Pennsylvania Department of Environmental Protection

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0021181**
Facility Type	**Municipal**	APS ID	**1130438**
Major / Minor	**Major**	Authorization ID	**1515119**

Applicant and Facility Information

Applicant Name	**Bucks County Water & Sewer Authority**	Facility Name	**BCWSA Green St STP**
Applicant Address	1275 Almshouse Road	Facility Address	360 Green Street
	Warrington, PA 18976-1209		Doylestown, PA 18901
Applicant Contact	John Butler	Facility Contact	Len Hughes
Applicant Phone	(215) 343-2538	Facility Phone	(215) 348-9193
Client ID	93895	Site ID	462760
Ch 94 Load Status	Projected Hydraulic and Organic Overload	Municipality	Doylestown Borough
Connection Status	Self-Imposed Connection Prohibition	County	Bucks
Date Application Received	January 27, 2025	EPA Waived?	No
Date Application Accepted		If No, Reason	Major
Purpose of Application	Renewal		

Summary of Review

Permittee requests renewal of NPDES permit to discharge an average annual design flow of 1.2 mgd of treated sewage effluent from Green Street STP, through Outfall 001, to an unnamed tributary to Neshaminy Creek. The rated hydraulic capacity of the plant (maximum monthly average flow) is 1.5 mgd. A maximum of 0.2 mgd of the permitted flow can be diverted through Outfall 002. The discharge at 002 flows to ponds and is used only when needed to irrigate a golf course (The Doylestown Country Club). Both flows are metered separately, Samples, however, are collected before the meters and reported for both outfalls. Site stormwater discharges through Outfalls 003 and 004.

The WWTP consists of two treatment trains running in parallel. Both trains utilize activated sludge treatment and include the grit removal tank, wet bed air scrubber, and bar screen filtration before wastewater settles in primary clarifiers. The wastewater is separated in two trains from the primary clarifiers where 60% of wastewater goes through a vertical loop reactor and 40% goes through A2O-3 tank. The wastewater is then processed in three (3) final clarifiers and the flows from both trains are then combined and disinfected with ultraviolet (UV) light prior to discharge via Outfall 001 and Outfall 002 to unnamed tributary to Neshaminy Creek

Alum is added to the system at the end of the aeration zone in the ASU for Phosphorous removal, prior to discharge into the clarifiers. Solid wastes generated are sent to Harvey Avenue wastewater treatment plant where sludge digestion and dewatering takes place

Water quality modeling is performed using Department's WQM. No changes to assumptions, flows, etc., so effluent limits remain unchanged for CBOD5, NH3-N, and DO.

Current limit for phosphorus, Nitrate-Nitrite as N and Total Kjeldahl Nitrogen remain unchanged for this renewal. UV is used for disinfection.

Approve	Deny	Signatures	Date
x		*Vasantha* Vasantha Palakurti / Environmental Engineering Specialist	May 8, 2025
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	05/08/2025

Summary of Review

Monitoring requirement of E.coli has been added in this permit renewal as per the revised SOP for Clean Water Program. Establishing Effluent Limitations for Individual Sewage Permits SOP No. BCW-PMT-033, for Outfall 001 & 002.

Quarterly Monitoring of PFOA, PFOS, HFPO-DA, and PFBS has been added as per the revised SOP and based on the sample results provided in the application.

WQBEL calculated by Toxic Management Spreadsheet (TMS) recommended monitor for Total Zinc, Total Aluminum and Dissolved Iron. Once a quarter Monitoring has been added for all these parameters.

Based on the DMR data and current TMS, concentrations of Cyanide Free, Hexachlorobutadiene, Mercury and Cadmium are consistently low than WQBEL, therefore, it is determined that the limit is not required and changed to quarterly monitor only for this permit renewal.

