Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0026883**
Facility Type	**Municipal**	APS ID	**1142903**
Major / Minor	**Major**	Authorization ID	**1536536**

Applicant and Facility Information

Applicant Name	**Aqua PA Wastewater Inc.**	Facility Name	**Beaver Falls STP**
Applicant Address	665 S Dock Street	Facility Address	100 6th Avenue Ext
	Sharon, PA 16146-1835		Beaver Falls, PA 15010-4124
Applicant Contact	Martin Zach	Facility Contact	Joseph Durish
Applicant Phone	(724) 981-1200	Facility Phone	724-843-7184
Client ID	62614	Site ID	246167
Ch 94 Load Status	Not Overloaded	Municipality	Beaver Falls City
Connection Status		County	Beaver
Date Application Received	May 4, 2023	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility
Purpose of Application	Renewal and Transfer of an NPDES Permit		

Summary of Review

The City of Beaver Falls (CBF) originally applied for a renewal of NPDES Permit PA0026883, which authorizes a discharge from the CBF sewage treatment plant (STP). NPDES Permit PA0026883 was previously issued by the Department of Environmental Protection (DEP) on November 1, 2018 and expired on October 31, 2023.

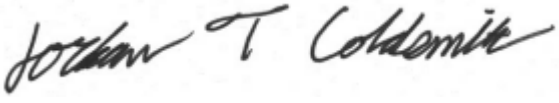
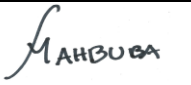
On July 21, 2025, Aqua PA Wastewater Inc. submitted permit transfer documents for Beaver Falls STP and its related WQM permits.

Outfall 001 runs along the Beaver River and discharges upstream of the dam. Outfall 001 is a common outfall that receives flows from the sewage treatment plant (Internal Outfall 101) and a separate pipe that conveys storm water (Internal Outfall 201). For this reason, the permit once again requires the sewage treatment plant effluent be sampled prior to where the storm water pipe connects to the outfall. The relief outfall is identified as 002. The entrance for Outfall 002 is located near the chlorine contact tank. Discharge from Outfall 002 should only occur when the flows exceed the capacity of Outfall 001. Outfall 004 conveys storm water only. The only listed outfall is Outfall 001, which is the only outfall where there are actual discharges to waters of the Commonwealth.

The applicant is currently enrolled in and will continue to use eDMR.

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-

Approve	Deny	Signatures	Date
		 Jordan Coldsmith / Environmental Engineering Specialist	November 18, 2025
X		 Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	January 22, 2026

Summary of Review
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)	4.8
Latitude	40º 44' 5.16"	Longitude	-80º 19' 2.47"
Quad Name	Beaver	Quad Code	40080F3
Wastewater Description:	Sewage Effluent		

Receiving Waters	Beaver River (WWF)	Stream Code	33953
NHD Com ID	134449672	RMI	3.13
Drainage Area	3120	Yield (cfs/mi^2)	0.205
Q_{7-10} Flow (cfs)	640	Q_{7-10} Basis	
Elevation (ft)	1127	Slope (ft/ft)	
Watershed No.	20-B	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN, SOURCE UNKNOWN		
TMDL Status	Final	Name	Beaver River

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	BEAVER FALLS MUNI AUTH		
PWS Waters	Beaver River (WWF)	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	0.1

Changes Since Last Permit Issuance: None

Other Comments: The STP discharges to the Beaver River which has an EPA Approved TMDL and is impaired by PCBs & Chlordane. No WLAs have been developed for this sewage discharge as neither PCBs nor Chlordane is typically found in sewage but instead found in legacy sediments. No additional monitoring requirements for these pollutants will be placed on this facility at this time.

Treatment Facility Summary

Treatment Facility Name: City Of Beaver Falls STP

WQM Permit No.	Issuance Date
0472402	November 3, 1972
0472402-A1	November 5, 1991
0472402-A2	July 30, 1992
0472402-A3	March 16,1996
0472402-A4	March 10, 2010
0472402 A-4 T-1	September 18, 2025

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Rotating Biological Contactors	Gas Chlorine	2.16

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
4.8	9207	Not Overloaded		Landfill

Changes Since Last Permit Issuance: None

Other Comments: Treatment units consist of screening, grit removal, primary settling, oxidation towers, final settling, chlorination, aerobic and anaerobic digestion, belt filter press, and sludge drying beds.

Compliance History

Compliance History

DMR Data for Outfall 101 (from October 1, 2024 to September 30, 2025)

Parameter	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24
Flow (MGD) Average Monthly	1.62	1.495	1.804	2.5	2.8	2.99	2.57	3.68	2.23	2.14	1.98	1.68
Flow (MGD) Daily Maximum	2.6	1.62	2.45	4.06	5.67	8.43	4.4	11.63	4.03	2.94	1.5	2.56
pH (S.U.) Instantaneous Minimum	7.11	6.97	6.98	6.99	6.78	6.81	7.0	7.06	7.08	7.07	6.83	6.89
pH (S.U.) Instantaneous Maximum	7.41	7.36	7.55	7.56	7.45	7.39	7.36	7.51	7.38	7.47	7.49	7.39
DO (mg/L) Instantaneous Minimum	7.17	5.26	4.81	6.3	7.26	7.17	7.63	8.11	7.77	7.56	6.45	5.37
TRC (mg/L) Average Monthly	0.4	0.4	0.4	0.40	0.30	0.30	0.40	0.20	0.40	0.30	0.30	0.40
TRC (mg/L) Instantaneous Maximum	0.84	0.82	0.73	0.59	0.48	0.53	0.58	0.39	0.56	0.53	0.59	0.57
CBOD5 (lbs/day) Average Monthly	64.8	< 66.5	78.1	110.9	182.7	126.1	122.4	247.1	133.5	< 130.7	< 105.0	91.9
CBOD5 (lbs/day) Weekly Average	67.6	80.5	80.8	172.9	409.5	147.9	121.8	466.4	143.1	153.9	120.1	110.0
CBOD5 (mg/L) Average Monthly	5.0	< 5.0	5.3	5.0	7.0	6.0	6.0	8.0	8.0	< 7.0	< 7.0	6.0
CBOD5 (mg/L) Weekly Average	5.3	6.5	5.7	7.3	9.1	7.0	6.0	9.8	9.1	10.4	7.9	7.8
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	2207	1918	1645	1780	1394	1134	2093	2175	1739	1418	2089	1765
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	5050	3778	2797	2762	2510	1746	4760	3748	2405	2171	3669	4804
BOD5 (mg/L) Raw Sewage Influent Average Monthly	168	152	112	86	64	56	101	79.0	99.0	83.0	135	114

