Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0027146**
Facility Type	**Municipal**	APS ID	**1144095**
Major / Minor	**Major**	Authorization ID	**1538400**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Borough of Ambridge Municipal Authority**	Facility Name	**Ambridge Borough STP**
Applicant Address	600 11th Street	Facility Address	2201 Ohio River Boulevard Pa Rte 65
	Ambridge, PA 15003-2377		Ambridge, PA 15003-2568
Applicant Contact	Michael Mikulich	Facility Contact	Jesse Burkert
Applicant Phone	(724) 266-7810	Facility Phone	(724) 266-0790
Client ID	75089	Site ID	263595
Ch 94 Load Status	Not Overloaded	Municipality	Ambridge Borough
Connection Status		County	Beaver
Date Application Received	August 22, 2025	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility
Purpose of Application	NPDES permit renewal application.		

Summary of Review

The Pa Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from NIRA Consulting Engineers, Inc. (consultant) on August 22, 2025, on behalf of Borough of Ambridge Municipal Authority (permittee) for Permittee's Ambridge Borough STP (facility). This is a major sewage facility with a design flow of 2.56 MGD that discharges into Ohio River (WWF) in state watershed 20-G. The current permit will expire on February 28, 2026. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to expiration date. Renewal NPDES permit application under Clean Water Program are not covered by PADEP's PDG per 021-2100-001. This fact sheet is developed in accordance with 40 CFR §124.56.

Changes to existing permit: **Added:** E. Coli, PFOA, PFOS, HFPO-DA, and PFBS.

Sludge use and disposal description and location(s): Dewatered and pressed biosolids are sent to Brunner Landfill for ultimate disposal.

Public Participation

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

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, P.E. / Environmental Engineer	October 10, 2025
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	10/10/2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	2.56
Latitude	40º 36' 13"	Longitude	-80º 14' 2.0"
Quad Name	Ambridge	Quad Code	1404
Wastewater Description:	Sewage Effluent		
Receiving Waters	Ohio River (WWF)	Stream Code	32317
NHD Com ID	99681540	RMI	963.49
Drainage Area	19,500 mi^2	Yield (cfs/mi^2)	0.25
Q_{7-10} Flow (cfs)	4800	Q_{7-10} Basis	Previous fact sheet
Elevation (ft)	682.74	Slope (ft/ft)	
Watershed No.	20-G	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	HIGHWAY/ROAD/BRIDGE RUNOFF (NON-CONSTRUCTION RELATED), REMOVAL OF RIPARIAN VEGETATION, URBAN RUNOFF/STORM SEWERS		
TMDL Status	**Final, 03/06/2001**	Name	**Ohio River PCB and Chlordane TMDL**

Background/Ambient Data		Data Source
pH (SU)	7.8	WQN0902, median Jul-Sep, 1999-2019
Temperature (°C)	25.24	WQN0902, median Jul-Sep, 1999-2019
Hardness (mg/L)	116.9	WQN0902, median Jul-Sep, 1999-2019
Other:		

Nearest Downstream Public Water Supply Intake		Westview New Baden Plant	
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI	961.61	Distance from Outfall (mi)	1.88

Changes Since Last Permit Issuance: None

Other Comments:

Streamflow:

StreamStats couldn't be utilized to delineate the drainage area at the discharge point due to the larger size of the drainage area. Previous fact sheet stated that the drainage area at the discharge point is 19,500 mi^2, yield 0.25 cfsm, and Q7-10 is 4,800 cfs. Default Q1-10:Q7-10 of 0.64 and Q30-10:Q7-10 of 1.36 will be used for modeling.

PWS Intake:

The nearest downstream public water supply is Westview New Baden Plant, on Ohio River at RMI 961.61, which is approximately 1.88 miles downstream of the discharge point. Because of the distance, dilution with much larger stream, and effluent limits, the discharge is expected not to affect the intake.

Wastewater Characteristics:

Default discharge pH of 7.0 S.U. and default discharge temperature of 25°C will be used. The application data indicated an average Total Hardness of 88.9 mg/l out of 3 samples.

Background data:
The nearby downstream Water Quality Network Station 21PA_WQX-WQN0902 is located on SR 4025 Sewickley Bridge near Sewickley Township, Allegheny County which is approximately 5.5 miles upstream of Outfall 001. Per the WQN station's data, the median pH is 7.8 S.U., median temperature is 25.24°C, and total hardness is 116.9 mg/l for the months July-September for reporting period 1999-2019. These values will be used for modeling, as needed.

303d Listed Streams:
The discharge from this facility is in Ohio River in state watershed 20-G at RMI 963.49, which is Recreational Use impaired for Pathogens from unknown source. It is also Fish Consumption impaired for PCB and Dioxin from unknown source. It is supporting Potable Use and Aquatic Life uses. A TMDL was finalized for Chlordane and PCBs on April 9, 2001.

Ohio River PCB and Chlordane Total Maximum Daily Load (TMDL):
This TMDL applies to the Ohio River from the point in Pittsburgh to the State border, listed in Basins 20-B, D, and G (RMI 981 to 941). The Ohio River was included on the 1998 Section 303(d) list as high priority for TMDL development. The first advisory for Ohio River was issued on December 12, 1979. June 26, 1986, advisory included PCB and Chlordane. However, the TMDL stated that for PCBs, the former point sources identified in the Source Assessment Section have ceased operations, there are no known point source dischargers of PCBs. For Chlordane, because there are no known point sources to this segment of Ohio River, it is treated as a nonpoint source contaminant. All TMDL are assigned to Load Allocation (non-point sources). No WLA was assigned to this facility.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The receiving streams are designated as Warm Water Fishes (WWF).

