Dinitrotoluene	µg/L		
	Di-n-Octyl Phthalate	µg/L	<	0.0745
	1,2-Diphenylhydrazine	µg/L	<	0.116
	Fluoranthene	µg/L	<	0.0873
	Fluorene	µg/L	<	0.106
	Hexachlorobenzene	µg/L	<	0.0863
	Hexachlorobutadiene	µg/L	<	0.0804
	Hexachlorocyclopentadiene	µg/L	<	0.0441
	Hexachloroethane	µg/L	<	0.0676
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.0569
	Isophorone	µg/L	<	0.0961
	Naphthalene	µg/L	<	0.0627
	Nitrobenzene	µg/L	<	0.0608
	n-Nitrosodimethylamine	µg/L	<	0.0647
	n-Nitrosodi-n-Propylamine	µg/L	<	0.0902
	n-Nitrosodiphenylamine	µg/L	<	0.206
	Phenanthrene	µg/L	<	0.0971
	Pyrene	µg/L	<	0.0902
	1,2,4-Trichlorobenzene	µg/L	<	0.0912
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 1.3, March 2021

Stream / Surface Water Information

Borough of Elizabethtown, NPDES Permit No. PA0023108, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Susquehanna River

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	006685	37.8	249	25500			Yes
End of Reach 1	006685	31	234	25900			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	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	37.8	0.1	3210									117	8.376		
End of Reach 1	31	0.1	3300									117	8.376		

Q_h

Location	RMI	LFY (cfs/mi^2)	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	37.8														
End of Reach 1	31														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Borough of Elizabethtown, NPDES Permit No. PA0023108, Outfall 001

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.005 Analysis Hardness (mg/l): 163.34 Analysis pH: 8.35

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	2,574	
Total Antimony	0	0		0	1,100	1,100	3,775	
Total Arsenic	0	0		0	340	340	1,167	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	72,061	
Total Boron	0	0		0	8,100	8,100	27,795	
Total Cadmium	0	0		0	3.244	3.51	12.1	Chem Translator of 0.923 applied
Total Chromium (III)	0	0		0	851.547	2,695	9,247	Chem Translator of 0.316 applied
Total Cobalt	0	0		0	95	95.0	326	
Total Copper	0	0		0	21.337	22.2	76.3	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	75.5	
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	109.703	152	523	Chem Translator of 0.72 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	5.65	Chem Translator of 0.85 applied
Total Nickel	0	0		0	709.140	711	2,438	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	7.480	8.8	30.2	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	223	
Total Zinc	0	0		0	177.582	182	623	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	10.3	
Acrylonitrile	0	0		0	650	650	2,230	

Benzene	0	0		0	640	640	2,196	
Bromoform	0	0		0	1,800	1,800	6,177	
Carbon Tetrachloride	0	0		0	2,800	2,800	9,608	
Chlorobenzene	0	0		0	1,200	1,200	4,118	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	61,766	
Chloroform	0	0		0	1,900	1,900	6,520	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	51,472	
1,1-Dichloroethylene	0	0		0	7,500	7,500	25,736	
1,2-Dichloropropane	0	0		0	11,000	11,000	37,746	
1,3-Dichloropropylene	0	0		0	310	310	1,064	
Ethylbenzene	0	0		0	2,900	2,900	9,951	
Methyl Bromide	0	0		0	550	550	1,887	
Methyl Chloride	0	0		0	28,000	28,000	96,081	
Methylene Chloride	0	0		0	12,000	12,000	41,177	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	3,431	
Tetrachloroethylene	0	0		0	700	700	2,402	
Toluene	0	0		0	1,700	1,700	5,833	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	23,334	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	10,294	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	11,667	
Trichloroethylene	0	0		0	2,300	2,300	7,892	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,922	
2,4-Dichlorophenol	0	0		0	1,700	1,700	5,833	
2,4-Dimethylphenol	0	0		0	660	660	2,265	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	275	
2,4-Dinitrophenol	0	0		0	660	660	2,265	
2-Nitrophenol	0	0		0	8,000	8,000	27,452	
4-Nitrophenol	0	0		0	2,300	2,300	7,892	
p-Chloro-m-Cresol	0	0		0	160	160	549	
Pentachlorophenol	0	0		0	33.848	33.8	116	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,578	
Acenaphthene	0	0		0	83	83.0	285	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	1,029	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.72	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	102,944	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	15,442	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	926	
Butyl Benzyl Phthalate	0	0		0	140	140	480	
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	2,814	
1,3-Dichlorobenzene	0	0		0	350	350	1,201	
1,4-Dichlorobenzene	0	0		0	730	730	2,505	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	13,726	
Dimethyl Phthalate	0	0		0	2,500	2,500	8,579	
Di-n-Butyl Phthalate	0	0		0	110	110	377	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	5,490	
1,2-Diphenylhydrazine	0	0		0	15	15.0	51.5	
Fluoranthene	0	0		0	200	200	686	
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	34.3	
Hexachlorocyclopentadiene	0	0		0	5	5.0	17.2	
Hexachloroethane	0	0		0	60	60.0	206	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	34,315	
Naphthalene	0	0		0	140	140	480	
Nitrobenzene	0	0		0	4,000	4,000	13,726	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	58,335	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	1,029	
Phenanthrene	0	0		0	5	5.0	17.2	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	446	

