

Application Type	Renewal
Facility Type	Municipal
Major / Minor	Minor

# NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

 Application No.
 PA0081001

 APS ID
 275072

 Authorization ID
 1389153

### Applicant and Facility Information

Applicant Name	Saint Thomas Township Municipal Authority	Facility Name	St Thomas Township STP	
Applicant Address	175 Saint Thomas Edenville Road	Facility Address	4500 Gary Way	
	St Thomas, PA 17252		Chambersburg, PA 17202	
Applicant Contact	Larry Truett	Facility Contact	Barry Rouzer	
Applicant Phone	(717) 360-5611	Facility Phone	(717) 369-5495	
Client ID	62428	Site ID	451934	
Ch 94 Load Status	Not Overloaded	Municipality	Saint Thomas Township	
Connection Status	No Limitations	County	Franklin	
Date Application Rece	Date Application Received February 16, 2022		No	
Date Application Acce	pted <u>March 23, 2022</u>	If No, Reason	Significant CB Discharge	
Purpose of Application	n NPDES Renewal.			

### Summary of Review

Saint Thomas Township Municipal Authority (STTMA) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on August 8, 2017 and became effective on September 1, 2017. The permit expired on August 31, 2022 but the terms and conditions have been extended since that time.

Based on the review, it is recommended that the permit be drafted.

Sludge use and disposal description and location(s): Sludge is processed onsite prior to being land applied under PAG083560.

### Public Participation

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

Approve	Deny	Signatures	Date
х		Jiusu Kim Jinsu Kim / Environmental Engineering Specialist	October 20, 2022
х		Daniel W. Martin Daniel W. Martin, P.E. / Environmental Engineer Manager	November 15, 2022

ischarge, Receivin	g Waters and Water Supply Info	rmation			
Outfall No. 001		Design Flow (MGD)	0.40		
Latitude 39° 5	54' 13.45"	Longitude	-77º 44' 45.00"		
Quad Name Ch	ambersburg	Quad Code	1924		
Wastewater Descri	ption: Treated Sewage				
Receiving Waters	Back Creek	Stream Code	59902		
NHD Com ID	49469690	RMI	8.14		
Drainage Area	61.2 mi <sup>2</sup>	Yield (cfs/mi <sup>2</sup> )	0.1117		
Q7-10 Flow (cfs)	6.82	Q7-10 Basis	USGS Gage no. 01614500		
Elevation (ft)	513	Slope (ft/ft)			
Watershed No.	13-C	Chapter 93 Class.	WWF		
Existing Use	None	Existing Use Qualifier	N/A		
Exceptions to Use	None	Exceptions to Criteria	N/A		
Assessment Status	Attaining Use(s)				
TMDL Status	N/A	Name N/A			
Nearest Downstrea	m Public Water Supply Intake	PA-MD Border			
PWS Waters	Conococheague Creek	Flow at Intake (cfs)	unknown		
PWS RMI	N/A	Distance from Outfall (mi)	20		

### Drainage Area

The discharge is to Back Creek at RM 8.14. A drainage area upstream of the point of discharge is estimated to be 61.1 sq.mi., according to USGS StreamStats available at https://streamstats.usgs.gov/ss/.

### Streamflow

There were two (2) USGS gauging stations in the vicinity of the point of discharge. Both are currently inactive. One of these stations was located about 0.8 mile downstream but the data would be obsolete as they were collected from 1976 through 1978. Another station was located about 3.8 miles upstream but have very limited datasets collected from June 2001 through September 2001. As a result, the data from these USGS gauging stations will not be used to estimate the streamflow. Previously, the station located on the Conococheague Creek at Fairview, MD (station no. 01614500), about 25 miles downstream from the point of discharge, was used to estimate the streamflow. Historically, low-flow statistic data from this gauging station were used to estimate streamflow at the point of discharge using the Low-Flow Yield approach. DEP has determined to once again use low-flow statistic data from this gauging station to estimate the streamflow. Accordingly,

Low-Flow Yield =  $Q7-10_{gauge}$  / Drainage Area<sub>gauge</sub> = 55.2 cfs / 494 sq.mi. = 0.1117 cfs/sq.mi. Q7-10<sub>site</sub> = Low-Flow Yield \* Drainage Area<sub>site</sub> = 0.1117 cfs/sq.mi. \* 61.1 sq.mi. = 6.82 cfs Q1-10/Q7-10 = 45.079 cfs / 55.2 cfs = 0.816 Q30-10/Q7-10 = 1.188

### Stream Characteristics

Under 25 Pa Code §93.9z, Back Creek (main stem, US 30 to Mouth) is designated as warm water and migratory fishes. Back Creek is a tributary of Conococheague Creek, which is also designated warm water and migratory fishes. Back Creek is not a Class A Wild Trout stream; therefore no Class A Wild Trout Fishery is impacted by this discharge. No special protection waters such as high-quality and exception value waters are impacted by this discharge.