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

Biosolids Management:
Sewage sludge is decanted, anaerobically digested, and dewatered with a belt filter press. Supernatant, filtrate, and belt wash water are returned to the primary settling tank. Dewatered and pressed biosolids are sent to Brunner Landfill for ultimate disposal.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	010	Design Flow (MGD)	0
Latitude	40º 36' 9.67"	Longitude	-80º 14' 2.60"
Quad Name	Ambridge	Quad Code	1404
Wastewater Description:	Stormwater from plant yard and driveway		
Receiving Waters	Unnamed Tributary to Ohio River	Stream Code	
NHD Com ID	99681590	RMI	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	HIGHWAY/ROAD/BRIDGE RUNOFF (NON-CONSTRUCTION RELATED), REMOVAL OF RIPARIAN VEGETATION, URBAN RUNOFF/STORM SEWERS		

Treatment Facility Summary

Treatment Facility Name: Ambridge Borough STP

WQM Permit No.	Issuance Date
0469402 A-2	7/6/2009
0469402 A-1	10/28/2003
0469402	9/9/1992

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Trickling Filter With Settling	Gas Chlorine	2.56

Hydraulic Capacity (MGD)	Organic Capacity (lbs./day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
2.56	5241	Not Overloaded	Belt Filtration	Landfill

Changes Since Last Permit Issuance: None

Treatment Plant Description

Ambridge Borough owns and operates Ambridge Borough STP, located in Ambridge Borough, Beaver County. This is a major sewage facility with a design flow of 2.56 MGD, Hydraulic capacity is 2.56 MGD, and Organic capacity is 5,241 lbs. BOD5/day.

Preliminary treatment is provided by mechanical screening and grit removal. Treatment then provided by primary clarifiers (2), a trickling filter (bio tower) system for secondary treatment, secondary clarifiers (4). Disinfection is provided by gas chlorination.

The facility accepts flows from the following municipal contributors:

TRIBUTARY INFORMATION

Municipalities Served	Flow Contribution (%)	Type of Sewer System		Population
		Separate (%)	Combined (%)	
Borough of Ambridge, Beaver County	70.9	100	0	6,972
Harmony Township, Beaver County	14.2	100	0	3,187
Leet Township, Allegheny County	11.2	52	48	1,642
Leetsdale Borough, Allegheny County	1.0	100	0	1,162
Bell Acres Borough, Allegheny County	2.8	100	0	1,505

The permit application indicated that there is one non-significant categorical industrial user (Ryerson) and one non-significant non-categorical industrial user (WM of Pittsburgh Steel Valley Recycling Center). The flow contribution from either of them is unknown. Only the sanitary portion of the wastewater is discharged into the Ambridge's collection system.

Existing Limits

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	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	533.7	811.3	XXX	25	40	50	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Total Suspended Solids	640.5	960.7	XXX	30	45	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Nov 1 - Mar 31	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) Apr 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	400	2/week	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen	533.7	XXX	XXX	25	XXX	XXX	2/week	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite

Compliance History

DMR Data for Outfall 001 (from July 1, 2024 to June 30, 2025)

Parameter	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24
Flow (MGD) Average Monthly	1.7	1.6	1.8	1.5	2.1	1.8	1.7	1.6	1.4	1.5	1.8	1.4
Flow (MGD) Daily Maximum	4.4	2.5	5.4	2.1	4.6	2.3	2.2	2.3	1.8	2.2	4.2	2.2
pH (S.U.) IMIN	6.7	6.5	6.4	6.9	6.9	6.8	6.8	6.6	6.5	6.5	6.4	6.3
pH (S.U.) IMAX	7.2	7.1	7.3	7.8	7.3	7.4	7.5	7.4	7.1	7.6	7.1	6.9
DO (mg/L) IMIN	5.4	5.3	6.1	7.3	7.4	5.2	4.5	4.8	4.5	3.7	4.4	4.8
TRC (mg/L) Average Monthly	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5
TRC (mg/L) IMAX	0.7	0.7	0.6	0.6	0.7	0.7	0.7	0.8	0.6	0.7	0.6	0.6
CBOD5 (lbs/day) Average Monthly	61.0	103.8	84.1	76.8	82.0	103.3	80.4	75.0	57.2	69.6	67.2	54.4
CBOD5 (lbs/day) Weekly Average	80.1	173.4	108.6	85.2	109.8	142.9	107.2	102.7	63.0	76.3	85.1	69.1
CBOD5 (mg/L) Average Monthly	5	7	6	6.0	5	7	6	5	5	6.0	4	4
CBOD5 (mg/L) Weekly Average	6	10	7	8.0	6	9	8	6	5	6.0	6	6
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1355.8	1991.3	1863.1	1644.1	1979.5	1678.5	1857.7	2127.1	1766.4	2181.0	1711.1	1592.4
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	2095	2013.9	2795.6	2410.3	2543.7	2158.4	2238.5	2563.7	2253.9	2694.2	1986.7	1812.3
BOD5 (mg/L) Raw Sewage Influent Average Monthly	107	145	134	134	113	110	130	156	147	176	111	130
BOD5 (mg/L) Raw Sewage Influent Weekly Average	150	147	154	160	157	139	166	193	174	221	143	161
TSS (lbs/day) Average Monthly	90.2	131.8	205.1	158.4	79.0	158.5	178.1	94.2	38.5	46.5	52.6	56.9
TSS (lbs/day) Raw Sewage Influent Average Monthly	1797.5	2516.2	1735	1998.9	1860.5	2122.4	1901.7	2892.5	1869.7	2265.7	2065.8	3354.9
TSS (lbs/day) Raw Sewage Influent Weekly Average	2125	3034.9	2942.4	3536.2	2399.0	2633.8	2589.6	3886.4	2737.2	2580.4	3112.5	3794.7