☑ *CFC* CCT (min): 720 PMF: 0.037 Analysis Hardness (mg/l): 125.91 Analysis pH: 8.37

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	220	220	3,926	
Total Arsenic	0	0		0	150	150	2,677	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	73,167	
Total Boron	0	0		0	1,600	1,600	28,553	
Total Cadmium	0	0		0	0.289	0.32	5.73	Chem Translator of 0.899 applied
Total Chromium (III)	0	0		0	89.506	104	1,857	Chem Translator of 0.86 applied
Total Cobalt	0	0		0	19	19.0	339	
Total Copper	0	0		0	10.904	11.4	203	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	92.8	
Dissolved Iron	0	0		0	N/A	N/A	N/A	

Total Iron	0	0		0	1,500	1,500	693,161	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.231	4.27	76.1	Chem Translator of 0.757 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	16.2	Chem Translator of 0.85 applied
Total Nickel	0	0		0	63.199	63.4	1,131	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	89.0	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	232	
Total Zinc	0	0		0	143.606	146	2,599	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	53.5	
Acrylonitrile	0	0		0	130	130	2,320	
Benzene	0	0		0	130	130	2,320	
Bromoform	0	0		0	370	370	6,603	
Carbon Tetrachloride	0	0		0	560	560	9,994	
Chlorobenzene	0	0		0	240	240	4,283	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	62,460	
Chloroform	0	0		0	390	390	6,960	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	55,321	
1,1-Dichloroethylene	0	0		0	1,500	1,500	26,768	
1,2-Dichloropropane	0	0		0	2,200	2,200	39,260	
1,3-Dichloropropylene	0	0		0	61	61.0	1,089	
Ethylbenzene	0	0		0	580	580	10,350	
Methyl Bromide	0	0		0	110	110	1,963	
Methyl Chloride	0	0		0	5,500	5,500	98,151	
Methylene Chloride	0	0		0	2,400	2,400	42,829	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	3,748	
Tetrachloroethylene	0	0		0	140	140	2,498	
Toluene	0	0		0	330	330	5,889	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	24,984	
1,1,1-Trichloroethane	0	0		0	610	610	10,886	
1,1,2-Trichloroethane	0	0		0	680	680	12,135	
Trichloroethylene	0	0		0	450	450	8,031	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	1,963	
2,4-Dichlorophenol	0	0		0	340	340	6,068	
2,4-Dimethylphenol	0	0		0	130	130	2,320	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	286	
2,4-Dinitrophenol	0	0		0	130	130	2,320	
2-Nitrophenol	0	0		0	1,600	1,600	28,553	
4-Nitrophenol	0	0		0	470	470	8,387	
p-Chloro-m-Cresol	0	0		0	500	500	8,923	
Pentachlorophenol	0	0		0	25.968	26.0	463	

Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	1,624	
Acenaphthene	0	0		0	17	17.0	303	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	1,053	
Benzo(a)Anthracene	0	0		0	0.1	0.1	1.78	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	107,074	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	16,239	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	964	
Butyl Benzyl Phthalate	0	0		0	35	35.0	625	
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	2,855	
1,3-Dichlorobenzene	0	0		0	69	69.0	1,231	
1,4-Dichlorobenzene	0	0		0	150	150	2,677	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	14,276	
Dimethyl Phthalate	0	0		0	500	500	8,923	
Di-n-Butyl Phthalate	0	0		0	21	21.0	375	
2,4-Dinitrotoluene	0	0		0	320	320	5,711	
1,2-Diphenylhydrazine	0	0		0	3	3.0	53.5	
Fluoranthene	0	0		0	40	40.0	714	
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	35.7	
Hexachlorocyclopentadiene	0	0		0	1	1.0	17.8	
Hexachloroethane	0	0		0	12	12.0	214	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	37,476	
Naphthalene	0	0		0	43	43.0	767	
Nitrobenzene	0	0		0	810	810	14,455	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	60,675	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	1,053	
Phenanthrene	0	0		0	1	1.0	17.8	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	464	

