

Application Type Renewal
Facility Type Municipal
Major / Minor Major

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. PA0021768
APS ID 602736
Authorization ID 1373120

Applicant and Facility Information

<p>Applicant Name <u>Municipal Authority of the Borough of Somerset</u></p> <p>Applicant Address <u>347 W Union Street</u> <u>Somerset, PA 15501-1543</u></p> <p>Applicant Contact <u>Ms. Michele Enos</u></p> <p>Applicant Phone <u>(814) 443-2661</u></p> <p>Client ID <u>64334</u></p> <p>Ch 94 Load Status <u>Not Overloaded</u></p> <p>Connection Status <u>No Limitations</u></p> <p>Date Application Received <u>October 8, 2021</u></p> <p>Date Application Accepted _____</p>	<p>Facility Name <u>Somerset Borough STP</u></p> <p>Facility Address <u>1043 S Center Avenue</u> <u>Somerset, PA 15501</u></p> <p>Facility Contact <u>Mr. William Moon</u></p> <p>Facility Phone <u>(814) 443-2661</u></p> <p>Site ID <u>244435</u></p> <p>Municipality <u>Somerset Borough</u></p> <p>County <u>Somerset</u></p> <p>EPA Waived? <u>No</u></p> <p>If No, Reason <u>Major Facility</u></p>
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Purpose of Application Application for the Renewal of a NPDES permit for the discharge of treated Sewage.

Summary of Review

The Authority has applied for a renewal of NPDES Permit No. PA0021768, which was previously issued by the Department on May 24, 2017. That permit expired on May 31, 2022.



WQM Permit No. 5684404 authorized construction of a STP with an annual average design flow of 2.0 MGD. Preliminary treatment is provided by grit removal, a mechanically cleaned bar screen, and an influent pump station. Treatment is provided by primary settling tanks, trickling filters, secondary settling tanks, and biotowers for nitrification. Disinfection is provided by liquid chlorination followed by dechlorination.

Application data indicates that there is one industrial user in the system, Somerset Hospital.

The receiving stream, East Branch Coxes Creek, is currently classified as a TSF, located in State Watershed No. 19-F.

The Authority has complied with Act 14 Notifications and no comments were received.

The Department sent out a Pre-Draft Survey to the Authority on February 17, 2023, and the Authority's engineer responded on July 13, 2023 (Attachment 7). Their engineer indicated that the Authority would need 3 years to comply with new WQBELs that are further explained in the Development of Effluent Limitations Section of the fact sheet. Please note that WQBELs for Acrolein, and Monitoring requirements for Chlorodibromomethane & 1,1,2-Trichloroethane were imposed based upon sampling results that did not meet the Department's recommended TQLs. These pollutants will be re-evaluated during the draft permit comment period if the Authority elects to conduct additional sampling.

Approve	Deny	Signatures	Date
X		 William C. Mitchell, E.I.T. / Project Manager	September 25, 2023
X		 Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	September 29, 2023

Summary of Review

Sludge use and disposal description and location(s): Application data indicates that dried sewage sludge is disposed of at Mostoller Landfill, 7095 Glades Pike Road, Somerset PA, 15501. Application data indicates that the STP receives additional sludge from Salisbury Borough and Lincoln Township.

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)	2.0
Latitude	39° 59' 27.00"	Longitude	-79° 04' 49.00"
Quad Name	Murdock	Quad Code	1913
Wastewater Description: Sewage Effluent			
Receiving Waters	East Branch Coxes Creek (TSF)	Stream Code	39012
NHD Com ID	69916895	RMI	2.27
Drainage Area	23.8	Yield (cfs/mi ²)	0.02478
Q ₇₋₁₀ Flow (cfs)	0.59	Q ₇₋₁₀ Basis	USGS StreamStats
Elevation (ft)	2079	Slope (ft/ft)	0.01256
Watershed No.	19-F	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use	NONE	Exceptions to Criteria	NONE
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Coxes Creek Watershed
Background/Ambient Data		Data Source	
pH (SU)			
Temperature (°F)			
Hardness (mg/L)			
Other:			
Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority - PWS # 5260011		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI	62.0	Distance from Outfall (mi)	

Changes Since Last Permit Issuance: Elevation, Slope, DA, Q_{7/10} Flow, and Yield updated with current data taken from USGS StreamStats (Attachment 1).

Other Comments: A TMDL for the Coxes Creek watershed was approved on April 9, 2009 for the control of abandoned mine drainage pollutants: pH, iron, aluminum, and manganese. In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by the EPA pursuant to 40 CFR § 130.7.

Somerset Borough STP was assigned a Waste Load Allocation (WLA) for total iron, as an average monthly concentration based effluent limit of 2.2 mg/L. The Departments TMS model has recommended a more restrictive WQBEL for total iron, which will be imposed. The TMS model has also recommended monitoring for total aluminum and total manganese, which is further explained in the Development of Effluent Limitations Section of the fact sheet.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	101	Design Flow (MGD)	Variable
Latitude	39° 59' 30.00"	Longitude	-79° 04' 52.00"
Quad Name	Murdock	Quad Code	1913
Wastewater Description:	Storm water		
Receiving Waters	East Branch Coxes Creek (TSF)	Stream Code	39012

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	102	Design Flow (MGD)	Variable
Latitude	39° 59' 29.00"	Longitude	-79° 04' 50.00"
Quad Name	Murdock	Quad Code	1913
Wastewater Description:	Storm water		
Receiving Waters	East Branch Coxes Creek (TSF)	Stream Code	39012

Changes Since Last Permit Issuance: No Changes to existing Storm Water Outfalls.

Other Comments: N/A

Treatment Facility Summary				
Treatment Facility Name: Somerset Borough Main STP				
WQM Permit No.	Issuance Date			
5684404				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Trickling Filter With Settling	Hypochlorite & Dechlorination	2.0
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
2.0	8,500	Not Overloaded		Landfill

Changes Since Last Permit Issuance: Influent Pump Station pumps have been replaced under WQM Permit Amendment No. 5684404 A-4, issued by the Department on April 22, 2019.

Other Comments: N/A

Compliance History

Operations Compliance Check Summary Report

Facility: Somerset STP

NPDES Permit No.: PA0021768

Compliance Review Period: 9/2018 – 9/2023

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC	UPDATE DATE
3520372	02/15/2023	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	
3329710	03/01/2022	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	03/14/2022
3329739	03/01/2022	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted	
3329740	03/01/2022	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted	
3164104	03/19/2021	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted	
3164101	03/10/2021	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	07/13/2022
3163904	03/10/2021	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted	
3014546	02/25/2020	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	03/27/2020
3004086	02/10/2020	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted	
2979149	01/07/2020	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted	07/13/2022
2918761	08/12/2019	Chapter 94 Inspection	PA Dept of Environmental Protection	No Violations Noted	08/12/2019
2860902	02/07/2019	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	04/01/2019

**NPDES Permit Fact Sheet
Somerset Borough STP**

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2826617	11/28/2018	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted	
2807077	11/27/2018	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted	
2806269	10/05/2018	Routine/Partial Inspection	PA Dept of Environmental Protection	No Violations Noted	

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE DESC	RESOLVED DATE	INSP ID	INSP TYPE	VIOLATION COMMENT
988177	02/15/2023	NPDES - Unauthorized bypass occurred		3520372	Compliance Evaluation	Unauthorized discharge from the EQ lagoon at the treatment plant.
946825	03/01/2022	NPDES - Violation of effluent limits in Part A of permit	03/14/2022	3329710	Compliance Evaluation	
946828	03/01/2022	NPDES - Unauthorized bypass occurred	03/14/2022	3329710	Compliance Evaluation	
910776	03/10/2021	NPDES - Violation of effluent limits in Part A of permit	03/19/2021	3164101	Compliance Evaluation	August - Fecal Coliform value exceeded the effluent Instantaneous Maximum limit.
910777	03/10/2021	NPDES - Unauthorized bypass occurred	03/19/2021	3164101	Compliance Evaluation	December - bypass reported from the EQ lagoon. 30 hour bypass reported due to hydraulic overload of the plant.
910778	03/10/2021	NPDES - Unauthorized bypass occurred	07/13/2022	3164101	Compliance Evaluation	EQ bypass due to hydraulic overload of the plant.
881146	02/25/2020	Wasteload Management - Failure to implement required measures for an existing overload	03/27/2020	3014546	Compliance Evaluation	
872785	01/07/2020	NPDES - Violation of effluent limits in Part A of permit	07/13/2022	2979149	Administrative/File Review	
845348	02/07/2019	NPDES - Violation of effluent limits in Part A of permit	04/01/2019	2860902	Compliance Evaluation	
845349	02/07/2019	Wasteload Management - Failure to implement required measures for an existing overload	04/01/2019	2860902	Compliance Evaluation	

Open Violations by Client ID:

No open violations for Client ID 64334

Enforcement Summary:

ENF ID	ENF TYPE	EXECUTED DATE	ENF FINALSTATUS	ENF CLOSED DATE
401838	NOV	03/14/2022	Administrative Close Out	07/13/2022
384878	NOV	03/27/2020	Administrative Close Out	07/05/2022
373452	NOV	04/01/2019	Administrative Close Out	04/09/2021