TSS (lbs/day) Weekly Average	136.4	217.7	377.8	245.2	113.0	177.6	281.9	160.1	45.5	56.3	76.3	75.1
TSS (mg/L) Average Monthly	7	8	14	13	5	10	12	7	3	4	3	5
TSS (mg/L) Raw Sewage Influent Average Monthly	146	174	121	161	1122	142	134	211	153	182	126	276
TSS (mg/L) Raw Sewage Influent Weekly Average	202	193	171	242	147	181	181	257	209	211	168	326
TSS (mg/L) Weekly Average	11	12	21	21	7	13	21	9	4	5	4	6
Fecal Coliform (No./100 ml) Geometric Mean	15	21	17	8	57	4	11	5	2	1	1	1
Fecal Coliform (No./100 ml) Instantaneous Maximum	2420	579	2420	276	2420	56	1203	2000	24	1	2	1
Total Nitrogen (mg/L) Daily Maximum	18.6			12.2			16.7			20.0		
Ammonia (lbs/day) Average Monthly	4.9	10.0	18.7	41.1	46.8	37.5	11.0	5.4	7.1	12.2	9.9	12.1
Ammonia (mg/L) Average Monthly	1	1	1	3	3	2	1	1	1	1	1	1
Total Phosphorus (mg/L) Daily Maximum	1.79			1.46			2.14			1.97		

Compliance History

Effluent Violations for Outfall 001, from: August 1, 2024, To: June 30, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	04/30/25	IMAX	2420	No./100 ml	400	No./100 ml
Fecal Coliform	05/31/25	IMAX	579	No./100 ml	400	No./100 ml
Fecal Coliform	06/30/25	IMAX	2420	No./100 ml	400	No./100 ml

Summary of Inspection:
March 4, 2025: CEI conducted. No violation noted. Facility was well maintained. Recommended a bound binder for daily operational records. The effluent appeared clear. There were no violations since last inspection.

March 13, 2024: CEI conducted. No violations noted. Recommended to verify IW dischargers and develop limits to stop accepting hauled in waste during high flows.

February 1, 2023: CEI conducted. Violations noted including Fecal Coliform permit limit exceedances in June, September, and October 2022. The cause was believed to be by excess discharge from digesters. Effluent at chlorine contact tank appeared clear.

October 19, 2021: CEI conducted. No violations noted.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 2.56
Latitude 40º 36' 13.00" **Longitude** -80º 14' 2.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
BOD5	45	Average Monthly		ORSANCO
BOD5	65	Weekly Average		ORSANCO
CBOD5	40	Average Monthly		ORSANCO
CBOD5	60	Weekly Average		ORSANCO
TSS	45	Average Monthly		ORSANCO
TSS	65	Weekly Average		ORSANCO
pH	6-9 S.U.	Min-Max		ORSANCO
Fecal Coliform	2,000/100 ml	Geo Mean		ORSANCO
E. Coli (4/1 – 10/31)	130/100 ml	90-days Geo Mean		ORSANCO
E. Coli	240/100 ml	<25%		ORSANCO

Comments: The above ORSANCO limits for BOD5 or CBOD5, and TSS are for trickling filter, such as this facility.

Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limit (lb./day) = concentration limit (mg/L) × design flow (mgd) × 8.34

Water Quality based Effluent Limitations:

A WQM 7.0 modeling wasn't performed due to larger dilution at the Ohio River. The dilution ratio is 4800 cfs: (2.56 MGD * 1.547 cfs/MGD) or about 1,200:1. Secondary treatment requirements for CBOD5, DO, Ammonia-N, TSS, and TRC should be protective. The existing limits for these pollutants will be carried over. The current permit has DO monitoring requirement. SOP titled "Establishing Effluent Limitations for Individual Sewage Permits" (BCW-PMT-033, revised Feb 5, 2024) recommends a minimum DO of 4.0 mg/l to ensure proper operation and maintenance of the facility.

ORSANCO Compact Pollution Control Standards:

The previous table lists ORSANCO Compact's 2019 revised requirements for BOD5/CBOD5, TSS, Fecal Coliform, and E. Coli. CBOD5 and TSS limits are less stringent than State/Federal requirements. More stringent limits will be applied. pH limits are the same as State/Federal limits.

PADEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised February 5, 2024)" footnote 11 (page 3) states "Ohio River Basin: For any discharge not direct to the Ohio River main stem, apply the fecal coliform limits as presented in the table above. If the discharge is directly to the Ohio River, modify the fecal coliform limits as follows: May through October – 200 geometric mean, 400 IMAX, and November through April – 2,000 geometric mean, 10,000 IMAX." This recommendation supports existing limits. Existing Fecal Coliform limits will be continued. It should be noted that per the previous SOP and under the authority of Pa Code 25 § 92a. 61, a monthly **E. Coli** monitoring will be added in this renewal for sewage facilities with design flow more than 1 MGD.

Toxics Management Spreadsheet (TMS)

Based on the available data, PADEP utilizes Toxics Management Spreadsheet (TMS) to (1) evaluate reasonable potential for toxic pollutants to cause or contribute to an excursion above the water quality standards and (2) develop WQBELs for those such toxic pollutants (i.e., 40 CFR § 122.44(d)(1)(i)). It is noteworthy that some of these pollutants that may be reported as "non-detect", but still exceeded the criteria, were determined to be candidates for modeling because the method detection levels used to analyze those pollutants were higher than target QLs and/or the most stringent Chapter 93 criteria. The model then recommended the appropriate action for the Pollutants of Concerns based on the following logic as stated in PADEP's SOP titled *"Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers (DEP SOP No.: BCW-PMT-037, Revised May 20, 2021)"*:

1. In general, establish limits in the draft permit where the effluent concentration determined in B.1 or B.2 equals or exceeds 50% of the WQBEL (i.e., RP is demonstrated). Use the average monthly, maximum daily and instantaneous maximum (IMAX) limits for the permit as recommended by the TMS (or, if appropriate, use a multiplier of 2 times the average monthly limit for the maximum daily limit and 2.5 times the average monthly limit for IMAX).