☑ ***THH*** CCT (min): 720 PMF: 0.037 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream	Trib Conc	Fate	WQC	WQ Obj	WLA (ug/L)	Comments

Pollutants	Conc (µg/L)	CV	(µg/L)	Coef	(µg/L)	(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	99.9	
Total Arsenic	0	0		0	10	10.0	178	
Total Barium	0	0		0	2,400	2,400	42,829	
Total Boron	0	0		0	3,100	3,100	55,321	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	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	71.4	
Dissolved Iron	0	0		0	300	300	5,354	
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	17,846	
Total Mercury	0	0		0	0.050	0.05	0.89	
Total Nickel	0	0		0	610	610	10,886	
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	4.28	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	53.5	
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	1,785	
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	N/A	N/A	N/A	
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	589	
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	1,214	
Methyl Bromide	0	0		0	100	100.0	1,785	
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	1,017	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	1,785	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	178,456	
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	535	
2,4-Dichlorophenol	0	0		0	10	10.0	178	
2,4-Dimethylphenol	0	0		0	100	100.0	1,785	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	35.7	
2,4-Dinitrophenol	0	0		0	10	10.0	178	
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	71,382	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	1,249	
Anthracene	0	0		0	300	300	5,354	
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	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	3,569	
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	1.78	
2-Chloronaphthalene	0	0		0	800	800	14,276	
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	17,846	
1,3-Dichlorobenzene	0	0		0	7	7.0	125	
1,4-Dichlorobenzene	0	0		0	300	300	5,354	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	10,707	
Dimethyl Phthalate	0	0		0	2,000	2,000	35,691	
Di-n-Butyl Phthalate	0	0		0	20	20.0	357	
2,4-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	357	
Fluorene	0	0		0	50	50.0	892	
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	71.4	

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	607	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	178	
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	357	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	1.25	

☑ *CRL* CCT (min): 720 PMF: 0.051 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	
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	3.82	
Benzene	0	0		0	0.58	0.58	36.9	
Bromoform	0	0		0	7	7.0	445	
Carbon Tetrachloride	0	0		0	0.4	0.4	25.4	

Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	50.9	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	362	
Dichlorobromomethane	0	0		0	0.95	0.95	60.4	
1,2-Dichloroethane	0	0		0	9.9	9.9	630	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	57.2	
1,3-Dichloropropylene	0	0		0	0.27	0.27	17.2	
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	1,272	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	12.7	
Tetrachloroethylene	0	0		0	10	10.0	636	
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	35.0	
Trichloroethylene	0	0		0	0.6	0.6	38.2	
Vinyl Chloride	0	0		0	0.02	0.02	1.27	
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	1.91	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	95.4	
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	0.006	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.064	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.006	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.064	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	1.91	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	20.3	
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	7.63	

Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.006	
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	3.18	
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	3.18	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	1.91	
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	0.005	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.64	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	6.36	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.064	
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	0.045	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.32	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	210	
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 Copper	Report	Report	Report	Report	Report	µg/L	48.9	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	399	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 Aluminum	1,650	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	99.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	42,829	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	17,815	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	5.73	µg/L	Discharge Conc < TQL
Total Chromium (III)	1,857	µg/L	Discharge Conc < TQL
Total Cobalt	209	µg/L	Discharge Conc < TQL
Free Cyanide	48.4	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	5,354	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	693,161	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	76.1	µg/L	Discharge Conc < TQL
Total Manganese	17,846	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.89	µg/L	Discharge Conc < TQL
Total Nickel	1,131	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	89.0	µg/L	Discharge Conc < TQL
Total Silver	19.4	µg/L	Discharge Conc < TQL
Total Thallium	4.28	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	6.6	µg/L	Discharge Conc < TQL
Acrylonitrile	3.82	µg/L	Discharge Conc < TQL
Benzene	36.9	µg/L	Discharge Conc < TQL
Bromoform	445	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	25.4	µg/L	Discharge Conc < TQL
Chlorobenzene	1,785	µg/L	Discharge Conc < TQL
Chlorodibromomethane	50.9	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	39,590	µg/L	Discharge Conc < TQL
Chloroform	362	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	60.4	µg/L	Discharge Conc ≤ 25% WQBEL