DMR Violation Summary:

START	END	NON COMPLIANCE CATEGORY	PARAMETER	SAMPLE	PERMIT	UNIT	STATISTICAL BASE CODE
05/01/2021	05/31/2021	Load 1 Effluent Violation	Iron, Total	43.59	36.7	lbs/day	Average Monthly
08/01/2020	08/31/2020	Concentration 3 Effluent Violation	Fecal Coliform	2485.5	1000	No./100 ml	Instantaneous Maximum

Compliance Status: Permittee currently under a CAP and soon to be COA

Completed by: John Murphy

Completed date: 9/11/2023

Compliance History

DMR Data for Outfall 001 (from August 1, 2022 to July 31, 2023)

Parameter	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22
Flow (MGD) Average Monthly	1.408	1.281	1.530	1.467	2.201	1.782	2.472	1.848	1.576	1.224	1.229	1.285
Flow (MGD) Daily Maximum	2.874	3.015	3.289	2.959	5.933	4.152	5.451	3.740	5.502	3.209	2.536	3.833
pH (S.U.) Minimum	7.2	7.2	7.1	7.0	6.9	7.0	7.0	7.0	7.1	7.0	7.1	7.0
pH (S.U.) Maximum	7.6	7.6	7.7	7.5	7.6	7.6	7.6	7.8	7.8	7.6	7.5	7.6
DO (mg/L) Minimum	7.4	7.3	8.3	8.8	9.6	9.4	9.7	9.3	8.4	8.3	7.7	7.5
TRC (mg/L) Average Monthly	0.09	0.02	0.08	0.07	0.10	0.07	0.10	0.10	0.01	0.04	0.02	0.03
TRC (mg/L) Instantaneous Maximum	0.66	0.37	0.31	0.39	0.56	0.37	0.40	0.61	0.10	0.35	0.15	0.45
CBOD5 (lbs/day) Average Monthly	< 36.8	50.8	76.4	51.9	< 43.3	< 38.1	< 32.0	< 21.3	< 22.0	< 15.2	< 26.6	< 21.7
CBOD5 (lbs/day) Weekly Average	55.9	70.3	191.8	96.0	< 59.7	76.8	< 40.9	< 28.6	< 29.5	< 18.6	< 57.1	< 26.6
CBOD5 (mg/L) Average Monthly	< 3.3	4.5	5.2	4.4	< 2.9	< 2.0	< 1.8	< 1.6	< 1.9	< 1.5	< 1.9	< 2.1
CBOD5 (mg/L) Weekly Average	4.0	5.5	8.5	7.0	4.5	2.5	< 2.3	< 1.8	< 2.3	< 1.7	< 2.8	< 3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1758.0	1976.2	2154.5	1316.4	1572.0	1497.2	1445.2	1708.2	977.4	1077	1123.5	1092.3
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	2433.0	3102	2826.0	2235.0	1955.0	1949	1886.0	4526	1930	1378	1459.0	1590.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	165.4	188.5	183.0	119.9	112.9	100.5	83.5	135.6	90.8	111.8	96.0	112.3
TSS (lbs/day) Average Monthly	47.7	60.7	70.1	80.8	59.1	< 75.6	< 74.4	< 30.4	< 54.1	< 27.3	< 48.7	< 27.7

**NPDES Permit Fact Sheet
Somerset Borough STP**

NPDES Permit No. PA0021768

TSS (lbs/day) Raw Sewage Influent Average Monthly	1995.7	1595.3	2235.0	1912.8	1779.8	2069	1485.5	2384.7	2147.8	2019.8	1860.6	1952.1
TSS (lbs/day) Raw Sewage Influent Daily Maximum	3558.0	3048	3484.0	2909.0	2866.0	2814	1823.0	7131	4408	3647	3976.0	3018.0
TSS (lbs/day) Weekly Average	69.7	86.1	129.1	111.2	77.5	142.8	< 147.3	< 34.9	122.5	< 31.8	< 117.7	37.4
TSS (mg/L) Average Monthly	4.4	5.4	5.3	7.0	4.1	< 4.0	< 3.8	< 2.4	< 4.2	< 2.8	< 3.5	< 2.5
TSS (mg/L) Raw Sewage Influent Average Monthly	186.0	145.1	182.7	170.6	126.9	135.3	85.7	188.5	206.3	214.9	155.4	197.8
TSS (mg/L) Weekly Average	5.5	6.0	6.0	10.0	5.0	4.5	7.0	< 3.0	6.5	< 3.5	< 8.0	3.5
Fecal Coliform (No./100 ml) Geometric Mean	< 3.6	9.2	9.3	10.5	14.0	18.3	66.1	10.5	< 7.4	6.0	39.0	31.5
Fecal Coliform (No./100 ml) Instantaneous Maximum	17.2	38.2	130.0	1177.9	28.2	210.4	153.4	33.7	124.8	21.3	753.8	403.1
Total Nitrogen (mg/L) Daily Maximum		< 17.7			13.4			< 19.6			< 21.2	
Ammonia (lbs/day) Average Monthly	< 1.08	< 1.65	< 1.95	< 1.22	< 3.11	< 6.73	< 2.91	< 5.28	< 3.78	< 1.38	< 2.12	< 1.46
Ammonia (mg/L) Average Monthly	< 0.10	< 0.14	< 0.16	< 0.11	< 0.21	< 0.3	< 0.15	< 0.43	< 0.32	< 0.14	< 0.14	< 0.14
Ammonia (mg/L) Weekly Average	< 0.10	0.22	< 0.36	< 0.13	< 0.30	0.85	0.23	0.85	< 1.16	< 0.25	< 0.26	< 0.19
Total Phosphorus (mg/L) Daily Maximum		1.39			1.14			2.74			1.89	
Total Iron (lbs/day) Average Monthly	8.75	9.10	12.30	10.04	13.79	21.76	11.73	15.85	12.80	8.70	9.67	6.43
Total Iron (mg/L) Average Monthly	0.75	0.82	1.01	0.81	0.84	1.11	0.67	1.27	1.07	0.90	0.56	0.48
Total Iron (mg/L) Weekly Average	0.90	1.23	1.49	1.17	1.16	1.95	0.81	1.88	1.84	1.21	1.25	0.62

Development of Effluent Limitations

Outfall No.	001	Design Flow (MGD)	2.0
Latitude	39° 59' 27.00"	Longitude	-79° 04' 49.00"
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)

Comments: Impose the above Technology-Based Limitations for CBOD₅, TSS, pH, and Fecal Coliform.

Water Quality-Based Limitations

A "Reasonable Potential Analysis" (Attachment 4 - TMS Version 1.4) determined the following parameters were candidates for limitations: Total Aluminum, Total Boron, Hexavalent Chromium, Total Cobalt, Total Copper, Free Cyanide, Dissolved Iron, Total Iron, Total Lead, Total Manganese, Total Zinc, Acrolein, Chlorodibromomethane, Chloroform, Dichlorobromomethane, 1,1,2-Trichloroethane.

The following limitations were determined through water quality modeling (Attachments 2, 3,4, and 5):

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen Nov 1 – Apr 30	4.9	Average Monthly	WQM 7.0 Version 1.1
Ammonia-Nitrogen May 1 – Oct 31	2.2	Average Monthly	WQM 7.0 Version 1.1
Dissolved Oxygen	6.0	Inst Minimum	WQM 7.0 Version 1.1
TRC	0.03	Average Monthly	TRC_CALC
Chromium, Hexavalent (ug/L)	12.4	Average Monthly	TMS Version 1.4
Copper, Total (ug/L)	18.4	Average Monthly	TMS Version 1.4
Cyanide, Free (ug/L)	4.76	Average Monthly	TMS Version 1.4
Iron, Dissolved (ug/L)	357.0	Average Monthly	TMS Version 1.4
Iron, Total	1.78	Average Monthly	TMS Version 1.4
Acrolein (ug/L)	3.0	Average Monthly	TMS Version 1.4
Chloroform (ug/L)	6.79	Average Monthly	TMS Version 1.4
Dichlorobromomethane (ug/L)	2.39	Average Monthly	TMS Version 1.4
1,1,2-Trichloroethane (ug/L)	1.38	Average Monthly	TMS Version 1.4

Comments: Due to anti-backsliding, the summer period Ammonia-Nitrogen limitation of 2.0 mg/L (Average Monthly Concentration) will again be imposed from the previous permit.

DMR data indicates that the Authority can not comply with revised more restrictive TRC WQBELs. Part C.V (Titled "Requirements for TRC) has been added to the permit. The Authority will have 3 years to comply with the final effluent limitation, as requested in the Pre-Draft Survey Response Letter (Attachment 7). During the interim period the existing TRC limit of 0.38 mg/L (Average Monthly Concentration) will be imposed.

Part C.III. (Titled "WQBELs for Toxic Pollutants) has been added to the permit. The Authority has the opportunity to collect site-specific data and conduct a TRE. The Authority will have 3 years to complete the required studies and submit a Final WQBEL Compliance Report to the Department before having to comply with Final Permit Limits for Free Cyanide, Dissolved Iron, Acrolein, Dichlorobromomethane, and Chloroform.