2. For non-conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 25% - 50% of the WQBEL.

3. For conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 10% - 50% of the WQBEL.

NOTE 4 – If the effluent concentration determined in B.1 or B.2 is "non-detect" at or below the target quantitation limit (TQL) for the pollutant as specified in the TMS and permit application, the pollutant may be eliminated as a candidate for WQBELs or monitoring requirements unless 1) a more sensitive analytical method is available for the pollutant under 40 CFR Part 136 where the quantitation limit for the method is less than the applicable water quality criterion and 2) a detection at the more sensitive method may lead to a determination that an effluent limitation is necessary, considering available dilution at design conditions.

NOTE 5 – If the effluent concentration determined in B.1 or B.2 is a detection below the TQL but above or equal to the applicable water quality criterion, WQBELs or monitoring may be established for the pollutant.

4. Application managers may, on a site- and pollutant-specific basis, deviate from these guidelines where there is specific rationale that is documented in the fact sheet.

Major sewage facilities are required to sample for pollutants group 1-5, at a minimum, and 6 and/or 7, if applicable. TMDL parameters, as applicable, are also required to be sampled if they aren't covered in any pollutant groups or by Part A of the permit. Pollutants groups 2-7 are modeled through TMS. The facility is required to provide at least three sample results of the effluent from outfall(s) discharging processed wastewater. The permittee submitted at least three sample results of all pollutants in groups 1-5. Maximum sample results of a given pollutant is the input of the model if the sample size is less than 10. For pollutants with sample size ≥ 10, PADEP utilizes TOXCONC to calculate Average Monthly Effluent Concentration (AMEC) and Coefficient of Variation (CoV) to refine the model input. The statistical methodologies used in this spreadsheet are taken from EPA's *TSD for Water Quality-based Toxics Control, Appendix E* and are consistent with PADEP's technical guidance 391-2000-024.

The pollutants are modeled through TMS and the output from the model didn't show any concern for any pollutants. The model output file is attached in this fact sheet.

Other Requirements:

Nutrients monitoring:
PADEP's SOP BCW-PMT-033 recommends monitoring for Total Nitrogen and Total Phosphorus for facilities with design flow more than 2000-GPD, which is also supported by Pa Code 25 Ch. 92a.61. Current monitoring requirement will be continued. Monitoring frequency will be changed from 1/quarter to 1/month.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
The existing limits of 30 mg/L average monthly, 45 mg/l average weekly, and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). The mass based average monthly and weekly average limits are calculated to be 640.5 lbs./day and 960.7 lbs./day respectively, which are the same as existing permit and will be carried over.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The attached printout indicates that a water quality limit of 0.5 mg/l would be needed to prevent toxicity concerns at the discharge point for Outfall 001. The recommended IMAX limit is 1.6 mg/l. These are the existing limits and will be carried over.

PFOA, PFOS, HFPO-DA and PFBS:
As part of the renewal application, the discharge concentrations for PFAS parameters (all detectable) are provided as follows: 6.6 ug/l for PFOA, 7.3 ug/l for PFOS, 3.8 ug/l for PFBS, and <6.4 ug/l for HFPO-DA. Per BCW-PMT-033 (revised February 5, 2024) and under the authority of Pa Code 25 § 92a.61, quarterly monitoring for PFOA, PFOS, HFPO-DA, and PFBS will be added in this renewal with a footnote that will read:

"The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs."

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Flow and Influent BOD_5 and TSS Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

Anti-Backsliding
Anti-backsliding prohibition is justified in sections where an exception is justified for the affected pollutant(s). For remaining pollutants, this prohibition isn't applicable since the proposed limits are at least as stringent as were in current permit.

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: **Annually**

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: 1%.

Summary of Four Most Recent Test Results

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
11/23/2021	Pass	Pass	Pass	Pass
11/7/2022	Pass	Pass	Pass	Pass
11/21/2023	Pass	Pass	Pass	Pass
11/12/2024	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: None

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

Acute Partial Mix Factor (PMFa): **0.001** Chronic Partial Mix Factor (PMFc): **0.004**

1. Determine IWC – Acute (IWCa):

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

[(2.56 MGD x 1.547) / ((4800 cfs x 0.001) + (2.56 MGD x 1.547))] x 100 = **45.21%**

Is IWCa < 1%? ☐ **YES** ☒ **NO**

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**

2. Determine Target IWCc (If Chronic Tests Required)

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

[(2.56 MGD x 1.547) / ((4800 cfs x 0.004) + (2.56 MGD x 1.547))] x 100 = **17.1%**

3. Determine Dilution Series

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

Dilution Series = 100%, 59%, 17%, 9%, and 4%.

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	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	533.7	811.3	XXX	25	40	50	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Total Suspended Solids	640.5	960.7	XXX	30	45	60	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Nov 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	400	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen	533.7	XXX	XXX	25	XXX	XXX	2/week	Grab

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 Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
PFOA (ug/L)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
PFOS (ug/L)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
PFBS (ug/L)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
HFPO-DA (ug/L)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab

Compliance Sampling Location: At Outfall 001

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, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033
☐	Other:

TMS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Ambridge Boro STP | NPDES Permit No.: PA0027146 | Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste | Wastewater Description: Treated 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
2.56	88.9	7						