TSS (lbs/day) Average Monthly	< 79.4	< 72.6	91.1	178.0	226.3	199.4	270.6	499.9	< 181.5	235.4	< 146.2	< 95.5
TSS (lbs/day) Raw Sewage Influent Average Monthly	6193	1717	1367	1014	1466	783	1803	1564	1686	1571	3469	2234
TSS (lbs/day) Raw Sewage Influent Daily Maximum	27742	4103	3378	2065	5358	1271	6624	3218	5085	5053	18136	5399
TSS (lbs/day) Weekly Average	110.0	< 97.4	127.6	231.9	525.4	324.9	356.2	1032.4	294.7	338.8	211.5	< 118.8
TSS (mg/L) Average Monthly	< 6.0	< 6.0	6.0	9.0	8.0	10.0	13.0	15.0	< 10.0	13.0	< 9.0	< 6.0
TSS (mg/L) Raw Sewage Influent Average Monthly	463	136	94	48	70	39	86	54.0	98	94.0	241	146
TSS (mg/L) Weekly Average	9.0	< 8.0	9.0	11.0	12.0	15.0	17.0	20.0	17.0	17.0	12.0	9.0
Fecal Coliform (No./100 ml) Geometric Mean	< 10	< 7	> 36	155	> 388	> 449	> 165	735	< 17.0	235	< 129	> 32.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	1141	20	> 2420	8664	> 2420	> 2420	> 2420	2420	461	5475	> 2420	> 2420
Total Nitrogen (lbs/day) Annual Average										E		
Total Nitrogen (mg/L) Annual Average										E		
Ammonia (lbs/day) Average Monthly	13	18	18	< 9	17.0	< 12.0	< 20.0	< 49.0	< 25.0	< 31.0	< 31.0	42.0
Ammonia (mg/L) Average Monthly	0.996	1.421	1.279	< 0.42	0.554	< 0.55	< 0.95	< 1.69	< 1.48	< 1.63	< 2.1	3.06
Total Phosphorus (lbs/day) Annual Average										E		
Total Phosphorus (mg/L) Annual Average										E		

Compliance History

Effluent Violations for Outfall 101, from: November 1, 2024 To: September 30, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	05/31/25	Geo Mean	> 388	No./100 ml	200	No./100 ml
Fecal Coliform	03/31/25	Geo Mean	> 165	No./100 ml	2000	No./100 ml
Fecal Coliform	04/30/25	Geo Mean	> 449	No./100 ml	2000	No./100 ml
Fecal Coliform	07/31/25	Geo Mean	> 36	No./100 ml	200	No./100 ml
Fecal Coliform	07/31/25	IMAX	> 2420	No./100 ml	1000	No./100 ml
Fecal Coliform	05/31/25	IMAX	> 2420	No./100 ml	1000	No./100 ml
Fecal Coliform	11/30/24	IMAX	> 2420	No./100 ml	10000	No./100 ml
Fecal Coliform	04/30/25	IMAX	> 2420	No./100 ml	10000	No./100 ml
Fecal Coliform	03/31/25	IMAX	> 2420	No./100 ml	10000	No./100 ml
Fecal Coliform	06/30/25	IMAX	8664	No./100 ml	1000	No./100 ml
Fecal Coliform	09/30/25	IMAX	1141	No./100 ml	1000	No./100 ml

Summary of Inspections:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 4.8
Latitude 40º 44' 3.00" **Longitude** -80º 19' 4.00"
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)

Water Quality-Based Limitations

The discharge was evaluated using WQM7.0 to determine the $CBOD_5$, ammonia nitrogen, and dissolved oxygen parameters. The limits evaluated for DO, CBOD5 and, Ammonia Nitrogen are the same as previously imposed permit limits.

TRC was evaluated using the TRC Spreadsheet. The limits evaluated were found to be the same as the previously imposed limits.

Parameter	Limit (mg/l)	SBC	Model
DO	4	Inst Min.	WQM 7.0
Ammonia-Nitrogen (May 1 – Oct 31)	25.0 50.0	Average Monthly IMAX	WQM 7.0
Ammonia-Nitrogen (Nov 1 – Apr 30)	25.0 50.0	Average Monthly IMAX	WQM 7.0
$CBOD_5$	25.0 50.0	Average Monthly IMAX	WQM 7.0
TRC	0.5 1.6	Average Monthly IMAX	TRC Spreadsheet

Per Department SOP “Establishing Effluent Limitations for Individual Sewage Permits” (BCW-PMT-033), for existing discharges, if WQM modeling results for summer indicates that an average monthly limit of 25 mg/L is acceptable, the application manager will generally establish a year-round monitoring requirement for ammonia-nitrogen, at a minimum. A seasonal multiplier of 3 times the summertime average monthly limit should be established for the winter period.

A weekly monitoring frequency for Ammonia-Nitrogen will again be imposed.

Toxics Management Spreadsheet

The NPDES application indicates that one industrial user process wastewater is served by the STP. The toxic pollutants of concern analyzed in the subject application were again included in DEP's TMS Model to determine if any water quality-based limitations would be required. The results showed that limitations for several toxic pollutants would be needed considering reasonable potential.

Beaver Falls elected to collect additional samples as part of a response on the Pre-draft permit survey for toxic pollutants. The pollutants identified that may require WQBELs were Aluminum, Cadmium, Hexavalent Chromium, Copper, Zinc, Acrolein, Acrylonitrile, Vinyl Chloride, and 1,2,4-Trichlorobenzene.

The results of the pre-draft survey were re-entered into the TMS Model and the results recommended monitoring be established for Aluminum, Hexavalent Chromium, Total Copper, and Total Zinc as the discharge concentration of those parameters is greater than 10% of the governing WQBELs (no RP), respectively.