Application data indicates that the Authority can comply with WQBELs for Hexavalent Chromium, Total Copper, Total Iron, and 1,1,2-Trichloroethane upon permit issuance.

The TMS Model Results recommended Monitoring be established for Total Aluminum, Total Boron, Total Cobalt, Total Lead, Total Manganese, Total Zinc, and Chlorodibromomethane, as the discharge concentration of those parameters is greater than 10 % of the governing WQBELs (no RP).

Best Professional Judgment (BPJ) Limitations

Comments: N/A

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.

The facility is not seeking to revise the previously permitted effluent limits.

Additional Considerations

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document No. 386-0400-001).

For POTWs, mass loading limits will be established for CBOD5, TSS, NH3-N, and where necessary Total P and Total N. In general, average monthly mass loading limits will be established for CBOD5, TSS, NH3-N, and where necessary Total P and Total N, and average weekly mass loading limits will be established for CBOD5 and TSS (Section IV, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9).

For POTWs with design flows greater than 2,000 GPD and for non-municipal sewage facilities that service municipalities or portions thereof, the application manager will establish influent BOD5 and TSS monitoring in the permit using the same frequency and sample type as is used for other effluent parameters (Section IV.E.8, SOP for Clean Water Program, New and Reissuance Sewage Individual NPDES Permit Applications, Final November 9, 2012, Revised February 3, 2022, Version 2.0).

Sewage discharges will include monitoring, at a minimum, for *E. Coli*, in new and reissued permits, with a monitoring frequency of 1/month for design flows > 1.0 MGD per 92a.61 and Section I.A, Note 12, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9.

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). A 1/quarter monitoring requirement for Total N & Total P has been added to the permit per Chapter 92a.61 and Section I.A, Note 7 & 8, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9. Discharge is to waters not impaired for nutrients.

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: [REDACTED]

The dilution series used for the tests was: 100%, 81%, 61%, 31%, and 15%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 61 %.

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
08/15/2018	Pass	Pass	Pass	Pass
06/10/2019	Pass	Pass	Pass	Pass
06/09/2020	Pass	Pass	Pass	Pass
07/20/2021	Pass	Pass	Pass	Pass

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

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

☐ YES ☒ NO

Comments: N/A

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

Acute Partial Mix Factor (PMFa): 1

Chronic Partial Mix Factor (PMFc): 1

1. Determine IWC – Acute (IWCa):

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

$$[(2.0 \text{ MGD} \times 1.547) / ((0.59 \text{ cfs} \times 1) + (2.0 \text{ MGD} \times 1.547))] \times 100 = \mathbf{83.98\%}$$

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

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

N/A

Type of Test for Permit Renewal: Chronic

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

$$\text{TIWCa} = 0.8398 / 0.3 = 100\%$$

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

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

$$[(2.0 \text{ MGD} \times 1.547) / ((0.59 \text{ cfs} \times 1.0) + (2.0 \text{ MGD} \times 1.547))] \times 100 = \mathbf{84.0\%}$$

3. Determine Dilution Series

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

Dilution Series = 100%, 92%, 84%, 42%, and 21%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

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

N/A

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

N/A

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 001, Effective Period: Permit Effective Date through End of 36th Month.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
TRC	XXX	XXX	XXX	0.38	XXX	1.23	1/day	Grab
Free Cyanide (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Dissolved Iron (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Acrolein (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	4 Grabs/24 Hours
Dichlorobromo-methane (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	4 Grabs/24 Hours
Chloroform (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	4 Grabs/24 Hours

Compliance Sampling Location: 001

Other Comments: N/A

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 001, Effective Period: Beginning of 37th Month 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	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
TRC	XXX	XXX	XXX	0.03	XXX	0.12	1/day	Grab
Free Cyanide (ug/L)	0.079	0.12	XXX	4.76	7.43	11.9	1/week	24-Hr Composite
Dissolved Iron (ug/L)	5.96	9.3	XXX	357.0	557.0	893	1/week	24-Hr Composite
Acrolein (ug/L)	0.05	0.06	XXX	3.0	3.57	3.57	1/week	4 Grabs/24 Hours
Dichlorobromo-methane (ug/L)	0.04	0.062	XXX	2.39	3.73	5.97	1/week	4 Grabs/24 Hours
Chloroform (ug/L)	0.11	0.18	XXX	6.79	10.6	17	1/week	4 Grabs/24 Hours

Compliance Sampling Location: 001

Other Comments: N/A

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (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	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	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	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	415	665 Wkly Avg	XXX	25.0	40.0 Wkly Avg	50	2/week	24-Hr Composite
BOD5	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Raw Sewage Influent	Report	Wkly Avg	XXX	Report	Wkly Avg	XXX	2/week	24-Hr Composite
TSS	500	750 Wkly Avg	XXX	30.0	45.0 Wkly Avg	60	2/week	24-Hr Composite
TSS	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Raw Sewage Influent	Report	Wkly Avg	XXX	Report	Wkly Avg	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	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	81.7	XXX	XXX	4.9	XXX	9.8	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	33.3	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report	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	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Aluminum (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Boron (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Hexavalent Chromium (ug/L)	0.21	0.32	XXX	12.4	19.3	30.9	1/week	24-Hr Composite
Total Cobalt (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Copper (ug/L)	0.31	0.48	XXX	18.4	28.7	46	1/week	24-Hr Composite
Total Iron	29.8	46.5	XXX	1.78	2.78	XXX	1/week	24-Hr Composite
Total Lead (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Manganese (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Zinc (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Chlorodibromo-methane (ug/L)	Report	Report	XXX	Report	Report	XXX	1/week	4 Grabs/24 Hours
1,1,2-Trichloroethane (ug/L)	0.023	0.036	XXX	1.38	2.16	3.46	1/week	4 Grabs/24 Hours

Compliance Sampling Location: 001

Other Comments: N/A

Attachment 1 – USGS StreamStats Report

2/7/23, 10:52 AM

StreamStats

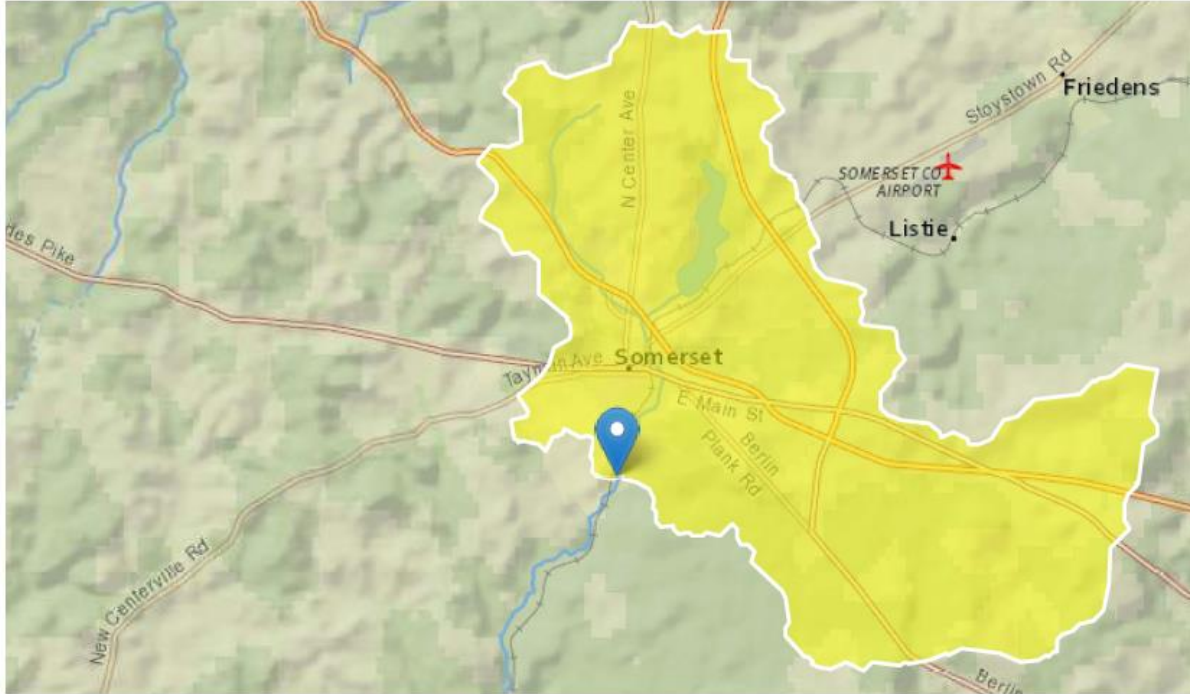
StreamStats Report - PA0021768

Region ID: PA

Workspace ID: PA20230207152226252000

Clicked Point (Latitude, Longitude): 39.99187, -79.08057

Time: 2023-02-07 10:22:47 -0500



Collapse All

➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	23.8	square miles
ELEV	Mean Basin Elevation	2298	feet

➤ Low-Flow Statistics

2/7/23, 10:52 AM

StreamStats

Low-Flow Statistics Parameters [99.9 Percent (23.8 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	23.8	square miles	2.26	1400
ELEV	Mean Basin Elevation	2298	feet	1050	2580

Low-Flow Statistics Flow Report [99.9 Percent (23.8 square miles) Low Flow Region 4]