The discharge is located in a stream segment listed as attaining uses according to PA's 2020 integrated water quality monitoring and assessment report.

### Water Supply Intake

The nearest downstream public water supply intake is PA-MD border which is about 20 miles downstream from the point of discharge. Considering the distance and nature of discharge, the discharge is not expected to impact the water supply intake.

### **Treatment Facility Summary** Treatment Facility Name: St Thomas Township WWTP WQM Permit No. **Issuance Date** 2882419 05/18/2012, 07/05/2016 & 05/24/2021 Degree of Avg Annual Waste Type Treatment Process Type Disinfection Flow (MGD) Secondary With Ammonia And Sequencing Batch Sodium Hypochlorite 0.40 Sewage Phosphorus Reactor Hydraulic Capacity **Organic Capacity** Biosolids (MGD) (lbs/day) Load Status **Biosolids Treatment** Use/Disposal 0.40 634 Not Overloaded Aerobic Digestion Land Applied

St. Thomas Township WWTP serves St. Thomas Township (99%) and Hamilton Township (1%). All sewer systems are 100% separated. The facility is located at 4500 Gary Way, Chambersburg, PA 17202. The existing Water Quality Management permit no. 2882419 was amended on May 18, 2012 for the addition of a chemical feed system for phosphorus removal, on July 5, 2016 for replacement of gas chlorination system with sodium hypochlorite (liquid) disinfection system and on May 24, 2021 for installation of a new control panel, decanter actuators, mixers DO sensors in SBR basins. The treatment process, according to the application, is as follows:

Influent Pump Station  $\rightarrow$  Sequencing Batch Reactors (2)  $\rightarrow$  Chlorine Contact Tank  $\rightarrow$  Outfall 001 to Back Creek

Aluminum Chloride is added for phosphorous removal. Lime is added for pH control. Solids from SBRs are sent to aerobic sludge digesters (3) prior to land application.

The facility currently serves wastewater generated from a number of commercial users but none of these users are contributing industrial wastewater to the sewer system; therefore, the facility is not required to have an EPA-approved pretreatment program.

	Compliance History									
Summary of DMRs:	A summary of past 12-month DMR data is presented on the next page.									
Summary of Inspections:	07/01/2021: Brandon Bettinger, DEP Water Quality Specialist, conducted a routine inspection. No violation was noted at the time of inspection. 03/01/2021: Brandon Bettinger conducted an administrative inspection to follow up on Sanitary Sewer Overflows (SSOs) as a result of rain event and snow melt on 2/28/2021 and 3/1/2021 (violations). A 5-day report summarizing the event was requested.									
Other Comments:	A notice of violation (NOV) letter was sent out on March 2, 2021 for SSOs occurred on 2/28 an 3/1. DEP's database revealed that there is no open violation associated with this facility or permittee.									

### Effluent Data

### DMR Data for Outfall 001 (from May 1, 2021 to April 30, 2022)

Parameter	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21
Flow (MGD)												
Average Monthly	0.182	0.161	0.204	0.160	0.131	0.159	0.141	0.202	0.142	0.155	0.175	0.185
Flow (MGD)												
Daily Maximum	0.396	0.203	0.531	0.280	0.271	0.406	0.277	0.814	0.218	0.196	0.336	0.322
pH (S.U.)												
Minimum	6.28	6.85	6.78	6.75	6.5	6.15	6.44	6.54	6.59	6.09	6.54	6.24
pH (S.U.)												
Instantaneous												
Maximum	7.02	7.21	7.30	7.07	7.03	7.07	6.86	6.85	6.99	6.9	6.90	7.53
DO (mg/L)												
Minimum	5.0	5.2	5.9	5.0	5.3	5.1	5.3	5.2	5.1	5.1	5.2	5.5
TRC (mg/L)	0.00	0.00	0.00	0.07	0.00	0.40	0.00	0.40	0.04	0.00	0.00	
Average Monthly	0.38	0.29	0.29	0.37	0.26	0.16	0.26	0.18	0.21	0.26	0.28	0.3
TRC (mg/L)												
Instantaneous Maximum	0.57	0.46	0.61	0.58	0.65	0.39	0.73	0.56	0.49	0.51	0.66	0.65
CBOD5 (lbs/day)	0.57	0.40	0.61	0.56	0.65	0.39	0.73	0.56	0.49	0.51	0.00	0.05
Average Monthly	< 6.0	< 3.0	< 4.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 2.0	< 4.0	< 3.0	< 3.0
CBOD5 (lbs/day)	< 0.0	< 3.0	< 4.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 2.0	< 4.0	< 3.0	< 3.0
Weekly Average	14.0	< 3.0	7.0	3.0	3.0	5.0	4.0	3.0	< 3.0	7.0	< 4.0	< 3.0
CBOD5 (mg/L)	14.0	< 0.0	7.0	0.0	0.0	0.0	4.0	0.0	< 0.0	7.0	< 4.0	< 0.0
Average Monthly	< 3.4	< 2.1	< 3.3	< 2.1	< 2.48	< 2.67	< 2.2	2.02	< 2.0	< 3.01	< 2.0	< 2.1
CBOD5 (mg/L)			10.0		12110	12.01		2:02	12.0	10101	12.0	3 2.1
Weekly Average	7.53	2.36	7.08	2.29	2.72	4.63	2.6	2.09	< 2.0	5.83	< 2.0	2.2
BOD5 (lbs/day)												
Raw Sewage Influent												
Average Monthly	236	186	195	125	148	165	258	196	236	189	189	218
BOD5 (lbs/day)												
Raw Sewage Influent												
Daily Maximum	394	241	229	143	169	274	392	373	469	277	225	316
BOD5 (mg/L)												
Raw Sewage Influent												
Average Monthly	166	149	155	104	150	142	215	164	197	154	138	151
TSS (lbs/day)												
Average Monthly	2.0	2.0	4.0	< 3.0	2.0	< 3.0	< 2.0	< 3.0	3.0	< 3.0	< 7.0	5.0
TSS (lbs/day)												
Raw Sewage Influent					1.5.5							
Average Monthly	152	147	155	104	136	115	152	119	124	107	165	190