Due to the downstream proximity of the Public Water Supply (PWS) to the outfall the TMS spreadsheet was reran with the PWS. WMS was not rerun with the PWS due to the flow of the receiving stream. The TMS Spreadsheet recommended monitoring be established for total Phenols.

Monitoring requirements will be imposed.

Full results of our TMS Modeling are included as Attachment 7.

Mass Loading Limitations

Per Department SOP "Establishing Effluent Limitations for Individual Sewage Permits" (BCW-PMT-033), mass loading limits will be established for POTWs for $CBOD_5$, TSS, ammonia nitrogen. Average monthly mass loading limits will be established for $CBOD_5$, TSS, and ammonia nitrogen. Average weekly mass loading limits will be established for $CBOD_5$ and TSS. Mass loading limits will be calculated according to the formula below:

$$average\ annual\ design\ flow\ (MGD) \times concentration\ limit\ \left(\frac{mg}{L}\right) \times 8.34\ (converstion\ factor)$$
$$= mass\ loading\ limit\ (\frac{lbs}{day})$$

Please note that the hydraulic capacity of the facility is used for the average annual design flow number for the purposes of the calculations

The following mass loading limitations were calculated:

Parameter	Average Monthly (lbs/day)	Average Weekly (lbs/day)
$CBOD_5$	1001.4	1502.1
TSS	1201.7	1802.5
Ammonia Nitrogen	**Report**	

Influent Monitoring

Per DEP SOP New and Reissuance Sewage Individual NPDES Permit Applications SOP No. BCW-PMT-002, that for POTWs with design flows greater than 2,000 GPD, non-municipal sewage facilities, and other non-municipal sewage facilities where justified influent BOD_5 and TSS monitoring in the permit using the same frequency and sample type as is used for effluent will be established. The department finds it appropriate to again impose influent BOD_5 and TSS monitoring for this facility

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

No permit limits and/or monitoring requirements have been relaxed in this permit cycle.

Additional Considerations

The STP discharges to the Beaver River which has an EPA Approved TMDL and is impaired by PCBs & Chlordane. No WLAs have been developed for this sewage discharge as neither PCBs nor Chlordane is typically found in sewage but instead found in legacy sediments. No additional monitoring requirements for these pollutants will be placed on this facility at this time.

Sewage discharges will include monitoring, at a minimum, for *E. Coli*, in new and reissued permits, with a monitoring frequency of 1/month for facilities with design flows of >= 1.0 MGD.

An annual sampling frequency for total phosphorus and total nitrogen will again be imposed per 25 PA Code §92a.61.

Monitoring frequency for the proposed effluent limits and toxic pollutant limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, and Table 6-4, Self-Monitoring Requirements for Industrial Dischargers from the Department's "Technical Guidance for the Development and Specification of Effluent Limitations".

Whole Effluent Toxicity (WET)

For Outfall ___, ☐ **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: 0.02.

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
10/29/19	PASS	PASS	PASS	PASS
10/25/20	PASS	PASS	PASS	PASS
11/09/21	PASS	PASS	PASS	PASS
11/15/22	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: N/A

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

Acute Partial Mix Factor (PMFa): **0.045** Chronic Partial Mix Factor (PMFc): **0.311**

1. Determine IWC – Acute (IWCa):

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

[(4.8 MGD x 1.547) / ((640 cfs x 0.045) + (4.8 MGD x 1.547))] x 100 = **20%**

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**

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

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

[(4.8 MGD x 1.547) / ((640 cfs x 0.311) + (4.8 MGD x 1.547))] x 100 = 4**%**

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%, 4%, and 2%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	2/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	1001.4	1502.1	XXX	25.0	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	1201.7	1802.5	XXX	30.0	45.0	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	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	24-Hr Composite
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	XXX	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 Phosphorus	Report Annl Avg	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	24-Hr Composite
Total Aluminum (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Hexavalent Chromium (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/week	Grab
Total Copper (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Zinc (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phenolics	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: N/A

Attachment 1
USGS Discharge Point StreamStat

StreamStats Report

Region ID: PA
Workspace ID: PA20230802155135107000
Clicked Point (Latitude, Longitude): 40.73454, -80.31701
Time: 2023-08-02 11:52:00 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3120	square miles
ELEV	Mean Basin Elevation	1127	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (3120 square miles) Low Flow Region

4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3120	square miles	2.26	1400
ELEV	Mean Basin Elevation	1127	feet	1050	2580

Low-Flow Statistics Disclaimers [99.9 Percent (3120 square miles) Low Flow Region 4]

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 (3120 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	255	ft^3/s
30 Day 2 Year Low Flow	337	ft^3/s
7 Day 10 Year Low Flow	162	ft^3/s
30 Day 10 Year Low Flow	188	ft^3/s
90 Day 10 Year Low Flow	256	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. (http://pubs.usgs.gov/sir/2006/5130/)

Attachment 2
USGS Downstream StreamStat

StreamStats Report

Region ID: PA
Workspace ID: PA20230802160745663000
Clicked Point (Latitude, Longitude): 40.70023, -80.29098
Time: 2023-08-02 12:08:10 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3160	square miles
ELEV	Mean Basin Elevation	1127	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (3150 square miles) Low Flow Region

4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3160	square miles	2.26	1400
ELEV	Mean Basin Elevation	1127	feet	1050	2580

Low-Flow Statistics Disclaimers [99.9 Percent (3150 square miles) Low Flow Region 4]

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 (3150 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	259	ft^3/s
30 Day 2 Year Low Flow	341	ft^3/s
7 Day 10 Year Low Flow	164	ft^3/s
30 Day 10 Year Low Flow	191	ft^3/s
90 Day 10 Year Low Flow	260	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. (http://pubs.usgs.gov/sir/2006/5130/)

Attachment 3
WQM 7.0 Summer 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
20B	33953	BEAVER RIVER	**3.130**	1127.00	3120.00	0.00010	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	0.050	640.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Beaver Falls	PA0026883	4.8000	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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER 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												
3.130	640.00	0.00	640.00	7.4256	0.00010	1.179	505.81	429.18	1.09	0.176	25.00	7.00
Q1-10 Flow												
3.130	409.60	0.00	409.60	7.4256	0.00010	NA	NA	NA	0.85	0.225	25.00	7.00
Q30-10 Flow												
3.130	870.40	0.00	870.40	7.4256	0.00010	NA	NA	NA	1.29	0.148	25.00	7.00