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.79	ft ³ /s	43	43
30 Day 2 Year Low Flow	3.09	ft ³ /s	38	38
7 Day 10 Year Low Flow	0.59	ft ³ /s	66	66
30 Day 10 Year Low Flow	1.06	ft ³ /s	54	54
90 Day 10 Year Low Flow	2.15	ft ³ /s	41	41

Low-Flow Statistics Citations

Stuckey, M.H., 2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (<http://pubs.usgs.gov/sir/2006/5130/>)

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2/7/23, 10:52 AM

StreamStats

Application Version: 4.12.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Attachment 2 – WQM 7.0 Version 1.1 – Summer Period

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
19F	39012	EAST BRANCH COXES CREEK	2.270	2079.00	23.80	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	pH
Q7-10	0.025	0.00	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
PA0021768	Somerset STP	0.0000	2.0000	2.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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
19F	39012	EAST BRANCH COXES CREEK	1.320	2016.00	25.40	0.00000	0.00	<input checked="" type="checkbox"/>

Design Cond.	LFY	Trib Flow	Stream Flow	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
	(cfsm)	(cfs)	(cfs)									
Q7-10	0.025	0.00	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
		0.0000	0.0000	0.0000	0.000	0.00	7.00

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

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>								
19F		39012		EAST BRANCH COXES CREEK								
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
2.270	0.59	0.00	0.59	3.094	0.01256	1.254	12.54	10	0.23	0.248	20.80	7.00
Q1-10 Flow												
2.270	0.38	0.00	0.38	3.094	0.01256	NA	NA	NA	0.23	0.256	20.54	7.00
Q30-10 Flow												
2.270	0.80	0.00	0.80	3.094	0.01256	NA	NA	NA	0.24	0.240	21.03	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input checked="" type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>						
19F		39012	EAST BRANCH COXES CREEK						
NH3-N Acute Allocations									
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction		
2.270	PA0021768	16.02	17.98	16.02	17.98	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		
2.270	PA0021768	1.77	2.22	1.77	2.22	1	0		
Dissolved Oxygen Allocations									
RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.27	PA0021768	25	25	2.22	2.22	6	6	0	0

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
19F	39012	EAST BRANCH COXES CREEK		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
2.270	2.000	20.800	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
12.537	1.254	10.000	0.234	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
21.32	1.473	1.87	0.744	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
6.359	28.506	Tsivoglou	6	
<u>Reach Travel Time (days)</u>	Subreach Results			
0.248	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
	0.025	20.53	1.83	6.75
	0.050	19.76	1.80	6.97
	0.074	19.03	1.77	7.12
	0.099	18.32	1.73	7.22
	0.124	17.64	1.70	7.30
	0.149	16.99	1.67	7.37
	0.173	16.36	1.64	7.43
	0.198	15.75	1.61	7.49
	0.223	15.16	1.58	7.54
	0.248	14.60	1.55	7.59

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
19F		39012	EAST BRANCH COXES CREEK				
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
2.270	PA0021768	Somerset STP	0.000	CBOD5	25		
				NH3-N	2.22	4.44	
				Dissolved Oxygen			6

Attachment 3 – WQM 7.0 Version 1.1 – Winter Period

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
19F	39012	EAST BRANCH COXES CREEK	2.270	2079.00	23.80	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	pH
Q7-10	0.050	0.00	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
PA0021768	Somerset STP	0.0000	2.0000	2.0000	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

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
19F	39012	EAST BRANCH COXES CREEK	1.320	2016.00	25.40	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data												
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.050	0.00	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
		0.0000	0.0000	0.0000	0.000	0.00	7.00

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

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
19F		39012				EAST BRANCH COXES CREEK						
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
2.270	1.18	0.00	1.18	3.094	0.01256	1.295	12.95	10	0.25	0.228	12.24	7.00
Q1-10 Flow												
2.270	0.75	0.00	0.75	3.094	0.01256	NA	NA	NA	0.24	0.242	13.04	7.00
Q30-10 Flow												
2.270	1.60	0.00	1.60	3.094	0.01256	NA	NA	NA	0.27	0.216	11.59	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input checked="" type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
19F	39012	EAST BRANCH COXES CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.270	PA0021768	24.1	29.98	24.1	29.98	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
2.270	PA0021768	3.25	4.93	3.25	4.93	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.27	PA0021768	25	25	4.93	4.93	4	4	0	0

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
19F	39012	EAST BRANCH COXES CREEK		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
2.270	2.000	12.240	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
12.954	1.295	10.000	0.255	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
18.65	1.450	3.57	0.385	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
6.349	25.286	Tsivoglou	6	
<u>Reach Travel Time (days)</u>	Subreach Results			
0.228	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
	0.023	18.23	3.54	7.67
	0.046	17.81	3.51	8.42
	0.068	17.40	3.48	8.85
	0.091	17.00	3.45	9.11
	0.114	16.61	3.42	9.26
	0.137	16.23	3.39	9.36
	0.160	15.86	3.36	9.43
	0.182	15.50	3.33	9.48
	0.205	15.14	3.30	9.51
	0.228	14.80	3.27	9.54

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
19F		39012		EAST BRANCH COXES CREEK			
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
2.270	PA0021768	Somerset STP	0.000	CBOD5	25		
				NH3-N	4.93	9.86	
				Dissolved Oxygen			4

Attachment 4 – TMS Version 1.4



Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions Discharge Stream

Facility: **Somerset Borough STP** NPDES Permit No.: **PA0021768** Outfall No.: **001**

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q ₇₋₁₀	Q _h
2	195.7	7						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	621								
	Chloride (PWS)	mg/L	212								
	Bromide	mg/L	0.2								
	Sulfate (PWS)	mg/L	62.5								
	Fluoride (PWS)	mg/L									
Group 2	Total Aluminum	µg/L	108								
	Total Antimony	µg/L	< 1								
	Total Arsenic	µg/L	1								
	Total Barium	µg/L	90.8								
	Total Beryllium	µg/L	1								
	Total Boron	µg/L	226								
	Total Cadmium	µg/L	< 0.2								
	Total Chromium (III)	µg/L	10								
	Hexavalent Chromium	µg/L	13								
	Total Cobalt	µg/L	2.9								
	Total Copper	µg/L	16.4								
	Free Cyanide	µg/L	6								
	Total Cyanide	µg/L	12								
	Dissolved Iron	µg/L	1720								
	Total Iron	µg/L	1810								
	Total Lead	µg/L	1.1								
	Total Manganese	µg/L	138								
	Total Mercury	µg/L	< 0.2								
	Total Nickel	µg/L	10								
	Total Phenols (Phenolics) (PWS)	µg/L	0.5								
	Total Selenium	µg/L	< 1								
	Total Silver	µg/L	0.5								
	Total Thallium	µg/L	< 0.2								
	Total Zinc	µg/L	38.3								
	Total Molybdenum	µg/L	1.7								
	Acrolein	µg/L	< 5								
	Acrylamide	µg/L	<								
	Acrylonitrile	µg/L	< 1								
	Benzene	µg/L	< 0.5								
	Bromoform	µg/L	< 1								

Group 3	Carbon Tetrachloride	µg/L	<	0.5																
	Chlorobenzene	µg/L		0.5																
	Chlorodibromomethane	µg/L	<	1																
	Chloroethane	µg/L	<	0.5																
	2-Chloroethyl Vinyl Ether	µg/L	<	1																
	Chloroform	µg/L		11																
	Dichlorobromomethane	µg/L		3																
	1,1-Dichloroethane	µg/L	<	0.5																
	1,2-Dichloroethane	µg/L	<	0.5																
	1,1-Dichloroethylene	µg/L	<	0.5																
	1,2-Dichloropropane	µg/L	<	0.5																
	1,3-Dichloropropylene	µg/L	<	0.5																
	1,4-Dioxane	µg/L	<	50																
	Ethylbenzene	µg/L	<	0.5																
	Methyl Bromide	µg/L	<	1																
	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	<	1																
	1,1,1-Trichloroethane	µg/L	<	0.5																
	1,1,2-Trichloroethane	µg/L	<	1																
	Trichloroethylene	µg/L	<	0.5																
	Vinyl Chloride	µg/L	<	0.5																
Group 4	2-Chlorophenol	µg/L	<	0.5																
	2,4-Dichlorophenol	µg/L	<	0.5																
	2,4-Dimethylphenol	µg/L	<	0.5																
	4,6-Dinitro-o-Cresol	µg/L	<	5																
	2,4-Dinitrophenol	µg/L	<	1.9																
	2-Nitrophenol	µg/L	<	0.9																
	4-Nitrophenol	µg/L	<	0.9																
	p-Chloro-m-Cresol	µg/L	<	0.2																
	Pentachlorophenol	µg/L	<	0.9																
	Phenol	µg/L	<	0.5																
	2,4,6-Trichlorophenol	µg/L	<	0.5																
Group 5	Acenaphthene	µg/L	<	0.2																
	Acenaphthylene	µg/L	<	0.2																
	Anthracene	µg/L	<	0.2																
	Benzidine	µg/L	<	0.9																
	Benzo(a)Anthracene	µg/L	<	0.2																
	Benzo(a)Pyrene	µg/L	<	0.2																
	3,4-Benzofluoranthene	µg/L	<	0.2																
	Benzo(ghi)Perylene	µg/L	<	0.2																
	Benzo(k)Fluoranthene	µg/L	<	0.2																
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.2																
	Bis(2-Chloroethyl)Ether	µg/L	<	0.2																
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.2																
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.8																
	4-Bromophenyl Phenyl Ether	µg/L	<	0.2																
	Butyl Benzyl Phthalate	µg/L	<	1.9																
	2-Chloronaphthalene	µg/L	<	0.2																
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.2																
	Chrysene	µg/L	<	0.2																
	Dibenzo(a,h)Anthracene	µg/L	<	0.2																
	1,2-Dichlorobenzene	µg/L	<	0.2																
	1,3-Dichlorobenzene	µg/L	<	0.2																
	1,4-Dichlorobenzene	µg/L	<	0.2																
	3,3-Dichlorobenzidine	µg/L	<	0.9																
	Diethyl Phthalate	µg/L	<	1.9																
	Dimethyl Phthalate	µg/L	<	1.9																
	Di-n-Butyl Phthalate	µg/L	<	1.9																
	2,4-Dinitrotoluene	µg/L	<	0.5																