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Parameter	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21
TSS (lbs/day)												
Raw Sewage Influent												
Daily Maximum	201	161	198	124	257	224	250	208	276	167	202	234
TSS (lbs/day)												
Weekly Average	2.0	4.0	4.0	5.0	4.0	4.0	4.0	6.0	4.0	7.0	12.0	7.0
TSS (mg/L)												
Average Monthly	1.3	1.9	2.9	< 2.4	2.32	< 2.5	< 2.0	< 2.4	2.3	< 2.8	< 5.0	3.5
TSS (mg/L)												
Raw Sewage Influent												
Average Monthly	104	118	125	83	138	105	127	97	102	87	120	132
TSS (mg/L)												
Weekly Average	1.5	3.0	3.5	4.0	3.5	3.5	4.0	4.5	4.0	6.0	10.5	5.0
Fecal Coliform												
(CFU/100 ml)												
Geometric Mean	< 2.0	< 2.0	3.0	< 1.0	< 14	21	< 2.0	19.0	< 4.0	< 2.0	< 2.0	< 2.0
Fecal Coliform												
(CFU/100 ml)												
Instantaneous												
Maximum	6.0	6.0	50	< 1.0	118	69	6.0	192	28.0	3.0	5	6.0
Nitrate-Nitrite (mg/L)												
Average Monthly	13.344	16.565	12.593	20.125	27.789	23.961	26.9	24.733	24.3	17.99	21.39	16.43
Nitrate-Nitrite (lbs)												
Total Monthly	527.7	653.4	427.3	806.7	866.7	828	965.2	921.8	871.6	719.9	902.7	760.3
Total Nitrogen (mg/L)												
Average Monthly	< 16.623	< 19.332	16.106	< 22.764	< 28.899	< 26.201	< 28.39	< 25.733	< 25.872	< 20.38	< 23.43	< 19.35
Total Nitrogen (lbs)												
Effluent Net												
Total Monthly	< 721.3	< 764.2	< 555.2	< 904.9	< 901.6	< 908.7	< 1016	< 959.7	< 926.6	< 819.6	< 991.9	< 888.6
Total Nitrogen (lbs)												
Total Monthly	< 721.3	< 764.2	< 555.2	< 904.9	< 901.6	< 908.7	< 1016	< 959.7	< 926.6	< 819.6	< 991.9	< 888.6
Total Nitrogen (lbs)												
Effluent Net												
Total Annual								7306				
Total Nitrogen (lbs)												
Total Annual								12080				
Ammonia (lbs/day)												
Average Monthly	< 3.0	< 1.9	< 3.4	< 1.8	< 0.06	< 2.0	< 0.9	< 0.60	< 0.8	< 2.0	< 0.80	< 2.0
Ammonia (mg/L)												
Average Monthly	1.983	< 1.466	< 2.702	< 1.495	0.541	< 1.25	< 0.79	< 0.8	< 0.753	< 1.283	< 0.56	1.417
Ammonia (lbs)												
Total Monthly	< 130.5	< 58.6	< 101.7	< 55.6	< 17	< 45.6	< 27.7	< 19.0	< 26.1	< 51.1	< 24.2	< 63.5
Ammonia (lbs)												
Total Annual								96.55				