Outfalls 003 & 004:
There are changes to the monitoring requirements for the outfalls 003 & 004 in this renewal.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.2
Latitude	40º 18' 01"	Longitude	-75º 7' 22"
Quad Name		Quad Code	1645
Wastewater Description:	Municipal Sewage Effluent		
Receiving Waters	Unnamed Tributary to Neshaminy Creek (WWF, MF)	Stream Code	02721
NHD Com ID	25475588	RMI	1.5
Drainage Area	2.57	Yield (cfs/mi^2)	0.07 cfsm
Q_{7-10} Flow (cfs)	0.18	Q_{7-10} Basis	Previous WQPR
Elevation (ft)	240	Slope (ft/ft)	0.0075
Watershed No.	2-F	Chapter 93 Class.	WWF, MF
Existing Use	None	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, NUTRIENTS		
Source(s) of Impairment	MUNICIPAL POINT SOURCE DISCHARGES, URBAN RUNOFF/STORM SEWERS		
TMDL Status	-	Name	Neshaminy Creek

Additional outfalls:
Outfall 002 – Located approximately 0.3 mi. upstream of Outfall 001. Up to 0.2 mgd of the total permitted flow of 1.2 mgd can be diverted through Outfall 002 for irrigation in summer.
Outfall 003 – Stormwater
Outfall 004 – Stormwater

Compliance History

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

Parameter	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24
Flow (MGD) Average Monthly	0.713	0.473	0.559	0.671	0.701	0.724	0.851	0.968	1.299	1.255	1.041	1.286
Flow (MGD) Weekly Average	0.734	0.490	0.672	0.681	0.812	0.779	0.901	1.004	1.577	1.296	1.083	1.528
pH (S.U.) Instantaneous Minimum	7.1	6.1	6.6	6.8	6.6	6.5	6.62	6.92	6.20	6.77	6.12	6.27
pH (S.U.) Instantaneous Maximum	8.2	7.8	7.9	7.8	7.6	7.8	7.57	7.58	7.55	7.94	7.83	7.85
DO (mg/L) Instantaneous Minimum	6.2	6.3	6.3	6.6	6.1	6.3	6.20	6.94	6.16	7.52	8.36	6.60
DO (mg/L) Average Monthly	8.14	7.14	7.17	7.18	6.74	7.14	7.68	7.98	8.11	9.00	9.43	8.79
CBOD5 (lbs/day) Average Monthly	< 16	20	< 12	< 12	< 15	< 12	< 19.0	< 23.5	< 25.9	39.0	33.0	< 32.1
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	977	828	626	769	841	938	938.8	884.4	814.3	753.9	730.0	< 32.1
CBOD5 (lbs/day) Weekly Average	21	26	20	< 12	< 19	14	31.2	34.9	< 32.2	48.6	45.0	< 45.7
CBOD5 (mg/L) Average Monthly	< 2.6	5.1	< 2.7	< 2.0	< 2.4	< 2.1	< 2.6	< 2.9	< 2.3	3.8	3.9	< 3.0
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	197	196	141	163	159	167.2	148.3	123.5	79.6	79.8	95.9	< 3.0
CBOD5 (mg/L) Weekly Average	3.8	6.1	5.1	< 2.0	< 3.3	2.4	4.0	4.0	< 2.5	4.6	5.5	4.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1088	991	706	866	1000	1022	1053.4	1005.7	1054.6	1042.0	1210.4	989.5