Page 3



Stream / Surface Water Information

Somerset Borough STP, NPDES Permit No. PA0021768, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: **East Branch Coxes Creek**

No. Reaches to Model: **1**

- ☒ Statewide Criteria
☐ Great Lakes Criteria
☐ ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi ²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	039012	2.27	2079	23.8			Yes
End of Reach 1	039012	1.32	2016	25.4			Yes

Q₇₋₁₀

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	2.27	0.02478	0.59		10	12.54	1.254	0.234				100	7		
End of Reach 1	1.32	0.02478													

Q_h

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	2.27														
End of Reach 1	1.32														



Model Results

Somerset Borough STP, NPDES Permit No. PA0021768, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

☒ All☐ Inputs☐ Results☐ Limits☒ HydrodynamicsQ₇₋₁₀

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)
2.27	0.59		0.59	3.094	0.013	1.254	12.54	10.	0.234	0.248	0.035
1.32	0.63		0.63								

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)
2.27	4.69		4.69	3.094	0.013	1.742	12.54	7.197	0.356	0.163	0.303
1.32	4.959		4.96								

☒ Wasteload Allocations☒ AFC

CCT (min): 0.035

PMF:

1

Analysis Hardness (mg/l):

180.37

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	893	
Total Antimony	0	0		0	1,100	1,100	1,310	
Total Arsenic	0	0		0	340	340	405	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	25,005	
Total Boron	0	0		0	8,100	8,100	9,645	
Total Cadmium	0	0		0	3.572	3.89	4.63	Chem Translator of 0.919 applied
Total Chromium (III)	0	0		0	923.634	2,923	3,480	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	19.4	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	113	
Total Copper	0	0		0	23.428	24.4	29.1	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	26.2	

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	121.972	173	206	Chem Translator of 0.705 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.96	Chem Translator of 0.85 applied
Total Nickel	0	0		0	771.235	773	920	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	8.872	10.4	12.4	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	77.4	
Total Zinc	0	0		0	193.157	198	235	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.57	
Acrylonitrile	0	0		0	650	650	774	
Benzene	0	0		0	640	640	762	
Bromoform	0	0		0	1,800	1,800	2,143	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,334	
Chlorobenzene	0	0		0	1,200	1,200	1,429	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	21,432	
Chloroform	0	0		0	1,900	1,900	2,262	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	17,860	
1,1-Dichloroethylene	0	0		0	7,500	7,500	8,930	
1,2-Dichloropropane	0	0		0	11,000	11,000	13,098	
1,3-Dichloropropylene	0	0		0	310	310	369	
Ethylbenzene	0	0		0	2,900	2,900	3,453	
Methyl Bromide	0	0		0	550	550	655	
Methyl Chloride	0	0		0	28,000	28,000	33,339	
Methylene Chloride	0	0		0	12,000	12,000	14,288	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,191	
Tetrachloroethylene	0	0		0	700	700	833	
Toluene	0	0		0	1,700	1,700	2,024	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	8,097	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,572	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	4,048	
Trichloroethylene	0	0		0	2,300	2,300	2,739	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	667	
2,4-Dichlorophenol	0	0		0	1,700	1,700	2,024	
2,4-Dimethylphenol	0	0		0	660	660	786	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	95.3	
2,4-Dinitrophenol	0	0		0	660	660	786	
2-Nitrophenol	0	0		0	8,000	8,000	9,526	
4-Nitrophenol	0	0		0	2,300	2,300	2,739	
p-Chloro-m-Cresol	0	0		0	160	160	191	
Pentachlorophenol	0	0		0	8.723	8.72	10.4	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	548	

Acenaphthene	0	0		0	83	83.0	98.8
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	300	300	357
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.6
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	35,721
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,358
4-Bromophenyl Phenyl Ether	0	0		0	270	270	321
Butyl Benzyl Phthalate	0	0		0	140	140	167
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	820	820	976
1,3-Dichlorobenzene	0	0		0	350	350	417
1,4-Dichlorobenzene	0	0		0	730	730	869
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	4,000	4,000	4,763
Dimethyl Phthalate	0	0		0	2,500	2,500	2,977
Di-n-Butyl Phthalate	0	0		0	110	110	131
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,905
2,6-Dinitrotoluene	0	0		0	990	990	1,179
1,2-Diphenylhydrazine	0	0		0	15	15.0	17.9
Fluoranthene	0	0		0	200	200	238
Fluorene	0	0		0	N/A	N/A	N/A
Hexachlorobenzene	0	0		0	N/A	N/A	N/A
Hexachlorobutadiene	0	0		0	10	10.0	11.9
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.95
Hexachloroethane	0	0		0	60	60.0	71.4
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A
Isophorone	0	0		0	10,000	10,000	11,907
Naphthalene	0	0		0	140	140	167
Nitrobenzene	0	0		0	4,000	4,000	4,763
n-Nitrosodimethylamine	0	0		0	17,000	17,000	20,242
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0		0	300	300	357
Phenanthrene	0	0		0	5	5.0	5.95
Pyrene	0	0		0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0		0	130	130	155

☒ CFC

CCT (min): 0.035

PMF: 1

Analysis Hardness (mg/l): 180.37

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	262	
Total Arsenic	0	0		0	150	150	179	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,882	
Total Boron	0	0		0	1,600	1,600	1,905	
Total Cadmium	0	0		0	0.370	0.42	0.5	Chem Translator of 0.884 applied
Total Chromium (III)	0	0		0	120.146	140	166	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	12.4	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	22.6	
Total Copper	0	0		0	14.825	15.4	18.4	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	6.19	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,786	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	4.753	6.74	8.03	Chem Translator of 0.705 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.08	Chem Translator of 0.85 applied
Total Nickel	0	0		0	85.660	85.9	102	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.94	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	15.5	
Total Zinc	0	0		0	194.737	198	235	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.57	
Acrylonitrile	0	0		0	130	130	155	
Benzene	0	0		0	130	130	155	
Bromoform	0	0		0	370	370	441	
Carbon Tetrachloride	0	0		0	560	560	667	
Chlorobenzene	0	0		0	240	240	286	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	4,167	
Chloroform	0	0		0	390	390	464	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,691	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,786	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,620	
1,3-Dichloropropylene	0	0		0	61	61.0	72.6	
Ethylbenzene	0	0		0	580	580	691	
Methyl Bromide	0	0		0	110	110	131	
Methyl Chloride	0	0		0	5,500	5,500	6,549	
Methylene Chloride	0	0		0	2,400	2,400	2,858	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	250	
Tetrachloroethylene	0	0		0	140	140	167	
Toluene	0	0		0	330	330	393	

1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,667
1,1,1-Trichloroethane	0	0		0	610	610	726
1,1,2-Trichloroethane	0	0		0	680	680	810
Trichloroethylene	0	0		0	450	450	536
Vinyl Chloride	0	0		0	N/A	N/A	N/A
2-Chlorophenol	0	0		0	110	110	131
2,4-Dichlorophenol	0	0		0	340	340	405
2,4-Dimethylphenol	0	0		0	130	130	155
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	19.1
2,4-Dinitrophenol	0	0		0	130	130	155
2-Nitrophenol	0	0		0	1,600	1,600	1,905
4-Nitrophenol	0	0		0	470	470	560
p-Chloro-m-Cresol	0	0		0	500	500	595
Pentachlorophenol	0	0		0	6.693	6.69	7.97
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	91	91.0	108
Acenaphthene	0	0		0	17	17.0	20.2
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	59	59.0	70.3
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.12
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	7,144
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,084
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	64.3
Butyl Benzyl Phthalate	0	0		0	35	35.0	41.7
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	160	160	191
1,3-Dichlorobenzene	0	0		0	69	69.0	82.2
1,4-Dichlorobenzene	0	0		0	150	150	179
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	800	800	953
Dimethyl Phthalate	0	0		0	500	500	595
Di-n-Butyl Phthalate	0	0		0	21	21.0	25.0
2,4-Dinitrotoluene	0	0		0	320	320	381
2,6-Dinitrotoluene	0	0		0	200	200	238
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.57
Fluoranthene	0	0		0	40	40.0	47.6
Fluorene	0	0		0	N/A	N/A	N/A
Hexachlorobenzene	0	0		0	N/A	N/A	N/A
Hexachlorobutadiene	0	0		0	2	2.0	2.38