### NPDES Permit Fact Sheet St Thomas Township STP

### NPDES Permit No. PA0081001

Parameter	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21
TKN (mg/L)												
Average Monthly	< 3.0	< 2.77	< 3.5	< 2.64	< 34.9	< 2.24	< 1.46	< 1.0	< 1.57	< 1.85	< 2.04	< 2.92
TKN (lbs)												
Total Monthly	< 132.9	< 110.8	< 127.1	< 98.1	< 1.11	< 80.7	< 50.8	< 37.9	< 55.0	< 77.8	< 89.2	< 128.3
Total Phosphorus												
(lbs/day)												
Average Monthly	2.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	2.0
Total Phosphorus												
(mg/L)												
Average Monthly	1.67	0.755	0.818	0.953	2.24	1.72	1.69	2.254	2.18	1.65	1.64	1.658
Total Phosphorus (lbs)												
Effluent Net												
Total Monthly	71.0	29.8	34.0	37.4	71.0	59.5	60.7	80.8	79.5	65.9	71.8	75.7
Total Phosphorus (lbs)												
Total Monthly	71	29.8	34.0	37.4	71	59.5	60.7	80.8	79.5	65.9	71.8	75.7
Total Phosphorus (lbs)												
Effluent Net												
Total Annual								779				
Total Phosphorus (lbs)												
Total Annual								779				

### **Existing Effluent Limitations and Monitoring Requirements**

The table below summarizes effluent limitations and monitoring requirements specified in the current NPDES permit renewal.

			Effluent L	imitations			Monitoring Requirements	
Parameter	Mass Units	; (Ibs/day) <sup>(1)</sup>		Concentrati		Minimum <sup>(2)</sup>	Required	
Parameter	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
		Report						
Flow (MGD)	Report	Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	83	133	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	xxx	1/week	24-Hr Composite
Total Suspended Solids	100	150	XXX	30.0	45.0	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	xxx	1/week	24-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	xxx	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	xxx	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Ammonia-Nitrogen May 1 - Oct 31	20.0	xxx	XXX	6.0	XXX	12	2/week	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	60	XXX	XXX	18.0	XXX	xxx	2/week	24-Hr Composite

		Effluent Limitations									
Parameter	Mass Units	(lbs/day) <sup>(1)</sup>		Concentrat	Minimum <sup>(2)</sup>	Required					
Farameter	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum	Measurement Frequency	Sample Type			
								24-Hr			
AmmoniaN	Report	Report	XXX	Report	XXX	XXX	2/week	Composite			
								24-Hr			
KjeldahlN	Report	XXX	XXX	Report	XXX	XXX	2/week	Composite			
								24-Hr			
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	Composite			

### NPDES Permit Fact Sheet St Thomas Township STP

		Effluent Limitations								
Parameter	Mass Units	(lbs/day) <sup>(1)</sup>		Concentrat	Minimum <sup>(2)</sup>	Required				
Farameter	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum	Measurement Frequency	Sample Type		
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation		
Total Phosphorus	Report	Report	xxx	Report	xxx	xxx	2/week	24-Hr Composite		
Net Total Nitrogen	Report	7306	xxx	xxx	xxx	ххх	1/month	Calculation		
Net Total Phosphorus	Report	974	XXX	XXX	XXX	ххх	1/month	Calculation		

### **Development of Effluent Limitations and Monitoring Requirements**

Outfall No.	001		Design Flow (MGD)	0.4
Latitude	39º 54' 14.00'	II.	Longitude	-77º 44' 45.18"
Wastewater De	escription:	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 <sub>5</sub>	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	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
Solids	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
рН	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform				
(5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform				
(5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform				
(10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform				
(10/1 - 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

### Water Quality-Based Effluent Limitations (WQBELs)

### CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's technical guidance no. 391-2000-007 describes the technical methods contained in the model for conducting wasteload allocation analyses and for determining recommended limits for point source discharges. DEP recently updated this model (ver. 1.1) to include new ammonia criteria that has been approved by US EPA as part of the 2017 Triennial Review.

A multiple discharge analysis is needed to consider the loadings from Camp Joy EI (NPDES permit no. PA0082627) which is located approximately 5 miles downstream from the point of discharge. The model was properly utilized as the DO replenishment begins within the selected stream reach. The model output indicates that existing limits are still protective of water quality. Therefore, no changes will be made to the existing limits.

### Toxics

An application for a minor sewage facility greater than 0.05 MGD but less than 1.0 MGD requires sampling of a limited number of toxic pollutants including Total Copper, Total Lead, Total Zinc, TDS, Chloride, Bromide, and Sulfate. Sample results from these pollutants were entered into DEP's Toxics Management Spreadsheet. The spreadsheet shows no effluent limits or monitoring requirements for these pollutants.

### Total Residual Chlorine

Since chlorine is used for disinfection, TRC effluent levels must be regulated. A TBEL of 0.5 mg/L is the existing permit requirement and is directly derived from the state BAT standard found in 25 Pa Code §92a.48(b)(2). DEP's TRC\_CALC worksheet is utilized to determine if this existing TBEL is still appropriate. The worksheet indicates that the existing TBEL as well as BPJ instantaneous maximum limit of 1.6 mg/L is still appropriate to protect water quality standards in the receiving water. No change is therefore recommended.