1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	630	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	589	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	57.2	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	17.2	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	1,214	µg/L	Discharge Conc < TQL
Methyl Bromide	1,210	µg/L	Discharge Conc < TQL
Methyl Chloride	61,584	µg/L	Discharge Conc < TQL
Methylene Chloride	1,272	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	12.7	µg/L	Discharge Conc < TQL
Tetrachloroethylene	636	µg/L	Discharge Conc < TQL
Toluene	1,017	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	1,785	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	6,598	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	35.0	µg/L	Discharge Conc < TQL
Trichloroethylene	38.2	µg/L	Discharge Conc < TQL
Vinyl Chloride	1.27	µg/L	Discharge Conc < TQL
2-Chlorophenol	535	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	178	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	1,452	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	35.7	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	178	µg/L	Discharge Conc < TQL
2-Nitrophenol	17,595	µg/L	Discharge Conc < TQL
4-Nitrophenol	5,059	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	352	µg/L	Discharge Conc < TQL
Pentachlorophenol	1.91	µg/L	Discharge Conc < TQL
Phenol	71,382	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	95.4	µg/L	Discharge Conc < TQL
Acenaphthene	183	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	5,354	µg/L	Discharge Conc < TQL
Benzidine	0.006	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.064	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.006	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.064	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	1.91	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	3,569	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	20.3	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	594	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	1.78	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	14,276	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS

Chrysene	7.63	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.006	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,804	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	125	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	1,606	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	3.18	µg/L	Discharge Conc < TQL
Diethyl Phthalate	8,798	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	5,499	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	242	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	3.18	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	1.91	µg/L	Discharge Conc < TQL
Fluoranthene	357	µg/L	Discharge Conc < TQL
Fluorene	892	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.005	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.64	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	11.0	µg/L	Discharge Conc < TQL
Hexachloroethane	6.36	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.064	µg/L	Discharge Conc < TQL
Isophorone	607	µg/L	Discharge Conc < TQL
Naphthalene	308	µg/L	Discharge Conc < TQL
Nitrobenzene	178	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.045	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.32	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	210	µg/L	Discharge Conc < TQL
Phenanthrene	11.0	µg/L	Discharge Conc < TQL
Pyrene	357	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	1.25	µg/L	Discharge Conc < TQL

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Toxics Management Spreadsheet
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Discharge Information

Instructions | Discharge | Stream

Facility: **Borough of Elizabethtown** NPDES Permit No.: **PA0023108** Outfall No.: **002**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Sewage Effluent**

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
9	276	8.29						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		263									
	Chloride (PWS)	mg/L		81.8									
	Bromide	mg/L	<	0.066									
	Sulfate (PWS)	mg/L		24									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		15									
	Total Antimony	µg/L		0.165									
	Total Arsenic	µg/L	<	0.33									
	Total Barium	µg/L		9.9									
	Total Beryllium	µg/L	<	0.132									
	Total Boron	µg/L		136									
	Total Cadmium	µg/L	<	0.026									
	Total Chromium (III)	µg/L	<	0.33									
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L	<	0.33									
	Total Copper	µg/L		4.62									
	Free Cyanide	µg/L		0.66									
	Total Cyanide	µg/L		8.58									
	Dissolved Iron	µg/L		5.9									
	Total Iron	µg/L		13.2									
	Total Lead	µg/L	<	0.33									
	Total Manganese	µg/L		5.9									
	Total Mercury	µg/L	<	0.066									
	Total Nickel	µg/L		0.33									
	Total Phenols (Phenolics) (PWS)	µg/L	<	1.65									
	Total Selenium	µg/L	<	0.66									
	Total Silver	µg/L	<	0.017									
	Total Thallium	µg/L	<	0.13									
	Total Zinc	µg/L		14.2									
	Total Molybdenum	µg/L		2									
	Acrolein	µg/L	<	0.33									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.16									
	Benzene	µg/L	<	0.16									
	Bromoform	µg/L	<	0.3									