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		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER 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
3.130	Beaver Falls	11.07	50	11.07	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
3.130	Beaver Falls	1.37	25	1.37	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)		
3.13	Beaver Falls	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.130	4.800	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
505.808	1.179	429.175	1.086
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.26	0.165	0.29	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.194	0.570	Tsivoglou	5
Reach Travel Time (days)			
0.176			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.018	2.26	0.28	7.54
0.035	2.25	0.28	7.54
0.053	2.24	0.27	7.54
0.070	2.23	0.27	7.54
0.088	2.22	0.26	7.54
0.105	2.21	0.26	7.54
0.123	2.21	0.25	7.54
0.140	2.20	0.25	7.54
0.158	2.19	0.24	7.54
0.176	2.18	0.24	7.54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER 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)
3.130	Beaver Falls	PA0026883	4.800	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Attachment 4
WQM 7.0 Winter 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
20B	33953	BEAVER RIVER	**3.130**	1127.00	3120.00	0.00010	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	640.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
Beaver Falls	PA0026883	4.8000	0.0000	0.0000	0.000	15.00	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	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER 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												
3.130	640.00	0.00	640.00	7.4256	0.00010	1.179	505.81	429.18	1.09	0.176	5.11	7.00
Q1-10 Flow												
3.130	409.60	0.00	409.60	7.4256	0.00010	NA	NA	NA	0.85	0.225	5.18	7.00
Q30-10 Flow												
3.130	870.40	0.00	870.40	7.4256	0.00010	NA	NA	NA	1.29	0.148	5.08	7.00

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		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER 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
3.130	Beaver Falls	24.1	50	24.1	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
3.130	Beaver Falls	4.36	25	4.36	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)		
3.13	Beaver Falls	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.130	4.800	5.115	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
505.808	1.179	429.175	1.086
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.26	0.179	0.29	0.223
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
12.412	0.356	Tsivoglou	5
Reach Travel Time (days)			
0.176			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.018	2.26	0.29	11.42
0.035	2.26	0.28	11.42
0.053	2.25	0.28	11.42
0.070	2.25	0.28	11.42
0.088	2.25	0.28	11.42
0.105	2.24	0.28	11.42
0.123	2.24	0.28	11.42
0.140	2.24	0.28	11.42
0.158	2.23	0.28	11.42
0.176	2.23	0.28	11.42

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20B	33953	BEAVER 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)
3.130	Beaver Falls	PA0026883	4.800	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Attachment 5
TRC Spreadsheet

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

640	= Q stream (cfs)	0.5	= CV Daily
4.8	= 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 = 27.513	1.3.2.iii	WLA cfc = 26.816
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 10.252	5.1d	LTA_cfc = 15.589

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)

Attachment 6
WET Test Results

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.02
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Beaver Falls WPCP

Permit No.: PA0026883

Test Completion Date: 10/29/2019

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

Test Completion Date: 10/25/2020

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

Test Completion Date: 11/9/2021

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

Test Completion Date: 11/15/2022

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.02
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: Beaver Falls WPCP

Permit No.: PA0026883

Replicate No.	Test Completion Date 10/29/2019 Control	TIWC
1	29	28
2	36	33
3	41	35
4	35	30
5	32	35
6	32	33
7	33	18
8	26	33
9	32	28
10	31	31
11		
12		
13		
14		
15		
Mean	32.700	30.400
Std Dev.	4.057	5.038
# Replicates	10	10

T-Test Result	3.1569
Deg. of Freedom	15
Critical T Value	0.8662
Pass or Fail	**PASS**

Replicate No.	Test Completion Date 10/25/2020 Control	TIWC
1	31	14
2	29	31
3	29	29
4	32	32
5	31	35
6	29	33
7	33	32
8	29	31
9	31	33
10	30	31
11		
12		
13		
14		
15		
Mean	30.400	30.100
Std Dev.	1.430	5.877
# Replicates	10	10

T-Test Result	3.8639
Deg. of Freedom	11
Critical T Value	0.8755
Pass or Fail	**PASS**

Replicate No.	Test Completion Date 11/9/2021 Control	TIWC
1	28	30
2	30	29
3	32	28
4	26	29
5	28	28
6	25	28
7	21	23
8	24	25
9	24	23
10	27	26
11		
12		
13		
14		
15		
Mean	26.500	26.900
Std Dev.	3.206	2.514
# Replicates	10	10

T-Test Result	6.3854
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	**PASS**

Replicate No.	Test Completion Date 11/15/2022 Control	TIWC
1	23	22
2	21	25
3	0	17
4	18	23
5	25	25
6	25	25
7	25	22
8	21	31
9	24	30
10	26	31
11		
12		
13		
14		
15		
Mean	20.800	25.100
Std Dev.	7.714	4.508
# Replicates	10	10

T-Test Result	4.0958
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	**PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.02
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name

Beaver Falls WPCP

Permit No.

PA0026883

Replicate No.	Test Completion Date 10/29/2019 Control	TIWC
1	1	1
2	1	1
3	0.9	1
4	1	0.9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	0.975
Std Dev.	0.050	0.050
# Replicates	4	4

T-Test Result	14.8898
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Replicate No.	Test Completion Date 10/27/2020 Control	TIWC
1	1	0.7
2	1	0.7
3	0.6	1
4	0.8	0.8
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.850	0.800
Std Dev.	0.191	0.141
# Replicates	4	4

T-Test Result	3.5450
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	**PASS**

Replicate No.	Test Completion Date 11/9/2021 Control	TIWC
1	0.9	0.7
2	0.9	1
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.950	0.925
Std Dev.	0.058	0.150
# Replicates	4	4

T-Test Result	5.2410
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	**PASS**

Replicate No.	Test Completion Date 11/15/2022 Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	4	4

T-Test Result	
Deg. of Freedom	
Critical T Value	
Pass or Fail	**PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.02
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: Beaver Falls WPCP