NPDES Permit Fact Sheet
Somerset Borough STP

NPDES Permit No. PA0021768

Hexachlorocyclopentadiene	0	0		0	1	1.0	1.19	
Hexachloroethane	0	0		0	12	12.0	14.3	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,500	
Naphthalene	0	0		0	43	43.0	51.2	
Nitrobenzene	0	0		0	810	810	964	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	4,048	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	70.3	
Phenanthrene	0	0		0	1	1.0	1.19	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	31.0	

☒ THH

CCT (min): 0.035

PMF: 1

Analysis Hardness (mg/l): N/A

Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	6.67	
Total Arsenic	0	0		0	10	10.0	11.9	
Total Barium	0	0		0	2,400	2,400	2,858	
Total Boron	0	0		0	3,100	3,100	3,691	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	4.76	
Dissolved Iron	0	0		0	300	300	357	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,191	
Total Mercury	0	0		0	0.050	0.05	0.06	
Total Nickel	0	0		0	610	610	726	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.29	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.57	
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	119
Chlorodibromomethane	0	0		0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A
Chloroform	0	0		0	5.7	5.7	6.79
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	39.3
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	81.0
Methyl Bromide	0	0		0	100	100.0	119
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	67.9
1,2-trans-Dichloroethylene	0	0		0	100	100.0	119
1,1,1-Trichloroethane	0	0		0	10,000	10,000	11,907
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	35.7
2,4-Dichlorophenol	0	0		0	10	10.0	11.9
2,4-Dimethylphenol	0	0		0	100	100.0	119
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.38
2,4-Dinitrophenol	0	0		0	10	10.0	11.9
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	N/A	N/A	N/A
Phenol	0	0		0	4,000	4,000	4,763
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A
Acenaphthene	0	0		0	70	70.0	83.3
Anthracene	0	0		0	300	300	357
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	238
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A

Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.12	
2-Chloronaphthalene	0	0		0	800	800	953	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,191	
1,3-Dichlorobenzene	0	0		0	7	7.0	8.33	
1,4-Dichlorobenzene	0	0		0	300	300	357	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	714	
Dimethyl Phthalate	0	0		0	2,000	2,000	2,381	
Di-n-Butyl Phthalate	0	0		0	20	20.0	23.8	
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	23.8	
Fluorene	0	0		0	50	50.0	59.5	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.76	
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	40.5	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	11.9	
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	23.8	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.083	

☒ CRL

CCT (min): 0.303

PMF: 1

Analysis Hardness (mg/l): N/A

Analysis pH: N/A

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

Hexavalent Chromium	0	0		0	N/A	N/A	N/A
Total Cobalt	0	0		0	N/A	N/A	N/A
Total Copper	0	0		0	N/A	N/A	N/A
Free Cyanide	0	0		0	N/A	N/A	N/A
Dissolved Iron	0	0		0	N/A	N/A	N/A
Total Iron	0	0		0	N/A	N/A	N/A
Total Lead	0	0		0	N/A	N/A	N/A
Total Manganese	0	0		0	N/A	N/A	N/A
Total Mercury	0	0		0	N/A	N/A	N/A
Total Nickel	0	0		0	N/A	N/A	N/A
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A
Total Selenium	0	0		0	N/A	N/A	N/A
Total Silver	0	0		0	N/A	N/A	N/A
Total Thallium	0	0		0	N/A	N/A	N/A
Total Zinc	0	0		0	N/A	N/A	N/A
Acrolein	0	0		0	N/A	N/A	N/A
Acrylonitrile	0	0		0	0.06	0.06	0.15
Benzene	0	0		0	0.58	0.58	1.46
Bromoform	0	0		0	7	7.0	17.6
Carbon Tetrachloride	0	0		0	0.4	0.4	1.01
Chlorobenzene	0	0		0	N/A	N/A	N/A
Chlorodibromomethane	0	0		0	0.8	0.8	2.01
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	2.39
1,2-Dichloroethane	0	0		0	9.9	9.9	24.9
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,2-Dichloropropane	0	0		0	0.9	0.9	2.26
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.68
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	50.3
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.5
Tetrachloroethylene	0	0		0	10	10.0	25.1
Toluene	0	0		0	N/A	N/A	N/A
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A
1,1,2-Trichloroethane	0	0		0	0.55	0.55	1.38
Trichloroethylene	0	0		0	0.6	0.6	1.51
Vinyl Chloride	0	0		0	0.02	0.02	0.05
2-Chlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A

2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A
2-Nitrophenol	0	0		0	N/A	N/A	N/A
4-Nitrophenol	0	0		0	N/A	N/A	N/A
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A
Pentachlorophenol	0	0		0	0.030	0.03	0.075
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	3.77
Acenaphthene	0	0		0	N/A	N/A	N/A
Anthracene	0	0		0	N/A	N/A	N/A
Benidine	0	0		0	0.0001	0.0001	0.0003
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.003
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0003
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.003
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.025
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.075
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	0.8
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	0.12	0.12	0.3
Dibenzo(a,h)Anthracene	0	0		0	0.0001	0.0001	0.0003
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.13
Diethyl Phthalate	0	0		0	N/A	N/A	N/A
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.13
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.13
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.075
Fluoranthene	0	0		0	N/A	N/A	N/A
Fluorene	0	0		0	N/A	N/A	N/A
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0002
Hexachlorobutadiene	0	0		0	0.01	0.01	0.025
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A
Hexachloroethane	0	0		0	0.1	0.1	0.25
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.003
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	0.002
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.013
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	8.3

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

☒ **Recommended WQBELs & Monitoring Requirements**

No. Samples/Month: 4

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 Boron	Report	Report	Report	Report	Report	µg/L	1,905	CFC	Discharge Conc > 10% WQBEL (no RP)
Hexavalent Chromium	0.21	0.32	12.4	19.3	30.9	µg/L	12.4	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Cobalt	Report	Report	Report	Report	Report	µg/L	22.6	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.31	0.48	18.4	28.7	46.0	µg/L	18.4	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Free Cyanide	0.079	0.12	4.76	7.43	11.9	µg/L	4.76	THH	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	5.96	9.3	357	557	893	µg/L	357	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	29.8	46.5	1,786	2,787	4,465	µg/L	1,786	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	8.03	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,191	THH	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	198	AFC	Discharge Conc > 10% WQBEL (no RP)
Acrolein	0.05	0.06	3.0	3.57	3.57	µg/L	3.0	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Chlorodibromomethane	Report	Report	Report	Report	Report	µg/L	2.01	CRL	Discharge Conc > 25% WQBEL (no RP)
Chloroform	0.11	0.18	6.79	10.6	17.0	µg/L	6.79	THH	Discharge Conc ≥ 50% WQBEL (RP)
Dichlorobromomethane	0.04	0.062	2.39	3.73	5.97	µg/L	2.39	CRL	Discharge Conc ≥ 50% WQBEL (RP)
1,1,2-Trichloroethane	0.023	0.036	1.38	2.16	3.46	µg/L	1.38	CRL	Discharge Conc ≥ 50% WQBEL (RP)

☒ **Other Pollutants without Limits or Monitoring**

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	11.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	2,858	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	0.5	µg/L	Discharge Conc < TQL
Total Chromium (III)	166	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS

Total Mercury	0.06	µg/L	Discharge Conc < TQL
Total Nickel	102	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	5.94	µg/L	Discharge Conc < TQL
Total Silver	10.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.29	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrylonitrile	0.15	µg/L	Discharge Conc < TQL
Benzene	1.46	µg/L	Discharge Conc < TQL
Bromoform	17.6	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	1.01	µg/L	Discharge Conc < TQL
Chlorobenzene	119	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	4,167	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	24.9	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	39.3	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	2.26	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.68	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	81.0	µg/L	Discharge Conc < TQL
Methyl Bromide	119	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	6,549	µg/L	Discharge Conc < TQL
Methylene Chloride	50.3	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	0.5	µg/L	Discharge Conc < TQL
Tetrachloroethylene	25.1	µg/L	Discharge Conc < TQL
Toluene	67.9	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	119	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	726	µg/L	Discharge Conc < TQL
Trichloroethylene	1.51	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.05	µg/L	Discharge Conc < TQL
2-Chlorophenol	35.7	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	11.9	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	119	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	2.38	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	11.9	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,905	µg/L	Discharge Conc < TQL
4-Nitrophenol	560	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.075	µg/L	Discharge Conc < TQL
Phenol	4,763	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	3.77	µg/L	Discharge Conc < TQL
Acenaphthene	20.2	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	357	µg/L	Discharge Conc < TQL