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Group 3	Carbon Tetrachloride	µg/L	<	0.16										
	Chlorobenzene	µg/L	<	0.16										
	Chlorodibromomethane	µg/L	<	1.8										
	Chloroethane	µg/L	<	0.16										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.16										
	Chloroform	µg/L		4										
	Dichlorobromomethane	µg/L		4										
	1,1-Dichloroethane	µg/L	<	0.16										
	1,2-Dichloroethane	µg/L	<	0.16										
	1,1-Dichloroethylene	µg/L	<	0.16										
	1,2-Dichloropropane	µg/L	<	0.16										
	1,3-Dichloropropylene	µg/L	<	0.16										
	1,4-Dioxane	µg/L	<	0.3										
	Ethylbenzene	µg/L	<	0.16										
	Methyl Bromide	µg/L	<	0.16										
	Methyl Chloride	µg/L	<	0.16										
	Methylene Chloride	µg/L	<	0.16										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.16										
	Tetrachloroethylene	µg/L	<	0.16										
	Toluene	µg/L	<	0.16										
	1,2-trans-Dichloroethylene	µg/L	<	0.16										
	1,1,1-Trichloroethane	µg/L	<	0.16										
	1,1,2-Trichloroethane	µg/L	<	0.16										
	Trichloroethylene	µg/L	<	0.16										
	Vinyl Chloride	µg/L	<	0.16										
Group 4	2-Chlorophenol	µg/L	<	0.03										
	2,4-Dichlorophenol	µg/L	<	0.03										
	2,4-Dimethylphenol	µg/L	<	0.14										
	4,6-Dinitro-o-Cresol	µg/L	<	0.04										
	2,4-Dinitrophenol	µg/L	<	0.97										
	2-Nitrophenol	µg/L	<	0.016										
	4-Nitrophenol	µg/L	<	0.013										
	p-Chloro-m-Cresol	µg/L	<	0.032										
	Pentachlorophenol	µg/L	<	0.034										
	Phenol	µg/L	<	0.015										
	2,4,6-Trichlorophenol	µg/L	<	0.12										
Group 5	Acenaphthene	µg/L	<	0.033										
	Acenaphthylene	µg/L	<	0.03										
	Anthracene	µg/L	<	0.03										
	Benzidine	µg/L	<	1.6										
	Benzo(a)Anthracene	µg/L	<	0.02										
	Benzo(a)Pyrene	µg/L	<	0.02										
	3,4-Benzofluoranthene	µg/L	<	0.013										
	Benzo(ghi)Perylene	µg/L	<	0.027										
	Benzo(k)Fluoranthene	µg/L												
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.027										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.025										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.029										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.12										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.035										
	Butyl Benzyl Phthalate	µg/L	<	0.02										
	2-Chloronaphthalene	µg/L	<	0.03										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.03										
	Chrysene	µg/L	<	0.024										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.017										
	1,2-Dichlorobenzene	µg/L	<	0.016										
	1,3-Dichlorobenzene	µg/L	<	0.016										
	1,4-Dichlorobenzene	µg/L	<	0.016										
	3,3-Dichlorobenzidine	µg/L	<	0.045										
	Diethyl Phthalate	µg/L	<	0.038										
	Dimethyl Phthalate	µg/L	<	0.029										
	Di-n-Butyl Phthalate	µg/L	<	0.027										
	2,4-Dinitrotoluene	µg/L	<	0.027										

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	2,6-Dinitrotoluene	µg/L												
	Di-n-Octyl Phthalate	µg/L	<	0.025										
	1,2-Diphenylhydrazine	µg/L	<	0.038										
	Fluoranthene	µg/L	<	0.029										
	Fluorene	µg/L	<	0.035										
	Hexachlorobenzene	µg/L	<	0.028										
	Hexachlorobutadiene	µg/L	<	0.027										
	Hexachlorocyclopentadiene	µg/L	<	0.015										
	Hexachloroethane	µg/L	<	0.022										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.019										
	Isophorone	µg/L	<	0.032										
	Naphthalene	µg/L	<	0.02										
	Nitrobenzene	µg/L	<	0.02										
	n-Nitrosodimethylamine	µg/L	<	0.021										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.03										
	n-Nitrosodiphenylamine	µg/L	<	0.068										
	Phenanthrene	µg/L	<	0.032										
	Pyrene	µg/L	<	0.03										
	1,2,4-Trichlorobenzene	µg/L	<	0.03										
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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Toxics Management Spreadsheet
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Stream / Surface Water Information

Borough of Elizabethtown, NPDES Permit No. PA0023108, Outfall 002

Instructions | Discharge | Stream

Receiving Surface Water Name: Conoy Creek

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	008278	6	388	7.9			Yes
End of Reach 1	008278	4.33	357	9.63			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	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	6	0.1	40.8									301.9	7.46		
End of Reach 1	4.33	0.1	60.4									301.9	7.46		

Q_h

Location	RMI	LFY (cfs/mi^2)	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	6														
End of Reach 1	4.33														