					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											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		238									
	Total Antimony	µg/L	<	0.495									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		17.5									
	Total Beryllium	µg/L	<	0.037									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L		11									
	Free Cyanide	µg/L	<	0.5									
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L		40									
	Total Iron	µg/L		200									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		84.9									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L	<	4									
	Total Phenols (Phenolics) (PWS)	µg/L		40									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	µg/L		27.3									
	Total Molybdenum	µg/L	<	2									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5										
	Chlorobenzene	µg/L		0.5										
	Chlorodibromomethane	µg/L	<	0.5										
	Chloroethane	µg/L	<	0.5										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5										
	Chloroform	µg/L	<	3.07										
	Dichlorobromomethane	µg/L	<	0.658										
	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	<	0.25										
	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	<	0.25										
	2,4-Dichlorophenol	µg/L	<	0.25										
	2,4-Dimethylphenol	µg/L	<	0.25										
	4,6-Dinitro-o-Cresol	µg/L	<	2										
	2,4-Dinitrophenol	µg/L	<	5										
	2-Nitrophenol	µg/L	<	0.25										
	4-Nitrophenol	µg/L	<	0.25										
	p-Chloro-m-Cresol	µg/L	<	0.25										
	Pentachlorophenol	µg/L	<	5										
	Phenol	µg/L	<	0.25										
	2,4,6-Trichlorophenol	µg/L	<	0.25										
Group 5	Acenaphthene	µg/L	<	0.25										
	Acenaphthylene	µg/L	<	0.25										
	Anthracene	µg/L	<	0.25										
	Benzidine	µg/L	<	0.25										
	Benzo(a)Anthracene	µg/L	<	0.25										
	Benzo(a)Pyrene	µg/L	<	0.25										
	3,4-Benzofluoranthene	µg/L	<	0.25										
	Benzo(ghi)Perylene	µg/L	<	0.25										
	Benzo(k)Fluoranthene	µg/L	<	0.25										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.25										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.25										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.25										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	1.74										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.25										
	Butyl Benzyl Phthalate	µg/L	<	0.25										
	2-Chloronaphthalene	µg/L	<	0.25										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.25										
	Chrysene	µg/L	<	0.25										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.25										
	1,2-Dichlorobenzene	µg/L	<	0.25										
	1,3-Dichlorobenzene	µg/L	<	0.25										
	1,4-Dichlorobenzene	µg/L	<	0.25										
	3,3-Dichlorobenzidine	µg/L	<	0.25										
	Diethyl Phthalate	µg/L	<	0.44										
	Dimethyl Phthalate	µg/L	<	0.25										
	Di-n-Butyl Phthalate	µg/L	<	3.98										
	2,4-Dinitrotoluene	µg/L	<	0.25										

	2,6-Dinitrotoluene	µg/L	<	0.25										
	Di-n-Octyl Phthalate	µg/L	<	0.25										
	1,2-Diphenylhydrazine	µg/L	<	0.25										
	Fluoranthene	µg/L	<	0.25										
	Fluorene	µg/L	<	0.25										
	Hexachlorobenzene	µg/L	<	0.25										
	Hexachlorobutadiene	µg/L	<	0.5										
	Hexachlorocyclopentadiene	µg/L	<	0.5										
	Hexachloroethane	µg/L	<	0.25										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.25										
	Isophorone	µg/L	<	0.25										
	Naphthalene	µg/L	<	0.25										
	Nitrobenzene	µg/L	<	0.25										
	n-Nitrosodimethylamine	µg/L	<	0.25										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.25										
	n-Nitrosodiphenylamine	µg/L	<	0.25										
	Phenanthrene	µg/L	<	0.25										
	Pyrene	µg/L	<	0.25										
	1,2,4-Trichlorobenzene	µg/L	<	0.25										
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												

Receiving Surface Water Name: Ohio River

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	032317	963.49	682.74	19500	0.0001		Yes
End of Reach 1	032317	962.66	682.61	19506.88			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	963.49	0.25			125	1500	12	0.271	0.225			116.9	7.8		
End of Reach 1	962.66	0.25										116.9	7.8		

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	963.49					1500	18.108	0.458	0.134						
End of Reach 1	962.66														

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.045 Analysis Hardness (mg/l): 116.4 Analysis pH: 7.76

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 Aluminum	0	0		0	750	750	42,297	
Total Antimony	0	0		0	1,100	1,100	62,035	
Total Arsenic	0	0		0	340	340	19,174	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,184,303	
Total Boron	0	0		0	8,100	8,100	456,803	
Total Cadmium	0	0		0	2.334	2.49	140	Chem Translator of 0.938 applied
Hexavalent Chromium	0	0		0	16	16.3	919	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	5,358	
Total Copper	0	0		0	15.507	16.2	911	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	1,241	
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	76.165	99.1	5,587	Chem Translator of 0.769 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	92.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	532.441	534	30,087	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	4.177	4.91	277	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	3,666	
Total Zinc	0	0		0	133.275	136	7,685	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	169	
Acrylonitrile	0	0		0	650	650	36,657	
Benzene	0	0		0	640	640	36,093	
Bromoform	0	0		0	1,800	1,800	101,512	
Carbon Tetrachloride	0	0		0	2,800	2,800	157,907	

Chlorobenzene	0	0		0	1,200	1,200	67,674	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	1,015,117	
Chloroform	0	0		0	1,900	1,900	107,151	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	845,931	
1,1-Dichloroethylene	0	0		0	7,500	7,500	422,965	
1,2-Dichloropropane	0	0		0	11,000	11,000	620,349	
1,3-Dichloropropylene	0	0		0	310	310	17,483	
Ethylbenzene	0	0		0	2,900	2,900	163,547	
Methyl Bromide	0	0		0	550	550	31,017	
Methyl Chloride	0	0		0	28,000	28,000	1,579,071	
Methylene Chloride	0	0		0	12,000	12,000	676,745	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	56,395	
Tetrachloroethylene	0	0		0	700	700	39,477	
Toluene	0	0		0	1,700	1,700	95,872	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	383,489	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	169,186	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	191,744	
Trichloroethylene	0	0		0	2,300	2,300	129,709	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	31,581	
2,4-Dichlorophenol	0	0		0	1,700	1,700	95,872	
2,4-Dimethylphenol	0	0		0	660	660	37,221	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	4,512	
2,4-Dinitrophenol	0	0		0	660	660	37,221	
2-Nitrophenol	0	0		0	8,000	8,000	451,163	
4-Nitrophenol	0	0		0	2,300	2,300	129,709	
p-Chloro-m-Cresol	0	0		0	160	160	9,023	
Pentachlorophenol	0	0		0	18.741	18.7	1,057	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	25,942	
Acenaphthene	0	0		0	83	83.0	4,681	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	16,919	
Benzo(a)Anthracene	0	0		0	0.5	0.5	28.2	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	1,691,861	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	253,779	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	15,227	
Butyl Benzyl Phthalate	0	0		0	140	140	7,895	
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	46,244	