Benzidine	0.0003	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.003	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0003	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.003	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.025	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.075	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	238	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	0.8	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	64.3	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.12	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	953	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.3	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthracene	0.0003	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	191	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	8.33	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	179	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.13	µg/L	Discharge Conc < TQL
Diethyl Phthalate	714	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	595	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	23.8	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.13	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.13	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.075	µg/L	Discharge Conc < TQL
Fluoranthene	23.8	µg/L	Discharge Conc < TQL
Fluorene	59.5	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0002	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.025	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.19	µg/L	Discharge Conc < TQL
Hexachloroethane	0.25	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.003	µg/L	Discharge Conc < TQL
Isophorone	40.5	µg/L	Discharge Conc < TQL
Naphthalene	51.2	µg/L	Discharge Conc < TQL
Nitrobenzene	11.9	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.002	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.013	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	8.3	µg/L	Discharge Conc < TQL
Phenanthrene	1.19	µg/L	Discharge Conc < TQL
Pyrene	23.8	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.083	µg/L	Discharge Conc < TQL

Attachment 5 – TRC CALC

PA0021768_TRC_CALC

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9					
0.59	= Q stream (cfs)	0.5	= CV Daily		
2	= 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 = 0.080		1.3.2.iii	WLA_cfc = 0.070
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373		5.1c	LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 0.030		5.1d	LTA_cfc = 0.041
Source	Effluent Limit Calculations				
PENTOXSD TRG	5.1f	AML_MULT = 1.231			
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.037		AFC	
		INST MAX LIMIT (mg/l) = 0.120			
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 Analysis Spreadsheet

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name		
Species Tested	Ceriodaphnia		Somerset Borough STP		
Endpoint	Survival		Permit No.		
TIWC (decimal)	0.61		PA0021768		
No. Per Replicate	1				
TST b value	0.75				
TST alpha value	0.2				

Test Completion Date		
Replicate	8/15/2018	
No.	Control	
1	1	1
2	1	1
3	1	1
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	3	3

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

Test Completion Date		
Replicate	6/10/2019	
No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	3	3

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

Test Completion Date		
Replicate	6/9/2020	
No.	Control	
1	1	1
2	1	1
3	1	1
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	3	3

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

Test Completion Date		
Replicate	7/20/2021	
No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	3	3

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

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name		
Species Tested	Ceriodaphnia		Somerset Borough STP		
Endpoint	Reproduction		Permit No.		
TIWC (decimal)	0.61		PA0021768		
No. Per Replicate	1				
TST b value	0.75				
TST alpha value	0.2				

Test Completion Date			Test Completion Date		
Replicate	8/15/2018		Replicate	6/10/2019	
No.	Control	TIWC	No.	Control	TIWC
1	0.26	0.31	1	0.31	0.3
2	0.13	0.3	2	0.3	0.33
3	0.28	0.4	3	0.27	0.34
4	0.25	0.18	4	0.29	0.33
5	0.25	0.34	5	0.28	0.34
6	0.17	0.36	6	0.33	0.35
7	0.13	0.31	7	0.28	0.35
8	0.09	0.21	8	0.25	0.34
9	0.22	0.31	9	0.27	0.36
10	0.26	0.31	10	0.29	0.32
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.204	0.303	Mean	0.287	0.336
Std Dev.	0.068	0.065	Std Dev.	0.023	0.017
# Replicates	10	10	# Replicates	10	10

T-Test Result	5.7413	T-Test Result	15.8354
Deg. of Freedom	16	Deg. of Freedom	17
Critical T Value	0.8647	Critical T Value	0.8633
Pass or Fail	PASS	Pass or Fail	PASS

Test Completion Date			Test Completion Date		
Replicate	6/9/2020		Replicate	7/20/2021	
No.	Control	TIWC	No.	Control	TIWC
1	0.42	0.43	1	0.28	0.42
2	0.34	0.37	2	0.37	0.39
3	0.41	0.32	3	0.42	0.37
4	0.4	0.44	4	0.4	0.47
5	0.31	0.43	5	0.42	0.45
6	0.39	0.32	6	0.38	0.41
7	0.33	0.32	7	0.4	0.38
8	0.42	0.4	8	0.29	0.46
9	0.28	0.38	9	0.36	0.36
10	0.36	0.38	10	0.35	0.4
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.366	0.379	Mean	0.367	0.411
Std Dev.	0.049	0.047	Std Dev.	0.049	0.038
# Replicates	10	10	# Replicates	10	10

T-Test Result	5.5172	T-Test Result	8.0556
Deg. of Freedom	16	Deg. of Freedom	17
Critical T Value	0.8647	Critical T Value	0.8633
Pass or Fail	PASS	Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name		
Species Tested	Pimephales		Somerset Borough STP		
Endpoint	Survival		Permit No.		
TIWC (decimal)	0.61		PA0021768		
No. Per Replicate	10				
TST b value	0.75				
TST alpha value	0.25				

Test Completion Date 8/15/2018			Test Completion Date 6/10/2019		
Replicate No.	Control	TIWC	Replicate No.	Control	TIWC
1	0.9	1	1	1	0.9
2	1	1	2	0.9	0.9
3	1	1	3	1	1
4	1	1	4	1	0.9
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.975	1.000	Mean	0.975	0.925
Std Dev.	0.050	0.000	Std Dev.	0.050	0.050
# Replicates	4	4	# Replicates	4	4

T-Test Result	26.1497	T-Test Result	13.2898
Deg. of Freedom	3	Deg. of Freedom	5
Critical T Value	0.7649	Critical T Value	0.7267
Pass or Fail	PASS	Pass or Fail	PASS

Test Completion Date 6/9/2020			Test Completion Date 7/20/2021		
Replicate No.	Control	TIWC	Replicate No.	Control	TIWC
1	1	0.9	1	1	1
2	0.9	1	2	1	1
3	1	0.9	3	1	1
4	0.8	1	4	1	1
5			5	1	1
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.925	0.950	Mean	1.000	1.000
Std Dev.	0.096	0.058	Std Dev.	0.000	0.000
# Replicates	4	4	# Replicates	5	5

T-Test Result	10.2456	T-Test Result	
Deg. of Freedom	5	Deg. of Freedom	
Critical T Value	0.7267	Critical T Value	
Pass or Fail	PASS	Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name	Somerset Borough STP	
Species Tested	Pimephales		Permit No.	PA0021768	
Endpoint	Growth				
TIWC (decimal)	0.61				
No. Per Replicate	10				
TST b value	0.75				
TST alpha value	0.25				

Test Completion Date 8/15/2018			Test Completion Date 6/10/2019		
Replicate No.	Control	TIWC	Replicate No.	Control	TIWC
1	0.41	0.41	1	0.42	0.44
2	0.4	0.43	2	0.41	0.41
3	0.4	0.43	3	0.41	0.49
4	0.38	0.37	4	0.46	0.45
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.398	0.410	Mean	0.425	0.448
Std Dev.	0.013	0.028	Std Dev.	0.024	0.033
# Replicates	4	4	# Replicates	4	4
T-Test Result	7.5041		T-Test Result	6.8565	
Deg. of Freedom	4		Deg. of Freedom	5	
Critical T Value	0.7407		Critical T Value	0.7267	
Pass or Fail	PASS		Pass or Fail	PASS	

Test Completion Date 6/9/2020			Test Completion Date 7/20/2021		
Replicate No.	Control	TIWC	Replicate No.	Control	TIWC
1	0.35	0.44	1	0.41	0.42
2	0.37	0.42	2	0.43	0.4
3	0.37	0.43	3	0.35	0.37
4	0.35	0.45	4	0.41	0.39
5			5	0.38	0.43
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.360	0.435	Mean	0.396	0.402
Std Dev.	0.012	0.013	Std Dev.	0.031	0.024
# Replicates	4	4	# Replicates	5	5
T-Test Result	21.2278		T-Test Result	7.0117	
Deg. of Freedom	5		Deg. of Freedom	7	
Critical T Value	0.7267		Critical T Value	0.7111	
Pass or Fail	PASS		Pass or Fail	PASS	

WET Summary and Evaluation

Facility Name	Somerset Borough STP
Permit No.	PA0021768
Design Flow (MGD)	2
Q ₇₋₁₀ Flow (cfs)	0.59
PMF _a	1
PMF _c	1

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
		8/15/18	6/10/19	6/9/20	7/20/21
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
		8/15/18	6/10/19	6/9/20	7/20/21
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
		8/15/18	6/10/19	6/9/20	7/20/21
Pimephales	Survival	PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
		8/15/18	6/10/19	6/9/20	7/20/21
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type Chronic
TIWC 84 % Effluent
Dilution Series 21, 42, 84, 92, 100 % Effluent
Permit Limit None
Permit Limit Species

Attachment 7 – Pre-Draft Survey Response



www.eadsgroup.com

July 13, 2023

Department of Environmental Protection: Bureau of Clean Water
Southwest Regional Office Building
Attn: William C. Mitchell, E.I.T., Project Manager
400 Waterfront Drive
Pittsburgh, PA 15222

**RE: THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET
PRE-DRAFT SURVEY
NPDES PERMIT NO. PA0021768**

Dear William,

The Municipal Authority of the Borough of Somerset (MABS) received your Pre-Draft NPDES – Sewage letter via email on February 17, 2023. The letter included a listing of WQBELs and reporting requirements established based on DEP's review of MABS's most recent NPDES renewal application. The letter requested the return of a Pre-Draft Survey and offered an opportunity to conduct additional sampling. MABS returned the survey within the requested 30-day period and also elected to conduct additional sampling. Results and opinions of the additional sampling are described herein.