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Model Results

Borough of Elizabethtown, NPDES Permit No. PA0023108, Outfall 002

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.589 Analysis Hardness (mg/l): 292.39 Analysis pH: 7.62

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	2,044	
Total Antimony	0	0		0	1,100	1,100	2,997	
Total Arsenic	0	0		0	340	340	926	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	57,220	
Total Boron	0	0		0	8,100	8,100	22,071	
Total Cadmium	0	0		0	5.709	6.35	17.3	Chem Translator of 0.899 applied
Total Chromium (III)	0	0		0	1371.904	4,341	11,830	Chem Translator of 0.316 applied
Total Cobalt	0	0		0	95	95.0	259	
Total Copper	0	0		0	36.932	38.5	105	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	59.9	
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	203.073	320	872	Chem Translator of 0.635 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.49	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1160.579	1,163	3,169	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	20.365	24.0	65.3	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	177	
Total Zinc	0	0		0	290.851	297	810	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	8.17	
Acrylonitrile	0	0		0	650	650	1,771	

Benzene	0	0		0	640	640	1,744	
Bromoform	0	0		0	1,800	1,800	4,905	
Carbon Tetrachloride	0	0		0	2,800	2,800	7,629	
Chlorobenzene	0	0		0	1,200	1,200	3,270	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	49,046	
Chloroform	0	0		0	1,900	1,900	5,177	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	40,872	
1,1-Dichloroethylene	0	0		0	7,500	7,500	20,436	
1,2-Dichloropropane	0	0		0	11,000	11,000	29,973	
1,3-Dichloropropylene	0	0		0	310	310	845	
Ethylbenzene	0	0		0	2,900	2,900	7,902	
Methyl Bromide	0	0		0	550	550	1,499	
Methyl Chloride	0	0		0	28,000	28,000	76,294	
Methylene Chloride	0	0		0	12,000	12,000	32,697	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,725	
Tetrachloroethylene	0	0		0	700	700	1,907	
Toluene	0	0		0	1,700	1,700	4,632	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	18,529	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	8,174	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	9,264	
Trichloroethylene	0	0		0	2,300	2,300	6,267	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,526	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,632	
2,4-Dimethylphenol	0	0		0	660	660	1,798	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	218	
2,4-Dinitrophenol	0	0		0	660	660	1,798	
2-Nitrophenol	0	0		0	8,000	8,000	21,798	
4-Nitrophenol	0	0		0	2,300	2,300	6,267	
p-Chloro-m-Cresol	0	0		0	160	160	436	
Pentachlorophenol	0	0		0	16.313	16.3	44.5	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,253	
Acenaphthene	0	0		0	83	83.0	226	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	817	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.36	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	81,744	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	12,262	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	736	
Butyl Benzyl Phthalate	0	0		0	140	140	381	
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	2,234	
1,3-Dichlorobenzene	0	0		0	350	350	954	
1,4-Dichlorobenzene	0	0		0	730	730	1,989	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	10,899	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,812	
Di-n-Butyl Phthalate	0	0		0	110	110	300	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	4,360	
1,2-Diphenylhydrazine	0	0		0	15	15.0	40.9	
Fluoranthene	0	0		0	200	200	545	
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	27.2	
Hexachlorocyclopentadiene	0	0		0	5	5.0	13.6	
Hexachloroethane	0	0		0	60	60.0	163	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	27,248	
Naphthalene	0	0		0	140	140	381	
Nitrobenzene	0	0		0	4,000	4,000	10,899	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	46,321	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	817	
Phenanthrene	0	0		0	5	5.0	13.6	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	354	

☑ *CFC* CCT (min): 43.299 PMF: 1 Analysis Hardness (mg/l): 295.31 Analysis pH: 7.57

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	220	220	865	
Total Arsenic	0	0		0	150	150	590	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	16,115	
Total Boron	0	0		0	1,600	1,600	6,289	
Total Cadmium	0	0		0	0.521	0.6	2.37	Chem Translator of 0.864 applied
Total Chromium (III)	0	0		0	179.913	209	822	Chem Translator of 0.86 applied
Total Cobalt	0	0		0	19	19.0	74.7	
Total Copper	0	0		0	22.592	23.5	92.5	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	20.4	
Dissolved Iron	0	0		0	N/A	N/A	N/A	