Permit No.: PA0026883

Replicate No.	Test Completion Date 10/29/2019 Control	TIWC
1	0.371	0.325
2	0.341	0.334
3	0.358	0.369
4	0.379	0.326
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.362	0.339
Std Dev.	0.017	0.021
# Replicates	4	4
T-Test Result	5.5262	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 10/27/2020 Control	TIWC
1	0.308	0.342
2	0.299	0.246
3	0.218	0.35
4	0.294	0.364
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.280	0.326
Std Dev.	0.042	0.054
# Replicates	4	4
T-Test Result	3.7223	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 11/9/2021 Control	TIWC
1	0.363	0.286
2	0.303	0.398
3	0.39	0.377
4	0.379	0.388
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.359	0.362
Std Dev.	0.039	0.052
# Replicates	4	4
T-Test Result	3.1486	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date 11/15/2022 Control	TIWC
1	0.363	0.392
2	0.347	0.375
3	0.412	0.443
4	0.43	0.457
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.388	0.417
Std Dev.	0.039	0.039
# Replicates	4	4
T-Test Result	5.1061	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

WET Summary and Evaluation

Facility Name	Beaver Falls WPCP
Permit No.	PA0026883
Design Flow (MGD)	4.8
Q_{7-10} Flow (cfs)	640
PMF_a	0.045
PMF_c	0.311

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/29/19	10/25/20	11/9/21	11/15/22
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/29/19	10/25/20	11/9/21	11/15/22
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/29/19	10/27/20	11/9/21	11/15/22
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	10/29/19	10/27/20	11/9/21	11/15/22
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**4** % Effluent
Dilution Series	**2, 4, 30, 60, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

Attachment 7
TMS Spreadsheet Results

Discharge Information

Instructions | Discharge | Stream

Facility: **Beaver Falls STP** NPDES Permit No.: **PA0026883** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **STP 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
4.8	200	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		610									
	Chloride (PWS)	mg/L		190									
	Bromide	mg/L	<	1.03									
	Sulfate (PWS)	mg/L		89.5									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		1100									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L		4.4									
	Total Barium	µg/L		50									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		720									
	Total Cadmium	µg/L	<	0.113									
	Total Chromium (III)	mg/L		0.00025									
	Hexavalent Chromium	µg/L	<	10									
	Total Cobalt	µg/L		2.1									
	Total Copper	µg/L		27									
	Free Cyanide	µg/L	<	1									
	Total Cyanide	µg/L		11									
	Dissolved Iron	µg/L		75									
	Total Iron	µg/L		630									
	Total Lead	µg/L		1.6									
	Total Manganese	µg/L		320									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		16									
	Total Phenols (Phenolics) (PWS)	µg/L	<	10									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	1									
	Total Thallium	µg/L	<	1									
	Total Zinc	µg/L		65									
	Total Molybdenum	µg/L	<5	1.9									
	Acrolein	µg/L	<	1.9									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2.5									
	Benzene	µg/L	<	1									
	Bromoform	µg/L	<	1									

Group 3	Carbon Tetrachloride	µg/L	<	1										
	Chlorobenzene	µg/L	<	1										
	Chlorodibromomethane	µg/L	<	1										
	Chloroethane	µg/L	<	1										
	2-Chloroethyl Vinyl Ether	µg/L	<	1										
	Chloroform	µg/L		1.7										
	Dichlorobromomethane	µg/L	<	1										
	1,1-Dichloroethane	µg/L	<	1										
	1,2-Dichloroethane	µg/L	<	1										
	1,1-Dichloroethylene	µg/L	<	1										
	1,2-Dichloropropane	µg/L	<	1										
	1,3-Dichloropropylene	µg/L	<	1										
	1,4-Dioxane	µg/L	<	200										
	Ethylbenzene	µg/L	<	1										
	Methyl Bromide	µg/L	<	1										
	Methyl Chloride	µg/L	<	1										
	Methylene Chloride	µg/L	<	1										
	1,1,2,2-Tetrachloroethane	µg/L	<	1										
	Tetrachloroethylene	µg/L	<	1										
	Toluene	µg/L	<	1										
	1,2-trans-Dichloroethylene	µg/L	<	1										
	1,1,1-Trichloroethane	µg/L	<	1										
	1,1,2-Trichloroethane	µg/L	<	1										
	Trichloroethylene	µg/L	<	1										
	Vinyl Chloride	µg/L	<	0.16										
Group 4	2-Chlorophenol	µg/L	<	0.93										
	2,4-Dichlorophenol	µg/L	<	0.1										
	2,4-Dimethylphenol	µg/L	<	0.93										
	4,6-Dinitro-o-Cresol	µg/L	<	0.18										
	2,4-Dinitrophenol	µg/L	<	9.3										
	2-Nitrophenol	µg/L	<	0.93										
	4-Nitrophenol	µg/L	<	4.6										
	p-Chloro-m-Cresol	µg/L	<	0.18										
	Pentachlorophenol	µg/L	<	4.6										
	Phenol	µg/L	<	0.93										
	2,4,6-Trichlorophenol	µg/L	<	0.93										
Group 5	Acenaphthene	µg/L	<	0.18										
	Acenaphthylene	µg/L	<	0.18										
	Anthracene	µg/L	<	0.18										
	Benzidine	µg/L	<	19										
	Benzo(a)Anthracene	µg/L	<	0.18										
	Benzo(a)Pyrene	µg/L	<	0.18										
	3,4-Benzofluoranthene	µg/L	<	0.18										
	Benzo(ghi)Perylene	µg/L	<	0.18										
	Benzo(k)Fluoranthene	µg/L	<	0.18										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.93										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.18										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.18										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	9.3										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.93										
	Butyl Benzyl Phthalate	µg/L	<	0.93										
	2-Chloronaphthalene	µg/L	<	0.18										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.93										
	Chrysene	µg/L	<	0.18										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.18										
	1,2-Dichlorobenzene	µg/L	<	0.93										
	1,3-Dichlorobenzene	µg/L	<	0.93										
	1,4-Dichlorobenzene	µg/L	<	0.93										
	3,3-Dichlorobenzidine	µg/L	<	0.93										
	Diethyl Phthalate	µg/L	<	0.93										
	Dimethyl Phthalate	µg/L	<	0.93										
	Di-n-Butyl Phthalate	µg/L		1.8										
	2,4-Dinitrotoluene	µg/L	<	0.93										