### **Best Professional Judgment (BPJ) Limitations**

### Dissolved Oxygen

A minimum of 5.0 mg/L for DO is an existing effluent limit and will remain unchanged in the draft permit as recommended by DEP's SOP. This requirement has also been assigned to other major sewage facilities in the region. 5.0 mg/L is taken directly from 25 Pa. Code § 93.7(a) and it is also determined to be appropriate according to water quality modeling.

### Total Phosphorus

DEP's SOP no. BPNPSM-PMT-033 recommends a monitoring requirement for Total Phosphorus and effluent limit of 2.0 mg/L if the discharge of Total Phosphorus contributes or threatens to impair existing or designated uses in a free flowing water in which the determination can be made through a stream enrichment risk analysis. Since the receiving stream, Back Creek, is not impaired for nutrients, no effluent limit is needed. Because the facility is already required to monitor for Total Phosphorus as part of DEP's Chesapeake Bay Tributary Strategy, no additional requirement is needed.

### **Additional Considerations**

### Flow Monitoring

The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

### Influent BOD & TSS Monitoring

As a result of negotiation with EPA, the existing influent monitoring reporting requirement for TSS and BOD5 will be maintained in the draft permit. This requirement has been consistently assigned to all municipal wastewater treatment facilities.

### Chesapeake Bay Strategy

Chesapeake Bay TMDL identifies the necessary pollution reductions of nitrogen, phosphorus and sediment across Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia and sets pollution limits necessary to meet applicable water quality standards in the Chesapeake Bay and its tidal tributaries. In order to meet these reduction goals, DEP has developed multiple plans for years including Chesapeake Bay Tributary Strategy (12/2004), Phase 1 Watershed Implementation Plan (January 2011), Phase 2 Watershed Implementation Plan (March 2012), and Phase 3 Watershed Implementation Plan (August 2019). More details on these plans are available at <a href="https://www.dep.pa.gov">www.dep.pa.gov</a>.

As part of Phase 3 Watershed Implementation Plan, Phase 3 Watershed Implementation Plan Wastewater Supplement was developed to provide an update on Chesapeake Bay TMDL implementation activities for point sources and current implementation strategy for wastewater. The following Cap Loads, annual effluent net mass load limits, specified in this document will be included in the draft permit:

			Latest				TN Offsets	TP		
			Permit	Permit	Cap Load	TN Cap	Included in	Cap	TN	TP
NPDES			Issuance	Expiration	Compliance	Load	Cap Load	Load	Delivery	Delivery
Permit No.	Phase	Facility	Date	Date	Start Date	(lbs/yr)	(lbs/yr)	(lbs/yr)	Ratio	Ratio
		St. Thomas								
		Township								
		Municipal								
PA0081001	3	Authority	8/8/2017	8/31/2022	10/01/2013	7,306	-	974	0.683	0.67

### Total Dissolved Solids (TDS)

TDS and its associated solids including Bromide, Chloride, and Sulfate have become statewide pollutants of concern. The requirement to monitor these pollutants must be considered under the criteria specified in 25 Pa. Code § 95.10 and the following January 23, 2014 DEP Central Office Directive:

### For point source discharges and upon issuance or reissuance of an individual NPDES permit:

-Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

The sample result shows that effluent contains a TDS concentration level of 530 mg/L and Bromide was non-detected at 2.0 mg/L. Accordingly, the requirement to monitor these pollutants is not necessary.

### E. Coli Monitoring

DEP's SOP No. BCW-PMT-033 recommends under 25 Pa Code §92a.61 a routine monitoring for E. Coli in all new and reissued permits. Since the facility has now the annual average design flow of 0.4 MGD, a quarterly monitoring will be included in the permit.

### Monitoring Frequency and Sample Type

Unless otherwise specified throughout this fact sheet, existing monitoring frequencies and sample types will remain unchanged in the permit.

### Mass Loading Limitations

All effluent mass loading limits will be based on the formula: design flow x concentration limit x conversion factor of 8.34.

### Antidegradation Requirements

All effluent limitations and monitoring requirements have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

### **Proposed Effluent Limitations and Monitoring Requirements**

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

			Effluent L	imitations			Monitoring Re	quirements
Parameter	Mass Units	s (lbs/day) <sup>(1)</sup>		Concentrati	ions (mg/L)		Minimum <sup>(2)</sup>	Required
Farameter	Average Monthly	Weekly Average	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	xxx	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen Total Residual Chlorine (TRC)	XXX XXX	XXX XXX	5.0 Daily Min XXX	XXX 0.5	XXX XXX	XXX 1.6	1/day 1/day	Grab Grab
CBOD5	83	133	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	xxx	Report	XXX	ххх	1/week	24-Hr Composite
Total Suspended Solids	100	150	xxx	30.0	45.0	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	ХХХ	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Ammonia-Nitrogen May 1 - Oct 31	20.0	XXX	XXX	6.0	XXX	12	2/week	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	60	XXX	xxx	18.0	XXX	xxx	2/week	24-Hr Composite
E. Coli (No./100 mL)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab

### roposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

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

			Effluent L	imitations			Monitoring Re	quirements
Parameter	Mass Units	(lbs/day) (1)		Concentrat	tions (mg/L)		Minimum <sup>(2)</sup>	Required
Farameter	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum	Measurement Frequency	Sample Type
AmmoniaN	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
KjeldahlN	Report	xxx	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	xxx	Report	ххх	ххх	1/month	Calculation
Total Phosphorus	Report	Report	xxx	Report	xxx	ххх	2/week	24-Hr Composite
Net Total Nitrogen	XXX	7306	XXX	XXX	ХХХ	ХХХ	1/month	Calculation
Net Total Phosphorus	XXX	974	XXX	XXX	ХХХ	ХХХ	1/month	Calculation

Tools and References Used to Develop Permit
WQM for Windows Model (see Attachment
Toxics Management Spreadsheet (see Attachment )
TRC Model Spreadsheet (see Attachment)
Temperature Model Spreadsheet (see Attachment)
Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
Pennsylvania CSO Policy, 385-2000-011, 9/08.
Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
Implementation Guidance Design Conditions, 391-2000-006, 9/97.
Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
Design Stream Flows, 391-2000-023, 9/98.
Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
SOP:
Other:

Attachments

1. StreamStats

6/16/22, 8:31 AM

StreamStats

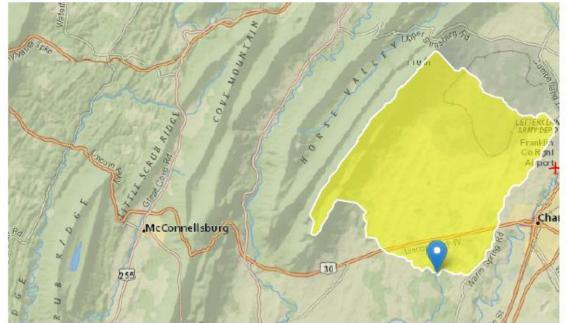
# StreamStats Report

 Region ID:
 PA

 Workspace ID:
 PA20220616122810448000

 Clicked Point (Latitude, Longitude):
 39.90371, -77.74585

 Time:
 2022-06-16 08:28:30 -0400



Collapse All

Parameter			
ode	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	16.96	percent
RNAREA	Area that drains to a point on a stream	61.1	square miles
RECIP	Mean Annual Precipitation	40	inches
OCKDEP	Depth to rock	4.1	feet
TRDEN	Stream Density total length of streams divided	2.79	miles per

https://streamstats.usgs.gov/ss/

### 6/16/22, 8:31 AM

StreamStats

# Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	61.1	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	2.79	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.1	feet	3.32	5.65
CARBON	Percent Carbonate	16.96	percent	0	99

### Low-Flow Statistics Flow Report [Low Flow Region 2]

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	4.76	ft^3/s	38	38
30 Day 2 Year Low Flow	6.51	ft^3/s	33	33
7 Day 10 Year Low Flow	2.16	ft^3/s	51	51
30 Day 10 Year Low Flow	3.01	ft^3/s	46	46
90 Day 10 Year Low Flow	4.59	ft^3/s	36	36

### 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/)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

# 2. WQM 7.0 ver. 1.1

	SWP Basir			Str	eam Name		RMI	Eleva (ft		Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdraw (mgd)	wal	Apply FC	
	13C	599	02 BACK	CREEK			8.1	<b>40</b> 5	13.00	61.10	0.00000	C	0.00	~	
					St	ream Da	ta								
Design	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	<u>1</u> Temp	<u>Fributary</u> pH	Ten	<u>Stream</u> np p	н		
Cond.	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C	)			
Q7-10 Q1-10 Q30-10	0.112	0.00 0.00 0.00	0.00	0.000 0.000 0.000	0.000	0.0	0.00	0.00	25	.00 7.0	0	0.00	0.00		
					D	ischarge	Data								
			Name	Pe	rmit Numbe	Disc	Disc Flow	Flow	Rese Fac		p p	isc oH			
		St. Th	homas	PA	0081001	0.400	0 0.400	0 0.40	0 00	.000 2	0.00	7.00			
					P	arameter	Data								
				Paramete	r Name	_			tream Conc	Fate Coef					
				aramete	a rearrie	n)	ng/L) (r	ng/L) (r	mg/L)	(1/days)					
			CBOD5				25.00	2.00	0.00	1.50					
			Dissolved	Oxygen			5.00	8.24	0.00	0.00					