1,3-Dichlorobenzene	0	0		0	350	350	19,738	
1,4-Dichlorobenzene	0	0		0	730	730	41,169	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	225,582	
Dimethyl Phthalate	0	0		0	2,500	2,500	140,988	
Di-n-Butyl Phthalate	0	0		0	110	110	6,203	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	90,233	
2,6-Dinitrotoluene	0	0		0	990	990	55,831	
1,2-Diphenylhydrazine	0	0		0	15	15.0	846	
Fluoranthene	0	0		0	200	200	11,279	
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	564	
Hexachlorocyclopentadiene	0	0		0	5	5.0	282	
Hexachloroethane	0	0		0	60	60.0	3,384	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	563,954	
Naphthalene	0	0		0	140	140	7,895	
Nitrobenzene	0	0		0	4,000	4,000	225,582	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	958,721	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	16,919	
Phenanthrene	0	0		0	5	5.0	282	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	7,331	

☑ *CFC* CCT (min): 720 PMF: 0.312 Analysis Hardness (mg/l): 116.83 Analysis pH: 7.79

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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	84,654	
Total Arsenic	0	0		0	150	150	57,719	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,577,641	
Total Boron	0	0		0	1,600	1,600	615,665	
Total Cadmium	0	0		0	0.274	0.3	117	Chem Translator of 0.902 applied
Hexavalent Chromium	0	0		0	10	10.4	4,000	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	7,311	
Total Copper	0	0		0	10.229	10.7	4,100	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	2,001	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,847,942	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.980	3.88	1,492	Chem Translator of 0.768 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	349	Chem Translator of 0.85 applied
Total Nickel	0	0		0	59.320	59.5	22,894	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	1,920	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	5,002	
Total Zinc	0	0		0	134.779	137	52,598	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	1,154	
Acrylonitrile	0	0		0	130	130	50,023	
Benzene	0	0		0	130	130	50,023	
Bromoform	0	0		0	370	370	142,372	
Carbon Tetrachloride	0	0		0	560	560	215,483	
Chlorobenzene	0	0		0	240	240	92,350	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	1,346,766	
Chloroform	0	0		0	390	390	150,068	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	1,192,850	
1,1-Dichloroethylene	0	0		0	1,500	1,500	577,186	
1,2-Dichloropropane	0	0		0	2,200	2,200	846,539	
1,3-Dichloropropylene	0	0		0	61	61.0	23,472	
Ethylbenzene	0	0		0	580	580	223,178	
Methyl Bromide	0	0		0	110	110	42,327	
Methyl Chloride	0	0		0	5,500	5,500	2,116,347	
Methylene Chloride	0	0		0	2,400	2,400	923,497	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	80,806	
Tetrachloroethylene	0	0		0	140	140	53,871	
Toluene	0	0		0	330	330	126,981	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	538,707	
1,1,1-Trichloroethane	0	0		0	610	610	234,722	
1,1,2-Trichloroethane	0	0		0	680	680	261,657	
Trichloroethylene	0	0		0	450	450	173,156	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	42,327	
2,4-Dichlorophenol	0	0		0	340	340	130,829	
2,4-Dimethylphenol	0	0		0	130	130	50,023	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	6,157	
2,4-Dinitrophenol	0	0		0	130	130	50,023	
2-Nitrophenol	0	0		0	1,600	1,600	615,665	
4-Nitrophenol	0	0		0	470	470	180,851	
p-Chloro-m-Cresol	0	0		0	500	500	192,395	
Pentachlorophenol	0	0		0	14.378	14.4	5,533	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	35,016	
Acenaphthene	0	0		0	17	17.0	6,541	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	22,703	
Benzo(a)Anthracene	0	0		0	0.1	0.1	38.5	

Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	2,308,743	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	350,159	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	20,779	
Butyl Benzyl Phthalate	0	0		0	35	35.0	13,468	
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	61,566	
1,3-Dichlorobenzene	0	0		0	69	69.0	26,551	
1,4-Dichlorobenzene	0	0		0	150	150	57,719	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	307,832	
Dimethyl Phthalate	0	0		0	500	500	192,395	
Di-n-Butyl Phthalate	0	0		0	21	21.0	8,081	
2,4-Dinitrotoluene	0	0		0	320	320	123,133	
2,6-Dinitrotoluene	0	0		0	200	200	76,958	
1,2-Diphenylhydrazine	0	0		0	3	3.0	1,154	
Fluoranthene	0	0		0	40	40.0	15,392	
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	770	
Hexachlorocyclopentadiene	0	0		0	1	1.0	385	
Hexachloroethane	0	0		0	12	12.0	4,617	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	808,060	
Naphthalene	0	0		0	43	43.0	16,546	
Nitrobenzene	0	0		0	810	810	311,680	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	1,308,287	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	22,703	
Phenanthrene	0	0		0	1	1.0	385	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	10,005	

☑ ***THH*** CCT (min): 720 PMF: 0.312 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	2,155	
Total Arsenic	0	0		0	10	10.0	3,848	

Total Barium	0	0		0	2,400	2,400	923,497	
Total Boron	0	0		0	3,100	3,100	1,192,850	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	1,539	
Dissolved Iron	0	0		0	300	300	115,437	
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	384,790	
Total Mercury	0	0		0	0.050	0.05	19.2	
Total Nickel	0	0		0	610	610	234,722	
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	92.3	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	1,154	
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	38,479	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	2,193	
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	12,698	
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	26,166	
Methyl Bromide	0	0		0	100	100.0	38,479	
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	21,933	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	38,479	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	3,847,904	
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	11,544	