	2,6-Dinitrotoluene	µg/L	<	0.93										
	Di-n-Octyl Phthalate	µg/L	<	0.93										
	1,2-Diphenylhydrazine	µg/L	<	0.93										
	Fluoranthene	µg/L	<	0.18										
	Fluorene	µg/L	<	0.18										
	Hexachlorobenzene	µg/L	<	0.18										
	Hexachlorobutadiene	µg/L	<	0.18										
	Hexachlorocyclopentadiene	µg/L	<	0.93										
	Hexachloroethane	µg/L	<	0.93										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.18										
	Isophorone	µg/L	<	0.93										
	Naphthalene	µg/L	<	0.18										
	Nitrobenzene	µg/L	<	1.9										
	n-Nitrosodimethylamine	µg/L	<	0.93										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.18										
	n-Nitrosodiphenylamine	µg/L	<	0.93										
	Phenanthrene	µg/L	<	0.18										
	Pyrene	µg/L	<	0.18										
	1,2,4-Trichlorobenzene	µg/L	<	0.32										
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Beaver Falls STP, NPDES Permit No. PA0026883, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Beaver 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	033953	3.16	1127	3120	0.001		Yes
End of Reach 1	033953	0.01	1126	3121	0.001	11.952	Yes

$Q_{7\text{-}10}$

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	3.16	0.205										190	7		
End of Reach 1	0.01	0.001													

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	3.16														
End of Reach 1	0.01														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Beaver Falls STP, NPDES Permit No. PA0026883, Outfall 001

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

☑ ***Hydrodynamics***

$Q_{7\text{-}10}$

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
3.16	639.60		639.60	7.426	0.001	1.136	462.102	406.685	1.232	0.156	7467.192
0.01	639.60	18.49	621.111256								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
3.16	2105.49		2105.49	7.426	0.001	1.913	462.102	241.61	2.391	0.081	3474.654
0.01	2105.491	18.49	2087.00								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.045 Analysis Hardness (mg/l): 192.06 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	3,645	
Total Antimony	0	0		0	1,100	1,100	5,347	
Total Arsenic	0	0		0	340	340	1,653	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	102,071	
Total Boron	0	0		0	8,100	8,100	39,370	
Total Cadmium	0	0		0	3.797	4.14	20.1	Chem Translator of 0.917 applied
Total Chromium (III)	0	0		0	972.355	3,077	14,956	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	79.2	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	462	
Total Copper	0	0		0	24.855	25.9	126	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	107	

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	130.403	187	911	Chem Translator of 0.696 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	8.01	Chem Translator of 0.85 applied
Total Nickel	0	0		0	813.293	815	3,961	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	9.884	11.6	56.5	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	316	
Total Zinc	0	0		0	203.707	208	1,012	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	14.6	
Acrylonitrile	0	0		0	650	650	3,159	
Benzene	0	0		0	640	640	3,111	
Bromoform	0	0		0	1,800	1,800	8,749	
Carbon Tetrachloride	0	0		0	2,800	2,800	13,609	
Chlorobenzene	0	0		0	1,200	1,200	5,833	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	87,489	
Chloroform	0	0		0	1,900	1,900	9,235	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	72,908	
1,1-Dichloroethylene	0	0		0	7,500	7,500	36,454	
1,2-Dichloropropane	0	0		0	11,000	11,000	53,466	
1,3-Dichloropropylene	0	0		0	310	310	1,507	
Ethylbenzene	0	0		0	2,900	2,900	14,095	
Methyl Bromide	0	0		0	550	550	2,673	
Methyl Chloride	0	0		0	28,000	28,000	136,094	
Methylene Chloride	0	0		0	12,000	12,000	58,326	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	4,861	
Tetrachloroethylene	0	0		0	700	700	3,402	
Toluene	0	0		0	1,700	1,700	8,263	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	33,051	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	14,582	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	16,526	
Trichloroethylene	0	0		0	2,300	2,300	11,179	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	2,722	
2,4-Dichlorophenol	0	0		0	1,700	1,700	8,263	
2,4-Dimethylphenol	0	0		0	660	660	3,208	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	389	
2,4-Dinitrophenol	0	0		0	660	660	3,208	
2-Nitrophenol	0	0		0	8,000	8,000	38,884	
4-Nitrophenol	0	0		0	2,300	2,300	11,179	
p-Chloro-m-Cresol	0	0		0	160	160	778	
Pentachlorophenol	0	0		0	8.723	8.72	42.4	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	2,236	

Acenaphthene	0	0		0	83	83.0	403	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	1,458	
Benzo(a)Anthracene	0	0		0	0.5	0.5	2.43	
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	145,815	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	21,872	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	1,312	
Butyl Benzyl Phthalate	0	0		0	140	140	680	
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	3,986	
1,3-Dichlorobenzene	0	0		0	350	350	1,701	
1,4-Dichlorobenzene	0	0		0	730	730	3,548	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	19,442	
Dimethyl Phthalate	0	0		0	2,500	2,500	12,151	
Di-n-Butyl Phthalate	0	0		0	110	110	535	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	7,777	
2,6-Dinitrotoluene	0	0		0	990	990	4,812	
1,2-Diphenylhydrazine	0	0		0	15	15.0	72.9	
Fluoranthene	0	0		0	200	200	972	
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	48.6	
Hexachlorocyclopentadiene	0	0		0	5	5.0	24.3	
Hexachloroethane	0	0		0	60	60.0	292	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	48,605	
Naphthalene	0	0		0	140	140	680	
Nitrobenzene	0	0		0	4,000	4,000	19,442	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	82,629	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	1,458	
Phenanthrene	0	0		0	5	5.0	24.3	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	632	

☑ *CFC* CCT (min): 720 PMF: 0.311 Analysis Hardness (mg/l): 190.36 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	

Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	6,104	
Total Arsenic	0	0		0	150	150	4,162	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	113,760	
Total Boron	0	0		0	1,600	1,600	44,394	
Total Cadmium	0	0		0	0.385	0.44	12.1	Chem Translator of 0.882 applied
Total Chromium (III)	0	0		0	125.567	146	4,051	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	288	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	527	
Total Copper	0	0		0	15.524	16.2	449	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	144	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	130,702	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	5.034	7.22	200	Chem Translator of 0.697 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	25.1	Chem Translator of 0.85 applied
Total Nickel	0	0		0	89.656	89.9	2,495	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	138	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	361	
Total Zinc	0	0		0	203.835	207	5,736	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	83.2	
Acrylonitrile	0	0		0	130	130	3,607	
Benzene	0	0		0	130	130	3,607	
Bromoform	0	0		0	370	370	10,266	
Carbon Tetrachloride	0	0		0	560	560	15,538	
Chlorobenzene	0	0		0	240	240	6,659	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	97,112	
Chloroform	0	0		0	390	390	10,821	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	86,014	
1,1-Dichloroethylene	0	0		0	1,500	1,500	41,620	
1,2-Dichloropropane	0	0		0	2,200	2,200	61,042	
1,3-Dichloropropylene	0	0		0	61	61.0	1,693	
Ethylbenzene	0	0		0	580	580	16,093	
Methyl Bromide	0	0		0	110	110	3,052	
Methyl Chloride	0	0		0	5,500	5,500	152,605	
Methylene Chloride	0	0		0	2,400	2,400	66,591	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	5,827	
Tetrachloroethylene	0	0		0	140	140	3,884	
Toluene	0	0		0	330	330	9,156	

1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	38,845	
1,1,1-Trichloroethane	0	0		0	610	610	16,925	
1,1,2-Trichloroethane	0	0		0	680	680	18,868	
Trichloroethylene	0	0		0	450	450	12,486	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	3,052	
2,4-Dichlorophenol	0	0		0	340	340	9,434	
2,4-Dimethylphenol	0	0		0	130	130	3,607	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	444	
2,4-Dinitrophenol	0	0		0	130	130	3,607	
2-Nitrophenol	0	0		0	1,600	1,600	44,394	
4-Nitrophenol	0	0		0	470	470	13,041	
p-Chloro-m-Cresol	0	0		0	500	500	13,873	
Pentachlorophenol	0	0		0	6.693	6.69	186	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	2,525	
Acenaphthene	0	0		0	17	17.0	472	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	1,637	
Benzo(a)Anthracene	0	0		0	0.1	0.1	2.77	
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	166,478	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	25,249	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	1,498	
Butyl Benzyl Phthalate	0	0		0	35	35.0	971	
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	4,439	
1,3-Dichlorobenzene	0	0		0	69	69.0	1,914	
1,4-Dichlorobenzene	0	0		0	150	150	4,162	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	22,197	
Dimethyl Phthalate	0	0		0	500	500	13,873	
Di-n-Butyl Phthalate	0	0		0	21	21.0	583	
2,4-Dinitrotoluene	0	0		0	320	320	8,879	
2,6-Dinitrotoluene	0	0		0	200	200	5,549	
1,2-Diphenylhydrazine	0	0		0	3	3.0	83.2	
Fluoranthene	0	0		0	40	40.0	1,110	
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	55.5	

Hexachlorocyclopentadiene	0	0		0	1	1.0	27.7	
Hexachloroethane	0	0		0	12	12.0	333	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	58,267	
Naphthalene	0	0		0	43	43.0	1,193	
Nitrobenzene	0	0		0	810	810	22,475	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	94,338	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	1,637	
Phenanthrene	0	0		0	1	1.0	27.7	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	721	

☑ ***THH*** CCT (min): ###### THH PMF: 0.311 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 0.1736

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	7,975,051	WQC applied at RMI 0.01 with a design stream flow of 639.601 cfs
Chloride (PWS)	0	0		0	250,000	250,000	3,987,526	WQC applied at RMI 0.01 with a design stream flow of 639.601 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	3,987,526	WQC applied at RMI 0.01 with a design stream flow of 639.601 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	89.3	THH WQC applied at PWS at RMI 0.01
Total Arsenic	0	0		0	10	10.0	160	THH WQC applied at PWS at RMI 0.01
Total Barium	0	0		0	2,400	2,400	38,280	THH WQC applied at PWS at RMI 0.01
Total Boron	0	0		0	3,100	3,100	49,445	THH WQC applied at PWS at RMI 0.01
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	63.8	THH WQC applied at PWS at RMI 0.01
Dissolved Iron	0	0		0	300	300	4,785	THH WQC applied at PWS at RMI 0.01
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	15,950	THH WQC applied at PWS at RMI 0.01
Total Mercury	0	0		0	0.050	0.05	0.8	THH WQC applied at PWS at RMI 0.01
Total Nickel	0	0		0	610	610	9,730	THH WQC applied at PWS at RMI 0.01
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	79.8	WQC applied at RMI 0.01 with a design stream flow of 639.601 cfs
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	3.83	THH WQC applied at PWS at RMI 0.01
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	47.9	THH WQC applied at PWS at RMI 0.01
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	1,595	THH WQC applied at PWS at RMI 0.01
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	90.9	THH WQC applied at PWS at RMI 0.01
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	526	THH WQC applied at PWS at RMI 0.01
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	1,085	THH WQC applied at PWS at RMI 0.01
Methyl Bromide	0	0		0	100	100.0	1,595	THH WQC applied at PWS at RMI 0.01
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	909	THH WQC applied at PWS at RMI 0.01
1,2-trans-Dichloroethylene	0	0		0	100	100.0	1,595	THH WQC applied at PWS at RMI 0.01
1,1,1-Trichloroethane	0	0		0	10,000	10,000	159,501	THH WQC applied at PWS at RMI 0.01
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	479	THH WQC applied at PWS at RMI 0.01
2,4-Dichlorophenol	0	0		0	10	10.0	160	THH WQC applied at PWS at RMI 0.01
2,4-Dimethylphenol	0	0		0	100	100.0	1,595	THH WQC applied at PWS at RMI 0.01
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	31.9	THH WQC applied at PWS at RMI 0.01
2,4-Dinitrophenol	0	0		0	10	10.0	160	THH WQC applied at PWS at RMI 0.01
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	63,800	THH WQC applied at PWS at RMI 0.01
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	1,117	THH WQC applied at PWS at RMI 0.01
Anthracene	0	0		0	300	300	4,785	THH WQC applied at PWS at RMI 0.01
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	3,190	THH WQC applied at PWS at RMI 0.01
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	1.6	THH WQC applied at PWS at RMI 0.01
2-Chloronaphthalene	0	0		0	800	800	12,760	THH WQC applied at PWS at RMI 0.01
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	15,950	THH WQC applied at PWS at RMI 0.01
1,3-Dichlorobenzene	0	0		0	7	7.0	112	THH WQC applied at PWS at RMI 0.01
1,4-Dichlorobenzene	0	0		0	300	300	4,785	THH WQC applied at PWS at RMI 0.01
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	9,570	THH WQC applied at PWS at RMI 0.01
Dimethyl Phthalate	0	0		0	2,000	2,000	31,900	THH WQC applied at PWS at RMI 0.01
Di-n-Butyl Phthalate	0	0		0	20	20.0	319	THH WQC applied at PWS at RMI 0.01
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	319	THH WQC applied at PWS at RMI 0.01
Fluorene	0	0		0	50	50.0	798	THH WQC applied at PWS at RMI 0.01
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	63.8	THH WQC applied at PWS at RMI 0.01
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	542	THH WQC applied at PWS at RMI 0.01
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	160	THH WQC applied at PWS at RMI 0.01
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	319	THH WQC applied at PWS at RMI 0.01
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	1.12	THH WQC applied at PWS at RMI 0.01