BOD5 (mg/L) Raw Sewage Influent Average Monthly	220	236	159	183	187	182	166.4	140.3	100.0	109.7	158.3	102.3
TSS (lbs/day) Average Monthly	< 20	57	20	< 24	58	57	< 32.1	43.0	119.1	80.8	91.7	114.9
TSS (lbs/day) Raw Sewage Influent Average Monthly	697	686	359	588	631	870	700.3	613.3	683.4	565.1	702.7	735.3
TSS (lbs/day) Weekly Average	30	83	26	51	103	129	42.1	67.4	206.4	139.4	125.1	161.7
TSS (mg/L) Average Monthly	< 3.3	14.4	4.6	< 4.0	9.4	9.8	< 4.4	5.3	9.9	7.8	10.8	10.4
TSS (mg/L) Raw Sewage Influent Average Monthly	136	163	81	125	118	155	112.0	85.3	67.1	59.5	92.3	73.5
TSS (mg/L) Weekly Average	5.5	20.0	6.5	8.5	15.5	21.5	6.0	8.0	17.0	13.5	14.5	14.5
Total Dissolved Solids (mg/L) Daily Maximum	691			612			482			443		
Fecal Coliform (No./100 ml) Geometric Mean	< 3	< 5	< 5	< 7.5	13.5	< 5.2	< 3.9	< 3.2	< 3.8	< 3.1	< 4.4	< 7.1
Fecal Coliform (No./100 ml) Instantaneous Maximum	7	16	18	51	27	18	13	8	27	8	18	38
UV Intensity (mW/cm²) Instantaneous Minimum	4.06	4.89	4.95	4.63	4.28	4.29	4.34	4.39	4.44	4.18	4.21	4.23
Nitrate-Nitrite (lbs/day) Average Monthly	< 29	< 21	< 18.7	< 24.6	< 25.0	< 22.4	< 23.67	< 20.47	< 42.52	< 60.27	< 55.82	< 63.75
Nitrate-Nitrite (mg/L) Average Monthly	< 4.84	< 5.36	< 4.2	< 4.3	< 4.1	< 3.9	< 3.17	< 2.54	< 3.53	< 5.85	< 6.63	< 6.02
Ammonia (lbs/day) Average Monthly	< 3.6	16.2	3.7	2.8	0.6	0.3	< 3.18	< 1.04	3.00	1.61	2.06	< 3.68
Ammonia (mg/L) Average Monthly	< 0.7	4.2	< 0.8	0.5	0.1	0.1	< 0.47	< 0.13	0.30	0.15	0.24	< 0.36
TKN (lbs/day) Average Monthly	< 9	21	< 7	7	10	< 6	9.38	7.66	20.80	< 15.53	18.72	< 16.18
TKN (mg/L) Average Monthly	< 1.54	5.42	< 1.52	1.28	1.72	< 0.99	1.32	0.95	1.74	< 1.52	2.21	< 1.52

Total Phosphorus (lbs/day) Average Monthly	3.4	1.7	1.0	1.4	3.3	2.3	0.94	1.04	4.50	3.78	2.80	3.27
Total Phosphorus (mg/L) Average Monthly	0.6	0.4	0.21	0.25	0.54	0.42	0.13	0.13	0.36	0.37	0.33	0.30
Total Cadmium (mg/L) Daily Maximum	< 0.005			< 0.005			< 0.005			< 0.005		
Total Copper (mg/L) Average Monthly	< 0.011	0.038	< 0.013	< 0.011	0.027	< 0.018	< 0.010	< 0.012	0.020	0.019	0.018	< 0.015
Total Copper (mg/L) Daily Maximum	0.019	0.117	0.018	0.014	0.048	0.034	0.011	0.015	0.041	0.025	0.022	0.027
Free Cyanide (mg/L) Average Monthly	< 0.0011	< 0.0010	< 0.0010	< 0.0010	< 0.0011	< 0.0010	< 0.0010	< 0.0010	< 0.0011	< 0.0011	< 0.0010	< 0.0010
Free Cyanide (mg/L) Daily Maximum	0.002	0.001	0.001	0.001	0.002	0.001	0.001	< 0.001	0.002	0.002	0.001	0.001
Total Mercury (mg/L) Average Monthly	< 0.00010	< 0.0011	< 0.00060	< 0.00007	< 0.00007	< 0.00008	< 0.00007	< 0.00079	< 0.00007	< 0.00007	< 0.00007	< 0.00008
Total Mercury (mg/L) Daily Maximum	0.0002	0.0038	0.0023	< 0.00009	0.00008	0.0001	< 0.00007	0.0045	0.0001	< 0.00007	< 0.00007	< 0.00008
Total Zinc (mg/L) Daily Maximum	0.049			0.047			0.050			0.041		
Hexachloro-butadiene (mg/L) Average Monthly	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Hexachloro-butadiene (mg/L) Daily Maximum	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum	1.1			1.1			1.1			1.0		
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum	1.1			1.1			1.1			1.0		
Chronic WET - Pimephales Survival (TUc) Daily Maximum	1.1			1.1			1.1			1.0		
Chronic WET - Pimephales Growth (TUc) Daily Maximum	1.1			1.1			1.1			1.0		