Total Iron	0	0		0	1,500	1,500	5,896	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	7.996	12.6	49.6	Chem Translator of 0.633 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	3.56	Chem Translator of 0.85 applied
Total Nickel	0	0		0	129.991	130	512	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	19.6	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	51.1	
Total Zinc	0	0		0	295.706	300	1,179	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	11.8	
Acrylonitrile	0	0		0	130	130	511	
Benzene	0	0		0	130	130	511	
Bromoform	0	0		0	370	370	1,454	
Carbon Tetrachloride	0	0		0	560	560	2,201	
Chlorobenzene	0	0		0	240	240	943	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	13,756	
Chloroform	0	0		0	390	390	1,533	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	12,184	
1,1-Dichloroethylene	0	0		0	1,500	1,500	5,896	
1,2-Dichloropropane	0	0		0	2,200	2,200	8,647	
1,3-Dichloropropylene	0	0		0	61	61.0	240	
Ethylbenzene	0	0		0	580	580	2,280	
Methyl Bromide	0	0		0	110	110	432	
Methyl Chloride	0	0		0	5,500	5,500	21,617	
Methylene Chloride	0	0		0	2,400	2,400	9,433	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	825	
Tetrachloroethylene	0	0		0	140	140	550	
Toluene	0	0		0	330	330	1,297	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	5,503	
1,1,1-Trichloroethane	0	0		0	610	610	2,398	
1,1,2-Trichloroethane	0	0		0	680	680	2,673	
Trichloroethylene	0	0		0	450	450	1,769	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	432	
2,4-Dichlorophenol	0	0		0	340	340	1,336	
2,4-Dimethylphenol	0	0		0	130	130	511	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	62.9	
2,4-Dinitrophenol	0	0		0	130	130	511	
2-Nitrophenol	0	0		0	1,600	1,600	6,289	
4-Nitrophenol	0	0		0	470	470	1,847	
p-Chloro-m-Cresol	0	0		0	500	500	1,965	
Pentachlorophenol	0	0		0	12.516	12.5	49.2	

Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	358	
Acenaphthene	0	0		0	17	17.0	66.8	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	232	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.39	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	23,582	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	3,577	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	212	
Butyl Benzyl Phthalate	0	0		0	35	35.0	138	
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	629	
1,3-Dichlorobenzene	0	0		0	69	69.0	271	
1,4-Dichlorobenzene	0	0		0	150	150	590	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	3,144	
Dimethyl Phthalate	0	0		0	500	500	1,965	
Di-n-Butyl Phthalate	0	0		0	21	21.0	82.5	
2,4-Dinitrotoluene	0	0		0	320	320	1,258	
1,2-Diphenylhydrazine	0	0		0	3	3.0	11.8	
Fluoranthene	0	0		0	40	40.0	157	
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	7.86	
Hexachlorocyclopentadiene	0	0		0	1	1.0	3.93	
Hexachloroethane	0	0		0	12	12.0	47.2	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	8,254	
Naphthalene	0	0		0	43	43.0	169	
Nitrobenzene	0	0		0	810	810	3,184	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	13,363	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	232	
Phenanthrene	0	0		0	1	1.0	3.93	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	102	

☑ ***THH*** CCT (min): 43.299 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream	Trib Conc	Fate	WQC	WQ Obj	WLA (ug/L)	Comments

Pollutants	Conc (µg/L)	CV	(µg/L)	Coef	(µg/L)	(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	22.0	
Total Arsenic	0	0		0	10	10.0	39.3	
Total Barium	0	0		0	2,400	2,400	9,433	
Total Boron	0	0		0	3,100	3,100	12,184	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	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	15.7	
Dissolved Iron	0	0		0	300	300	1,179	
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	3,930	
Total Mercury	0	0		0	0.050	0.05	0.2	
Total Nickel	0	0		0	610	610	2,398	
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	0.94	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	11.8	
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	393	
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	N/A	N/A	N/A	
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	130	
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	267	
Methyl Bromide	0	0		0	100	100.0	393	
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	224	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	393	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	39,304	
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	118	
2,4-Dichlorophenol	0	0		0	10	10.0	39.3	
2,4-Dimethylphenol	0	0		0	100	100.0	393	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	7.86	
2,4-Dinitrophenol	0	0		0	10	10.0	39.3	
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	15,722	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	275	
Anthracene	0	0		0	300	300	1,179	
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	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	786	
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	0.39	
2-Chloronaphthalene	0	0		0	800	800	3,144	
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	3,930	
1,3-Dichlorobenzene	0	0		0	7	7.0	27.5	
1,4-Dichlorobenzene	0	0		0	300	300	1,179	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	2,358	
Dimethyl Phthalate	0	0		0	2,000	2,000	7,861	
Di-n-Butyl Phthalate	0	0		0	20	20.0	78.6	
2,4-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	78.6	
Fluorene	0	0		0	50	50.0	197	
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	15.7	