2,4-Dichlorophenol	0	0		0	10	10.0	3,848	
2,4-Dimethylphenol	0	0		0	100	100.0	38,479	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	770	
2,4-Dinitrophenol	0	0		0	10	10.0	3,848	
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	1,539,162	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	26,935	
Anthracene	0	0		0	300	300	115,437	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	76,958	
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	38.5	
2-Chloronaphthalene	0	0		0	800	800	307,832	
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	384,790	
1,3-Dichlorobenzene	0	0		0	7	7.0	2,694	
1,4-Dichlorobenzene	0	0		0	300	300	115,437	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	230,874	
Dimethyl Phthalate	0	0		0	2,000	2,000	769,581	
Di-n-Butyl Phthalate	0	0		0	20	20.0	7,696	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	7,696	
Fluorene	0	0		0	50	50.0	19,240	
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	1,539	
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	13,083	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	3,848	

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	7,696	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	26.9	

☑ *CRL* CCT (min): 720 PMF: 0.424 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 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	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	79.9	
Benzene	0	0		0	0.58	0.58	773	
Bromoform	0	0		0	7	7.0	9,324	
Carbon Tetrachloride	0	0		0	0.4	0.4	533	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	1,066	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	1,265	
1,2-Dichloroethane	0	0		0	9.9	9.9	13,187	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	1,199	

1,3-Dichloropropylene	0	0		0	0.27	0.27	360	
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	26,641	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	266	
Tetrachloroethylene	0	0		0	10	10.0	13,320	
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	733	
Trichloroethylene	0	0		0	0.6	0.6	799	
Vinyl Chloride	0	0		0	0.02	0.02	26.6	
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	40.0	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	1,998	
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	0.13	
Benzo(a)Anthracene	0	0		0	0.001	0.001	1.33	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.13	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	1.33	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	13.3	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	40.0	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	426	
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	160	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.13	
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	66.6	
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	66.6	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	66.6	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	40.0	
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	0.11	
Hexachlorobutadiene	0	0		0	0.01	0.01	13.3	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	133	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	1.33	
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	0.93	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	6.66	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	4,396	
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

☑ ***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 Aluminum	27,110	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	759,090	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	N/A	N/A	Discharge Conc < TQL

Total Cadmium	N/A	N/A	Discharge Conc < TQL
Hexavalent Chromium	589	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	3,434	µg/L	Discharge Conc < TQL
Total Copper	584	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	795	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	115,437	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	1,847,942	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	1,492	µg/L	Discharge Conc < TQL
Total Manganese	384,790	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	19.2	µg/L	Discharge Conc < TQL
Total Nickel	19,285	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	1,920	µg/L	Discharge Conc < TQL
Total Silver	178	µg/L	Discharge Conc < TQL
Total Thallium	92.3	µg/L	Discharge Conc < TQL
Total Zinc	4,926	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	108	µg/L	Discharge Conc < TQL
Acrylonitrile	79.9	µg/L	Discharge Conc < TQL
Benzene	773	µg/L	Discharge Conc < TQL
Bromoform	9,324	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	533	µg/L	Discharge Conc < TQL
Chlorobenzene	38,479	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	1,066	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	650,649	µg/L	Discharge Conc < TQL
Chloroform	2,193	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	1,265	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	13,187	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	12,698	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	1,199	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	360	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	26,166	µg/L	Discharge Conc < TQL
Methyl Bromide	19,881	µg/L	Discharge Conc < TQL
Methyl Chloride	1,012,120	µg/L	Discharge Conc < TQL
Methylene Chloride	26,641	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	266	µg/L	Discharge Conc < TQL
Tetrachloroethylene	13,320	µg/L	Discharge Conc < TQL
Toluene	21,933	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	38,479	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	108,441	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	733	µg/L	Discharge Conc < TQL

Trichloroethylene	799	µg/L	Discharge Conc < TQL
Vinyl Chloride	26.6	µg/L	Discharge Conc < TQL
2-Chlorophenol	11,544	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	3,848	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	23,857	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	770	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	3,848	µg/L	Discharge Conc < TQL
2-Nitrophenol	289,177	µg/L	Discharge Conc < TQL
4-Nitrophenol	83,138	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	5,784	µg/L	Discharge Conc < TQL
Pentachlorophenol	40.0	µg/L	Discharge Conc < TQL
Phenol	1,539,162	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	1,998	µg/L	Discharge Conc < TQL
Acenaphthene	3,000	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	115,437	µg/L	Discharge Conc < TQL
Benzidine	0.13	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	1.33	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.13	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	1.33	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	13.3	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	40.0	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	76,958	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	426	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	9,760	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	38.5	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	307,832	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	160	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.13	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	29,641	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	2,694	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	26,387	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	66.6	µg/L	Discharge Conc < TQL
Diethyl Phthalate	144,589	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	90,368	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	3,976	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	66.6	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	66.6	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	40.0	µg/L	Discharge Conc < TQL
Fluoranthene	7,229	µg/L	Discharge Conc < TQL
Fluorene	19,240	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.11	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	13.3	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	181	µg/L	Discharge Conc < TQL
Hexachloroethane	133	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	1.33	µg/L	Discharge Conc < TQL
Isophorone	13,083	µg/L	Discharge Conc < TQL
Naphthalene	5,061	µg/L	Discharge Conc < TQL
Nitrobenzene	3,848	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.93	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	6.66	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	4,396	µg/L	Discharge Conc < TQL
Phenanthrene	181	µg/L	Discharge Conc < TQL
Pyrene	7,696	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	26.9	µg/L	Discharge Conc < TQL

WETT

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.01
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: PWD NE WPCP