DMR Data for Outfall 002 (from January 1, 2024 to December 31, 2024)

Parameter	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24
Flow (MGD) Average Monthly	0.116	0.178	0.198		0.1803	0.19141						
Flow (MGD) Weekly Average	0.116	0.189	0.215		0.1072	0.23533						
pH (S.U.) Instantaneous Minimum	7.1	6.1	6.6		6.6	6.5						
pH (S.U.) Instantaneous Maximum	8.2	7.8	7.9		7.6	7.8						
DO (mg/L) Instantaneous Minimum	6.2	6.3	6.3		6.1	6.3						
DO (mg/L) Average Monthly	8.14	7.14	7.17		6.74	7.14						
CBOD5 (lbs/day) Average Monthly	GG	8	< 5		GG	< 3						
CBOD5 (lbs/day) Weekly Average	GG	10	8		GG	< 4						
CBOD5 (mg/L) Average Monthly	< 2.6	5.1	< 2.7		< 2.4	< 2.1						
CBOD5 (mg/L) Weekly Average	3.8	6.1	5.1		< 3.3	2.4						
TSS (lbs/day) Average Monthly	GG	22	8		GG	13						
TSS (lbs/day) Weekly Average	GG	33	11		GG	19						
TSS (mg/L) Average Monthly	< 3.3	14.4	4.6		9.4	9.8						
TSS (mg/L) Weekly Average	5.5	20.0	6.5		15.5	21.5						
Total Dissolved Solids (mg/L) Daily Maximum	691			GG								
Fecal Coliform (No./100 ml) Geometric Mean	< 3	< 5	< 5		13	< 5						

Fecal Coliform (No./100 ml) Instantaneous Maximum	7	16	18		27	18						
UV Intensity (mW/cm²) Instantaneous Minimum	4.06	4.89	4.95		4.28	4.29						
Nitrate-Nitrite (lbs/day) Average Monthly	GG	< 8	< 8.0		GG	< 7.3						
Nitrate-Nitrite (mg/L) Average Monthly	< 4.84	< 5.36	< 4.2		< 4.1	< 3.9						
Ammonia (lbs/day) Average Monthly	GG	6.2	< 1.2		GG	0.08						
Ammonia (mg/L) Average Monthly	< 0.7	4.2	< 0.8		0.1	0.1						
TKN (lbs/day) Average Monthly	GG	8	< 2		GG	< 2						
TKN (mg/L) Average Monthly	< 1.54	5.42	< 1.52		1.72	< 0.99						
Total Phosphorus (lbs/day) Average Monthly	GG	0.6	0.3		GG	1.0						
Total Phosphorus (mg/L) Average Monthly	0.6	0.4	0.21		0.54	0.42						

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.2
Latitude 40º 17' 36.21" **Longitude** -75º 7' 27.49"
Wastewater Description: Effluent

Technology-Based Limitations

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

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

The limits for conventional parameters remain unchanged from previous water quality protection report.

DA = 2.57 mi.2
Q7-10 = 0.18 cfs

Water quality modeling was performed using Department's DO model, WQM7. No changes to assumptions, flows, etc., so effluent limits remain unchanged for CBOD5, NH3-N, and DO.

Total Phosphorus average monthly limit and instantaneous maximum will continue in this permit renewal with seasonal limits and average monthly mass units.

Nitrate-Nitrite, TKN, Total, and UV Transmittance monitoring will continue in this permit renewal.