☑ *CRL* CCT (min): 720 PMF: 0.455 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	

Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	7.8	
Benzene	0	0		0	0.58	0.58	75.4	
Bromoform	0	0		0	7	7.0	911	
Carbon Tetrachloride	0	0		0	0.4	0.4	52.0	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	104	
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	124	
1,2-Dichloroethane	0	0		0	9.9	9.9	1,288	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	117	
1,3-Dichloropropylene	0	0		0	0.27	0.27	35.1	
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	2,601	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	26.0	
Tetrachloroethylene	0	0		0	10	10.0	1,301	
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	71.5	
Trichloroethylene	0	0		0	0.6	0.6	78.0	
Vinyl Chloride	0	0		0	0.02	0.02	2.6	
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	3.9	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	195	
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	0.013	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.13	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.013	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.13	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	1.3	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	3.9	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	41.6	
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	15.6	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.013	
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	6.5	
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	6.5	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	6.5	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	3.9	
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	0.01	
Hexachlorobutadiene	0	0		0	0.01	0.01	1.3	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	13.0	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.13	
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	0.091	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.65	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	429	

Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	2,337	AFC	Discharge Conc > 10% WQBEL (no RP)
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	50.8	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	80.7	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Phenols (Phenolics) (PWS)	Report	Report	Report	Report	Report	µg/L	79.8	THH-PWS	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	649	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)	7,975	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	3,988	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	3,988	mg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	160	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	38,280	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	25,235	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	12.1	µg/L	Discharge Conc < TQL
Total Chromium (III)	4.05	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	296	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	63.8	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	4,785	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	130,702	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	200	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	15,950	µg/L	Discharge Conc ≤ 10% WQBEL

Total Mercury	0.8	µg/L	Discharge Conc < TQL
Total Nickel	2,495	µg/L	Discharge Conc ≤ 10% WQBEL
Total Selenium	138	µg/L	Discharge Conc < TQL
Total Silver	36.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	3.83	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	9.35	µg/L	Discharge Conc < TQL
Acrylonitrile	7.8	µg/L	Discharge Conc < TQL
Benzene	75.4	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	911	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	52.0	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	1,595	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	104	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	56,077	µg/L	Discharge Conc < TQL
Chloroform	90.9	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	124	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	1,288	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	526	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	117	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	35.1	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	1,085	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	1,595	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	87,231	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	2,601	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	26.0	µg/L	Discharge Conc ≤ 25% WQBEL
Tetrachloroethylene	1,301	µg/L	Discharge Conc ≤ 25% WQBEL
Toluene	909	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	1,595	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	9,346	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	71.5	µg/L	Discharge Conc ≤ 25% WQBEL
Trichloroethylene	78.0	µg/L	Discharge Conc ≤ 25% WQBEL
Vinyl Chloride	2.6	µg/L	Discharge Conc < TQL
2-Chlorophenol	479	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	160	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	1,595	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	31.9	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	160	µg/L	Discharge Conc < TQL
2-Nitrophenol	24,923	µg/L	Discharge Conc < TQL
4-Nitrophenol	7,165	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	498	µg/L	Discharge Conc < TQL
Pentachlorophenol	3.9	µg/L	Discharge Conc < TQL
Phenol	63,800	µg/L	Discharge Conc < TQL

2,4,6-Trichlorophenol	195	µg/L	Discharge Conc < TQL
Acenaphthene	259	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	4,785	µg/L	Discharge Conc < TQL
Benzidine	0.013	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.13	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.013	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.13	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	1.3	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	3.9	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	3,190	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	41.6	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	841	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	1.6	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	12,760	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	15.6	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.013	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	2,555	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichlorobenzene	112	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dichlorobenzene	2,274	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	6.5	µg/L	Discharge Conc < TQL
Diethyl Phthalate	9,570	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	7,788	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	319	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	6.5	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	6.5	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	3.9	µg/L	Discharge Conc < TQL
Fluoranthene	319	µg/L	Discharge Conc < TQL
Fluorene	798	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.01	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	1.3	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	15.6	µg/L	Discharge Conc < TQL
Hexachloroethane	13.0	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.13	µg/L	Discharge Conc < TQL
Isophorone	542	µg/L	Discharge Conc < TQL
Naphthalene	436	µg/L	Discharge Conc < TQL
Nitrobenzene	160	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.091	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.65	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	429	µg/L	Discharge Conc < TQL
Phenanthrene	15.6	µg/L	Discharge Conc < TQL

Pyrene	319	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	1.12	µg/L	Discharge Conc < TQL