6.00

0.00

0.70

0.00

# Input Data WQM 7.0

Thursday, June 16, 2022

NH3-N

Version 1.1

	SWP Basi			Stre	am Name		RMI	Elevat (ft)		Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
	13C	596	902 BACK	CREEK			3.57	70 48	88.00	80.10	0.00000	0.00	~
					S	tream Dat	a						
Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tem	<u>Tributary</u> p pH	Tem	<u>Stream</u> p pH	
cona.	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C	)	(°C	)	
27-10 21-10 230-10	0.112	0.00 0.00 0.00	0.00	0.000 0.000 0.000	0.000 0.000 0.000	0.0	0.00	0.00	2	5.00 7.0	)0 (	0.00 0.00	)
					D	ischarge l Existing		ed Design		Dis	c Dir	sc	
						Disc	Disc	Disc	Res	erve Terr	np p	н	

# Input Data WQM 7.0

Name	Permit Number	Disc	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Res	erve T ctor	Disc Temp (°C)	Disc pH
Camp Joy EL	PA0082627	0.0100	0.0100	0.010	0 (	0.000	20.00	7.00
	Pa	rameter Da	ita					
_		Disc Con			eam onc	Fate Coef		
F	arameter Name	(mg/	L) (mg	/L) (n	ng/L)	(1/days)		
CBOD5		25	.00 2	2.00	0.00	1.50	)	
Dissolved (	Dxygen	5	.00 8	3.24	0.00	0.00	)	
NH3-N		25	.00 0	0.00	0.00	0.70	)	

	SWP Basir			Stre	am Name		RMI		/ation ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
	13C	59	002 BACK	CREEK			0.10	00	472.00	91.20	0.00000	0.00	~
					S	tream Da	ta						
Design	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Ten	<u>Tributary</u> np pH	Tem	<u>Stream</u> ip pH	
Cond.	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C	)	(°C	)	
Q7-10	0.112	0.00	0.00	0.000	0.000	0.0	0.00	0.0	0 2	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								

# Input Data WQM 7.0

	Dis	charge Da						
Name	Permit Number	Existing I Disc Flow (mgd)	Permitted Disc Flow (mgd)	Disc Flow	Res		Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.000	0 (	0.000	25.00	7.0
	Par	rameter Da	ita					
		Disc		_	eam onc	Fate Coef		
Pa	rameter Name	(mg/	L) (mg	/L) (m	ng/L)	(1/days	)	
CBOD5		25	i.00 2	2.00	0.00	1.5	D	
Dissolved O	xygen	3	.00 8	3.24	0.00	0.0	0	
NH3-N		25	.00 (	0.00	0.00	0.7	D	