Total Nitrogen (TN) reporting requirement is added in this permit renewal. TN is the sum of Nitrate-Nitrite and TKN.

E.coli report only requirement has been added in the permit as per the revised SOP for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits SOP No. BCW-PMT-033.

Water Quality-Based Limitations

The toxic modeling was run to determine the WQBEL for all parameters using an in-stream hardness of 100-mg/l and a discharge hardness of 210-mg/l. For a permitted flow of 1.2-MGD, the model calculated the following:

The following limitations were determined through water quality modeling (output files attached):

Total Copper limit without site specific criteria modifier with a discharge hardness of 210 mg/l

	Mass Limits		Concentration Limits						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.19	0.3	18.9	29.5	47.3	µg/L	18.9	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	342	THH	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	212	AFC	Discharge Conc > 10% WQBEL (no RP)

Total Copper limit with site specific criteria modifier of 2.086 with a discharge hardness of 210 mg/l

	Mass Limits		Concentration Limits						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	39.5	CFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	342	THH	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	212	AFC	Discharge Conc > 10% WQBEL (no RP)

Total Copper:

During the previous permit renewal, a copper limit of 0.036 mg/L was established based on a discharge hardness of 186 mg/L and a site-specific copper criterion developed using the criteria recalculation during the 2000 permit renewal.

As it was discussed and agreed by both USEPA and PADEP, the facility with existing copper monitoring requirements based on past WER site specific study, should be continued in this renewal, with the condition to conduct new site-specific study for cooper using BLM and submit the results with next renewal application if seeking for benefit of site-specific criteria modifier.

Therefore, In this renewal, the permittee was given time to conduct a new site-specific data collection and evaluation study using the Biotic Ligand Model (BLM), consistent with updated federal aquatic life criteria.

If the permittee elects not to proceed with the development of site-specific criteria, a copper limit of 0.019 mg/L—or the applicable limit at that time—will be imposed in the next permit term based on the limit derived from Toxics Management data without the use of a criteria modifier and updated hydrological and watershed characteristics, such as the Q7-10 low flow statistic and drainage area.

TMS PA0021181_Without

TMS PA0021181_With Cri

Total Hardness:
Total hardness is added as once a quarter monitoring for this renewal.

Total Aluminum:
Alum is used in the treatment process for the removal of phosphorus. For a permitted flow of 1.2-MGD, the level of detection for Aluminum is greater than 10% WQBEL but less than 50%. Therefore “Report only” has been proposed once a quarter for this renewal.

Dissolved Iron:
For a permitted flow of 1.2-MGD, the level of detection for Dissolved Iron is greater than 10% WQBEL but less than 50%. Therefore “Report only” has been proposed once a quarter for this renewal.

Total Zinc:
Effluent concentrations in the application and the one-year DMR average are reported as 0.037 mg/L. TMS suggests Report only to be continued in this renewal.

PFOA, PFOS, HFPO-DA, and PFBS:
As per the revised SOP and based on the sample results provided in the application, PFOA, PFOS, HFPO-DA, and PFBS are added as quarterly monitoring for this renewal. Permittee may cease monitoring for PFOA, PFOS, HFPO-DA, and PFBS, when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed.

Anti-Backsliding:

Cadmium, Cyanide Free, Hexachlorobutadiene, Mercury:
Limits for cyanide (free), hexachlorobutadiene, and mercury have been eliminated and changed to monitor only, as discharge concentrations for these parameters are significantly lower than regulatory criteria. Previously, PADEP implemented monitoring and limits based on the PENTOX model. However, a revised toxics model (TMS) and five years of data indicate no reasonable potential for requiring continued limits.
Therefore, it is recommended that existing monitoring requirements for cadmium and limits for cyanide (free), hexachlorobutadiene, and mercury be changed to once a quarter monitor only for this renewal. The data will be reviewed during the next permit renewal to determine if a limit or monitoring is needed.
This decision is justified under the anti-backsliding prohibition exception outlined in 40 CFR 122.44(l)(2)(i)(B)(1) and CWA §402(o)(2).