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	134	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	39.3	
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	78.6	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.28	

☑ *CRL* CCT (min): 28.382 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	
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	0.88	
Benzene	0	0		0	0.58	0.58	8.49	
Bromoform	0	0		0	7	7.0	103	
Carbon Tetrachloride	0	0		0	0.4	0.4	5.86	

Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	11.7	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	83.5	
Dichlorobromomethane	0	0		0	0.95	0.95	13.9	
1,2-Dichloroethane	0	0		0	9.9	9.9	145	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	13.2	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3.95	
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	293	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2.93	
Tetrachloroethylene	0	0		0	10	10.0	146	
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	8.05	
Trichloroethylene	0	0		0	0.6	0.6	8.79	
Vinyl Chloride	0	0		0	0.02	0.02	0.29	
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	0.44	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	22.0	
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	0.001	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.015	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.015	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.44	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	4.69	
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	1.76	

Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.001	
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	0.73	
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	0.73	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.44	
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	0.001	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.15	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1.46	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.015	
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	0.01	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.073	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	48.3	
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
Dichlorobromomethane	Report	Report	Report	Report	Report	µg/L	13.9	CRL	Discharge Conc > 25% 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 Aluminum	1,310	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	22.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	9,433	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	6,289	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	2.37	µg/L	Discharge Conc < TQL
Total Chromium (III)	822	µg/L	Discharge Conc < TQL
Total Cobalt	74.7	µg/L	Discharge Conc < TQL
Total Copper	67.2	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	15.7	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	1,179	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	5,896	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	49.6	µg/L	Discharge Conc < TQL
Total Manganese	3,930	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.2	µg/L	Discharge Conc < TQL
Total Nickel	512	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	19.6	µg/L	Discharge Conc < TQL
Total Silver	41.8	µg/L	Discharge Conc < TQL
Total Thallium	0.94	µg/L	Discharge Conc < TQL
Total Zinc	519	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	5.24	µg/L	Discharge Conc < TQL
Acrylonitrile	0.88	µg/L	Discharge Conc < TQL
Benzene	8.49	µg/L	Discharge Conc < TQL
Bromoform	103	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	5.86	µg/L	Discharge Conc < TQL
Chlorobenzene	393	µg/L	Discharge Conc < TQL
Chlorodibromomethane	11.7	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	13,756	µg/L	Discharge Conc < TQL

Chloroform	83.5	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	145	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	130	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	13.2	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	3.95	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	267	µg/L	Discharge Conc < TQL
Methyl Bromide	393	µg/L	Discharge Conc < TQL
Methyl Chloride	21,617	µg/L	Discharge Conc < TQL
Methylene Chloride	293	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	2.93	µg/L	Discharge Conc < TQL
Tetrachloroethylene	146	µg/L	Discharge Conc < TQL
Toluene	224	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	393	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	2,398	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	8.05	µg/L	Discharge Conc < TQL
Trichloroethylene	8.79	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.29	µg/L	Discharge Conc < TQL
2-Chlorophenol	118	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	39.3	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	393	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	7.86	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	39.3	µg/L	Discharge Conc < TQL
2-Nitrophenol	6,289	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,847	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	279	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.44	µg/L	Discharge Conc < TQL
Phenol	15,722	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	22.0	µg/L	Discharge Conc < TQL
Acenaphthene	66.8	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	1,179	µg/L	Discharge Conc < TQL
Benzidine	0.001	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.015	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.001	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.015	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.44	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	786	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	4.69	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	212	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.39	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	3,144	µg/L	Discharge Conc < TQL

4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	1.76	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.001	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	629	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	27.5	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	590	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.73	µg/L	Discharge Conc < TQL
Diethyl Phthalate	2,358	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	1,965	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	78.6	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.73	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.44	µg/L	Discharge Conc < TQL
Fluoranthene	78.6	µg/L	Discharge Conc < TQL
Fluorene	197	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.001	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.15	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	3.93	µg/L	Discharge Conc < TQL
Hexachloroethane	1.46	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.015	µg/L	Discharge Conc < TQL
Isophorone	134	µg/L	Discharge Conc < TQL
Naphthalene	169	µg/L	Discharge Conc < TQL
Nitrobenzene	39.3	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.01	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.073	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	48.3	µg/L	Discharge Conc < TQL
Phenanthrene	3.93	µg/L	Discharge Conc < TQL
Pyrene	78.6	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.28	µg/L	Discharge Conc < TQL