Permit No.: PA0026689

Replicate No.	Test Completion Date 11/23/2021 Control	TIWC	Test Completion Date 11/7/2022 Control	TIWC
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11				
12				
13				
14				
15				
Mean	1.000	1.000	1.000	1.000
Std Dev.	0.000	0.000	0.000	0.000
# Replicates	10	10	10	10
T-Test Result				
Deg. of Freedom				
Critical T Value				
Pass or Fail	PASS		PASS	

Replicate No.	Test Completion Date 11/21/2023 Control	TIWC	Test Completion Date 11/12/2024 Control	TIWC
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	0	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	0	1
11				
12				
13				
14				
15				
Mean	0.900	1.000	0.900	1.000
Std Dev.	0.316	0.000	0.316	0.000
# Replicates	10	10	10	10
T-Test Result				
Deg. of Freedom				
Critical T Value				
Pass or Fail	PASS		PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.01
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: PWD NE WPCP

Permit No.: PA0026689

Replicate No.	Test Completion Date 11/22/2021 Control	TIWC	Test Completion Date 11/7/2022 Control	TIWC
1	23	27	27	28
2	25	28	28	25
3	26	27	27	27
4	30	27	24	29
5	30	26	28	28
6	25	28	28	25
7	27	28	26	25
8	26	25	27	2
9	26	26	25	28
10	30	23	25	26
11				
12				
13				
14				
15				
Mean	26.800	26.500	26.500	24.300
Std Dev.	2.440	1.581	1.434	7.973
# Replicates	10	10	10	10
T-Test Result	8.3676		1.7393	
Deg. of Freedom	17		10	
Critical T Value	0.8633		0.8791	
Pass or Fail	PASS		PASS	

Replicate No.	Test Completion Date 11/21/2023 Control	TIWC	Test Completion Date 11/12/2024 Control	TIWC
1	31	28	18	18
2	30	34	15	18
3	24	30	17	18
4	3	3	21	20
5	25	36	24	9
6	28	26	21	15
7	27	30	20	8
8	31	34	17	16
9	25	24	16	29
10	24	32	2	24
11				
12				
13				
14				
15				
Mean	24.800	27.700	17.100	17.500
Std Dev.	8.135	9.452	5.971	6.258
# Replicates	10	10	10	10
T-Test Result	2.5579		1.9210	
Deg. of Freedom	16		16	
Critical T Value	0.8647		0.8647	
Pass or Fail	PASS		PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.01
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: PWD NE WPCP

Permit No.: PA0026689

Replicate No.	Test Completion Date 11/23/2021 Control	TIWC	Test Completion Date 11/8/2022 Control	TIWC
1	1	0.8	1	1
2	1	1	0.7	1
3	0.8	1	1	1
4	0.9	0.5	0.9	1
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Mean	0.925	0.825	0.900	1.000
Std Dev.	0.096	0.236	0.141	0.000
# Replicates	4	4	4	4
T-Test Result	2.4375		9.8225	
Deg. of Freedom	4		3	
Critical T Value	0.7407		0.7649	
Pass or Fail	PASS		PASS	

Replicate No.	Test Completion Date 11/21/2023 Control	TIWC	Test Completion Date 11/21/2024 Control	TIWC
1	0.9	0.8	1	1
2	0.9	0.9	1	0.9
3	0.9	0.9	1	1
4	1	1	1	1
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Mean	0.925	0.900	1.000	0.975
Std Dev.	0.050	0.082	0.000	0.050
# Replicates	4	4	4	4
T-Test Result	9.2948		17.8623	
Deg. of Freedom	4		3	
Critical T Value	0.7407		0.7649	
Pass or Fail	PASS		PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.01
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: PWD NE WPCP

Permit No.: PA0026689

Replicate No.	Test Completion Date 11/23/2021 Control	TIWC	Test Completion Date 11/6/2022 Control	TIWC
1	0.279	0.257	0.323	0.348
2	0.282	0.27	0.247	0.385
3	0.254	0.226	0.29	0.322
4	0.241	0.192	0.297	0.369
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Mean	0.264	0.236	0.289	0.356
Std Dev.	0.020	0.035	0.032	0.027
# Replicates	4	4	4	4
T-Test Result	2.0217		7.7050	
Deg. of Freedom	4		5	
Critical T Value	0.7407		0.7267	
Pass or Fail	PASS		PASS	

Replicate No.	Test Completion Date 11/21/2023 Control	TIWC	Test Completion Date 11/12/2024 Control	TIWC
1	0.275	0.265	0.348	0.358
2	0.302	0.274	0.373	0.295
3	0.289	0.279	0.31	0.401
4	0.288	0.33	0.324	0.336
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Mean	0.289	0.287	0.339	0.348
Std Dev.	0.011	0.029	0.028	0.044
# Replicates	4	4	4	4
T-Test Result	4.6474		3.8262	
Deg. of Freedom	4		4	
Critical T Value	0.7407		0.7407	
Pass or Fail	PASS		PASS	

WET Summary and Evaluation

Facility Name	Ambridge Borough STP
Permit No.	PA027146
Design Flow (MGD)	2.56
Q_{7-10} Flow (cfs)	4800
PMF_a	0.001
PMF_c	0.004

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/23/21	11/7/22	11/21/23	11/12/24
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/22/21	11/7/22	11/21/23	11/12/24
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/23/21	11/8/22	11/21/23	11/21/24
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	11/23/21	11/6/22	11/21/23	11/12/24
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	Chronic
TIWC	17 % Effluent
Dilution Series	4, 9, 17, 59, 100 % Effluent
Permit Limit	None
Permit Limit Species	

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

4800	= Q stream (cfs)	0.5	= CV Daily
2.56	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	386.654	1.3.2.iii	WLA cfc =	376.950
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	144.077	5.1d	LTA_cfc =	219.141

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.635	

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