Whole Effluent Toxicity (WET)

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

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

The dilution series used for the tests was: 100%, 96%, 91%, 46%, and 23%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 91.

Summary of Four Most Recent Test Results

WET Summary and Evaluation

Facility Name	Green St.
Permit No.	PA0021181
Design Flow (MGD)	1.2
Q_{7-10} Flow (cfs)	0.18
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/3/24	3/5/24	6/26/24	10/1/24
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/5/24	6/26/24	10/1/24	12/17/24
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	3/5/24	7/29/24	12/16/24	9/30/24
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	12/16/24	9/30/24	7/29/24	3/5/24
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**91** % Effluent
Dilution Series	**23, 46, 91, 96, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

Based on the review of the recent WET results, test of significant toxicity (TST) was performed using DEP's WET Analysis Spreadsheet. No reasonable potential was determined, and no limits are recommended in the draft permit.
The standard WET condition based on the DEP WET SOP is incorporated in Part C of the draft permit.

Current WET limit is eliminated from the permit. New monitoring data constitutes new information and anti-backsliding exception applies here and thereby justifies the elimination of the current WET limit Based on CWA §402(o)(2).

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)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	Report Avg Mo	XXX	XXX	1/day	Grab
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report Avg Mo	XXX	XXX	2/week	24-Hr Composite
CBOD5 Nov 1 - Apr 30	250	400	XXX	25.0 Avg Mo	40.0	50	2/week	24-Hr Composite
CBOD5 May 1 - Oct 31	150	230	XXX	15.0 Avg Mo	23.0	30	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report Avg Mo	XXX	XXX	1/week	24-Hr Composite
TSS	300	450	XXX	30.0 Avg Mo	45.0	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report Avg Mo	XXX	XXX	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	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)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200.0 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	Report Avg Mo	XXX	XXX	1/month	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Nitrate-Nitrite Nov 1 - Apr 30	Report	XXX	XXX	Report Avg Mo	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite May 1 - Oct 31	95.0	XXX	XXX	9.5 Avg Mo	XXX	19	2/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	45.0	XXX	XXX	4.5 Avg Mo	XXX	9	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	15.0	XXX	XXX	1.5 Avg Mo	XXX	3	2/week	24-Hr Composite
TKN	Report	XXX	XXX	Report Avg Mo	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report Avg Mo	XXX	XXX	2/week	Calculation
Total Phosphorus Nov 1 - Mar 31	17.0	XXX	XXX	1.7 Avg Mo	XXX	3.4	2/week	24-Hr Composite
Total Phosphorus Apr 1 - Oct 31	8.5	XXX	XXX	0.85 Avg Mo	XXX	1.7	2/week	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Cadmium	XXX	XXX	XXX	Report		XXX	1/quarter	24-Hr Composite
Total Copper	XXX	XXX	XXX	0.036 Avg Mo	0.056 Daily Max	XXX	1/week	24-Hr Composite
Total Hardness	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Free Cyanide	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Mercury	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	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	Instantaneous Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Zinc	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Hexachloro-butadiene	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
PFOA (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
PFOS (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
PFBS (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
PFBA (ug/L)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	See Permit	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	Report	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	42	66	XXX	25.0	40.0	50	2/week	24-Hr Composite
CBOD5 May 1 - Oct 31	25	38	XXX	15.0	23.0	30	2/week	24-Hr Composite
TSS	50	75	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
UV Intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	Report Avg Mo	XXX	XXX	1/month	Grab