Historic NPDES Information, Industrial Pretreatment Local Limits, & Service Area

1. NPDES Permit 1992 and Renewal 1996
 - a. MABS's 1992 NPDES permit required monitoring of Aluminum, Copper, Hexavalent Chromium, Silver, and Zinc.
 - b. The monitoring requirement for Aluminum, Copper, Hexavalent Chromium, Silver, and Zinc was removed from the 1996 NPDES permit because there was no reasonable chance for the effluent from the plant to violate in-stream water quality standards for these parameters
2. Water Quality Based Effluent Limits
 - a. MABS successfully appealed draft NPDES limits in 1992 by completing a study to determine the Water Quality Based Effluent Limits. The water quality based effluent limits study incorporated State Water Quality Standards, site specific receiving stream hardness, receiving stream flows, dissolved-total metal ratios, and receiving stream background pollutant concentrations. The results of the study are provided below. Please note that all values are expressed in milligram per liter (mg/L).

Outfall No.	Pollutant	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)
001	Aluminum	0.544	1.09	1.36
001	Copper	0.039	0.078	0.098
001	Hexavalent Chromium	0.010	0.020	0.025
001	Iron	1.68	3.36	4.20
001	Dissolved Iron	0.325	0.65	0.812
001	Lead	0.013	0.026	0.032
001	Silver	0.010	0.020	0.025
001	Zinc	0.285	0.57	0.712

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3. Industrial Pretreatment Local Limits

- a. MABS developed Industrial Pretreatment Local Limits in 1997 for six (6) Categorical or Significant Industrial Users. All of the Industrial Users which prompted the creation of the Industrial Pretreatment Program no longer exist. There are only two (2) sewer service customers who remain in the Industrial Pretreatment program. These customers are UPMC Somerset a community hospital (included in the program because they exceed 25,000 gpd of water use) and Assa Abloy (aka Rockwood North) a metal finishing company. Assa Abloy utilizes water treatment in its process and discharges potable water to the sanitary system. They have been included in the program under a five (5) year trial period to ensure that their discharge is consistent with potable water and does not require pretreatment or further monitoring.
- b. There are no known or regulated sources of metals discharging to the POTW. The classification of all sewage within the POTW is domestic.

The “Development of Industrial Pretreatment Local Limits” is attached as **Exhibit A**. This document includes as Appendix G “Water Quality Standard” and as Appendix H the “Evaluation of Effluent Limits at the Somerset Sewage Treatment Plant. The Water Quality Based Effluent Limits are presented on phase 27, Table 16 of Appendix H.

We request that DEP provide the basis data for the development of the Pre-Draft NPDES Limits dated February 17, 2023 to allow comparison against the data and findings presented in Exhibit A. Also, we request that the data in Exhibit A be considered when calculating the Draft NPDES Limits.

Additional Sampling

MABS collected four (4) additional 24-hour composite samples on a weekly basis starting from April 11, 2023 and ending May 2, 2023. Geochemical Testing (certified laboratory) analyzed all samples and provided reports. Geochemical Testing utilized a subcontractor to perform the analysis for Free Cyanide. The results were compared to the original NPDES sampling sets and averaged. The results are presented individually by sampling period and combined. The results table is attached as **Exhibit B**. The laboratory reports and chain of custody forms are attached as **Exhibit C**.

1. General

a. WQBELs

Outfall No.	Pollutant	Average Monthly (ug/L)	Maximum Daily (ug/L)	IMAX (ug/L)	Target QL (ug/L)
001	Total Aluminum	Report	Report	Report	10.0
001	Total Boron	Report	Report	Report	200.0
001	Hexavalent Chromium	Report	Report	Report	1.0
001	Total Cobalt	Report	Report	Report	1.0
001	Total Copper	18.4	28.7	46.0	4.0
001	Free Cyanide	4.76	7.43	11.9	1.0
001	Dissolved Iron	Report	Report	Report	20.0
001	Acrolein	3.0	3.57	3.57	2.0
001	Chlorodibromomethane	Report	Report	Report	0.5
001	Chloroform	6.79	10.6	17.0	0.5
001	Dichlorobromomethane	2.39	3.73	5.97	0.5
001	1, 1, 2 - Trichloroethane	1.38	2.16	3.46	0.5

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- b. Standardized Testing Limits
 - i. The standard testing methods and Quantitative Limits (QL) utilized by Geochemical Testing represent the lowest acceptable limits of industry standard tests. The sample results present all values at a Reporting Limit. Geochemical Testing is able to provide results below the Reporting Limit down to the Detection Limit; however, these values would be below the accepted level of accuracy of the standardized test.
 - ii. Reporting Limit – lowest level of accuracy for the standardized test.
 - iii. Detection Limit – limit below the acceptable accuracy level of the standardized test.
- 2. Acrolein
 - a. The Reporting Limit for Acrolein is 5.0 µg/l and the WQBEL QLs for all Pre-Draft NPDES limits are below the Reporting Limit. Therefore, all published values, current and future, will be above the NPDES limits because of testing limitations. Geochemical Testing can provide values down to the Detection Limit, but these values would not be accurate and could still result in presentation of values above the NPDES limits.
 - b. All sample results for Acrolein were reported to be below 5.0 µg/l.
 - c. We request the following be considered by DEP as part of establishing the limit for Acrolein.
 - i. Consider Exhibit A data when calculating the NPDES Limit of Acrolein.
 - ii. Evaluate increasing the NPDES limits to 5.0 µg/l or greater.
 - iii. Evaluate acceptance of Detection Limit analyses.
- 3. Free Cyanide
 - a. Geochemical Testing used a higher Reporting limit for Free Cyanide in its 2021 sample series.
 - b. The most recent sample series used a Reporting Limit of 1 µg/l and all samples yielded values below the Pre-Draft NPDES Limits.
 - c. Geochemical Testing is not able to perform Free Cyanide testing down to 1 ug/L and in turn subcontracted out this testing to M.J. Reider Associates, Inc. Test results were not received by the permittee until 4-6 weeks after submitting the sample. This delay may be problematic in meeting EDMR reporting requirements.
 - d. We request that DEP consider Exhibit A data when calculating the NPDES Limit of Free Cyanide.
 - e. The 2023 test results demonstrate that there is no measurable amount of Free Cyanide in the effluent and we believe it is appropriate to remove the limit. Alternatively, we request that DEP consider modifying the NPDES limit to “REPORT” if DEP believes it is a critical analyses and accept a Reporting Limit of 20 ug/L.
- 4. Chloroform and Dichlorobromomethane
 - a. Chloroform and dichlorobromomethane were both above the NPDES limit in at least one of the sampling periods. Both pollutants are likely products of liquid chlorine disinfection used by the WWTP.
 - b. We will evaluate the dosing strength of liquid chlorine to see if it can be lowered while still maintaining effective disinfection.
 - c. We request that DEP consider Exhibit A data when calculating the NPDES Limit of chloroform and dichlorobromomethane.

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- d. If the NPDES limit of both pollutants remain MABS will look to implement non-chlorine based disinfection techniques, most likely UV disinfection. The POTW is currently subject to a Hydraulic Overload Corrective Action Plan (CAP). MABS is in design of Phase 1 of the CAP which focuses on collection system improvements. Phase 2 includes upgrades to the WWTP. Phase 2 is likely to occur between 2026 and 2028. We request a “Report” limit for both chloroform and dichlorobromomethane in the upcoming NPDES permit term to allow for time to design, permit, fund, and construct a UV disinfection system (or alternative) without the encumbrance of permit limit violations. It is anticipated that the implementation of a UV system will take a minimum of three (3) years and approximately \$2,000,000 in funding.
5. Chlorodibromomethane
 - a. Chlorodibromomethane has a Reporting Limit above the WQBEL QL. However, the Pre-Draft NPDES Limit is “Report”.
 - b. MABS requests that DEP Consider Exhibit A data when calculating the NPDES Limit of chlorodibromomethane.
 - c. Alternatively, MABS requests that DEP acknowledge that the use of a Reporting Limit of 1.0 µg/l is acceptable.
6. 1,1,2-Trichloroethane
 - a. 1,1,2-Trichloroethane has a Reporting Limit above the WQBEL QL.
 - b. All samples yielded values less than the Reporting Limit.
 - c. We request that DEP consider Exhibit A data when calculating the NPDES Limit of 1,1,2-Trichloroethane

Summary

MABS requests the following considerations when preparing the Draft NPDES Limits:

1. Past NPDES renewal and Industrial Pretreatment Local Limits information when establishing the next NPDES limit criteria if it was not considered.
2. The removal of reporting requirements for any pollutant with no reasonable chance for the effluent from the WWTP to violate in-stream water quality standards.
3. Acknowledgement of the use of a Reporting Limit when it exceeds the WQBEL QL. These pollutants appear to be Free Cyanide, 1,1,2-Trichloroethane, and Chlorodibromomethane.
4. Further review of Acrolein.
5. Reporting requirement for Chloroform and Dichlorobromomethane for the next NPDES cycle and confirmation of NPDES limits.

Please contact me if you have any questions regarding this matter.

Respectfully submitted,
The EADS Group, Inc.



By: Jacob T. Bolby, P.E.

Cc: Michele Enos, MABS
William Moon, MABS

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