Outfall 002 , 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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Nitrate-Nitrite Nov 1 - Apr 30	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite May 1 - Oct 31	16.0	XXX	XXX	9.5	XXX	19	2/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	7.5	XXX	XXX	4.5	XXX	9	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	2.5	XXX	XXX	1.5	XXX	3	2/week	24-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Phosphorus Nov 1 - Mar 31	2.8	XXX	XXX	1.7	XXX	3.4	2/week	24-Hr Composite
Total Phosphorus Apr 1 - Oct 31	1.4	XXX	XXX	0.85	XXX	1.7	2/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Average Weekly	Minimum	Annual Average	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
pH (S.U.)	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
COD	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
TSS	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
TKN	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
Dissolved Iron	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Average Weekly	Minimum	Annual Average	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
pH (S.U.)	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
COD	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
TSS	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
TKN	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab
Dissolved Iron	XXX	XXX	XXX	Report	Report	XXX	1/year	Grab

Discharge Information

Instructions | Discharge | Stream

Facility: BCWSA_Greent St | NPDES Permit No.: PA0021181 | 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
1.2	210	7.68						

					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		691									
	Chloride (PWS)	mg/L		224									
	Bromide	mg/L	<	0.12									
	Sulfate (PWS)	mg/L		110									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		267									
	Total Antimony	µg/L		0.4									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		108									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	200									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L	<	0.3									
	Total Copper	µg/L		14								2.086	
	Free Cyanide	µg/L		1									
	Total Cyanide	µg/L	<	6									
	Dissolved Iron	µg/L		37									
	Total Iron	µg/L		50									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		30									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L	<	2									
	Total Phenols (Phenolics) (PWS)	µg/L	<	1									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.3									
	Total Zinc	µg/L		46									
	Total Molybdenum	µg/L	<	3									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L											
	Acrylonitrile	µg/L	<	2									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

x		Vasantha Palakurti / Environmental Engineering Specialist	May 8, 2025
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	05/08/2025

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

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

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

BCWSA_Greent St, NPDES Permit No. PA0021181, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Trib to Neshaminy Creek

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	002821	1.5	240	2.57			Yes
End of Reach 1	002721	1	220	3.31			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	1.5	0.1										100	7		
End of Reach 1	1	0.1													

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	1.5														
End of Reach 1	1														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

BCWSA_Greent St, NPDES Permit No. PA0021181, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.110 PMF: 1 Analysis Hardness (mg/l): 196.62 Analysis pH: 7.52

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	854	
Total Antimony	0	0		0	1,100	1,100	1,252	
Total Arsenic	0	0		0	340	340	387	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	23,907	
Total Boron	0	0		0	8,100	8,100	9,221	
Total Cadmium	0	0		0	3.884	4.24	4.83	Chem Translator of 0.916 applied
Total Chromium (III)	0	0		0	991.247	3,137	3,571	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	18.5	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	108	
Total Copper	0	0		0	53.009	55.2	62.9	Chem Translator of 0.96 and Criteria Modifier of 2.086 applied
Free Cyanide	0	0		0	22	22.0	25.0	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	133.702	193	220	Chem Translator of 0.692 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.88	Chem Translator of 0.85 applied
Total Nickel	0	0		0	829.622	831	946	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	10.291	12.1	13.8	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	74.0	
Total Zinc	0	0		0	207.803	212	242	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.42	

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	39.5	CFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	342	THH	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	212	AFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	6.38	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	2,732	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,822	µg/L	Discharge Conc < TQL
Total Cadmium	0.51	µg/L	Discharge Conc < TQL
Total Chromium (III)	171	µg/L	Discharge Conc < TQL
Hexavalent Chromium	11.8	µg/L	Discharge Conc < TQL
Total Cobalt	21.6	µg/L	Discharge Conc < TQL
Free Cyanide	4.55	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Iron	1,708	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	8.57	µg/L	Discharge Conc < TQL
Total Manganese	1,138	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.057	µg/L	Discharge Conc < TQL
Total Nickel	105	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	5.68	µg/L	Discharge Conc < TQL
Total Silver	12.1	µg/L	Discharge Conc < TQL
Total Thallium	0.27	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.13	µg/L	Discharge Conc < TQL
Benzene	1.29	µg/L	Discharge Conc < TQL
Bromoform	15.5	µg/L	Discharge Conc < TQL