8.140 <u>Reach Width (ft)</u> 43.554 <u>Reach CBOD5 (mg/L)</u> 3.91 <u>Reach DO (mg/L)</u> 7.974 <u>leach Travel Time (days)</u> 1.215 <u>RMI</u> 3.570	Total Discharge 0.400 <u>Reach Der</u> 0.745 <u>Reach Kc (</u> 0.426 <u>Reach Kc (</u> 2.525 TravTime (days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093 1.215	0 <u>pth (ft)</u> 5 1/ <u>days)</u> 9 1 <u>/days)</u> 3 Subreach	B	lysis Temperature (°C) 24.585 Reach WDRatio 58.445 Leach NH3-N (mg/L) 0.50 Kr Equation Tsivoglou D.O. (mg/L) 7.56 7.30 7.15 7.07 7.05 7.07 7.05 7.07	L <u>Analysis pH</u> 7.000 <u>Reach Velocity (fps)</u> 0.230 <u>Reach Kn (1/days)</u> 0.996 <u>Reach DO Goal (mg/L)</u> 5
8.140 <u>Reach Width (ft)</u> 43.554 <u>Reach CBOD5 (mg/L)</u> 3.91 <u>Reach DO (mg/L)</u> 7.974 <u>leach Travel Time (days)</u> 1.215 <u>RMI</u> 3.570	0.400 <u>Reach Der</u> 0.748 <u>Reach Kc (</u> 0.420 <u>Reach Kr (</u> 2.523 TravTime (days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	0 pth (ft) 5 1/days) 9 1/days) 3 Subreact CBOD5 (mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	Results NH3-N (mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	24.585 <u>Reach WDRatio</u> 58.445 <u>teach NH3-N (mg/L)</u> 0.50 <u>Kr Equation</u> Tsivoglou D.O. (mg/L) 7.56 7.30 7.15 7.07 7.05 7.07	7.000 <u>Reach Velocity (fps)</u> 0.230 <u>Reach Kn (1/davs)</u> 0.996 <u>Reach DO Goal (mg/L)</u>
Reach Width (ft) 43.554 Reach CBOD5 (mg/L) 3.91 Reach DO (mg/L) 7.974 teach Travel Time (days) 1.215 RML 3.570	Reach Der 0.743 Reach Kc ( 0.420 Reach Kr ( 2.523 TravTime (days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	bth (ft) 5 1/days) 9 1/days) 3 <b>Subreach</b> CBOD5 (mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	Results NH3-N (mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	Reach WDRatio 58.445 0.50 Kr Equation Tsivoglou D.O. (mg/L) 7.56 7.30 7.15 7.07 7.05 7.07	Reach Velocity (fps) 0.230 Reach Kn (1/days) 0.996 Reach DO Goal (mg/L)
43.554 <u>Reach CBOD5 (mg/L)</u> 3.91 <u>Reach DO (mg/L)</u> 7.974 <u>leach Travel Time (days)</u> 1.215 <u>RMI</u> 3.570	0.745 Reach Kc ( 0.426 Reach Kr () 2.523 TravTime (days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	5 1/days) 9 1/days) 3 Subreact CBOD5 (mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	Results NH3-N (mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	58.445 Reach NH3-N (mg/L) 0.50 <u>Kr Equation</u> Tsivoglou D.O. (mg/L) 7.56 7.30 7.15 7.07 7.05 7.07	0.230 <u>Reach Kn (1/days)</u> 0.996 <u>Reach DO Goal (mg/L)</u>
Reach CBOD5 (mg/L) 3.91 Reach DO (mg/L) 7.974 leach Travel Time (days) 1.215 <u>RMI</u> 3.570	Reach Kc ( 0.420 Reach Kr ( 2.523 TravTime (days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	1/days) 9 1/days) 3 Subreact CBOD5 (mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	Results NH3-N (mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	Reach NH3-N (mg/L)           0.50           Kr Equation           Tsivoglou           D.O.           (mg/L)           7.56           7.30           7.15           7.07           7.05           7.07	Reach Kn (1/days) 0.996 Reach DO Goal (mg/L)
3.91 <u>Reach DO (mg/L)</u> 7.974 <u>RML</u> 3.570	0.420 <u>Reach Kr ('</u> 2.523 TravTime (days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	9 1/days) 3 Subreach CBOD5 (mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	Results NH3-N (mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	0.50 <u>Kr Equation</u> Tsivoglou D.O. (mg/L) 7.56 7.30 7.15 7.07 7.05 7.07	0.996 Reach DO Goal (mg/L)
Reach DO (mg/L) 7.974 Reach Travel Time (days) 1.215 RML 3.570	Reach Kr ( 2.523 TravTime (days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	1/days) 3 Subreact CBOD5 (mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	NH3-N (mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	<u>Kr Equation</u> Tsivoglou D.O. (mg/L) 7.56 7.30 7.15 7.07 7.05 7.07	Reach DO Goal (mg/L)
7.974 Reach Travel Time (days) 1.215 <u>RMI</u> 3.570	2.523 TravTime (days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	3 Subreact CBOD5 (mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	NH3-N (mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	Tsivoglou D.O. (mg/L) 7.56 7.30 7.15 7.07 7.05 7.07	
1.215 <u>RML</u> 3.570	(days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	CBOD5 (mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	NH3-N (mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	(mg/L) 7.56 7.30 7.15 7.07 7.05 7.07	
<u>RMI</u> 3.570	(days) 0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	(mg/L) 3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	(mg/L) 0.44 0.39 0.35 0.31 0.27 0.24	(mg/L) 7.56 7.30 7.15 7.07 7.05 7.07	
3.570	0.121 0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	3.66 3.44 3.22 3.02 2.83 2.66 2.49 2.33	0.44 0.39 0.35 0.31 0.27 0.24	7.56 7.30 7.15 7.07 7.05 7.07	
3.570	0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	3.44 3.22 2.83 2.66 2.49 2.33	0.39 0.35 0.31 0.27 0.24	7.30 7.15 7.07 7.05 7.07	
3.570	0.243 0.364 0.486 0.607 0.729 0.850 0.972 1.093	3.44 3.22 2.83 2.66 2.49 2.33	0.39 0.35 0.31 0.27 0.24	7.30 7.15 7.07 7.05 7.07	
3.570	0.384 0.486 0.607 0.729 0.850 0.972 1.093	3.22 3.02 2.83 2.66 2.49 2.33	0.35 0.31 0.27 0.24	7.15 7.07 7.05 7.07	
3.570	0.486 0.607 0.729 0.850 0.972 1.093	3.02 2.83 2.66 2.49 2.33	0.31 0.27 0.24	7.07 7.05 7.07	
3.570	0.607 0.729 0.850 0.972 1.093	2.83 2.66 2.49 2.33	0.27 0.24	7.05 7.07	
3.570	0.729 0.850 0.972 1.093	2.66 2.49 2.33	0.24	7.07	
3.570	0.850 0.972 1.093	2.49 2.33			
3.570	0.972 1.093	2.33	9.41	7.11	
3.570	1.093		0.19	7.16	
3.570			0.17	7.23	
3.570	1.210	2.05	0.15	7.30	
3.570					
	Total Discharge		) Ana	lysis Temperature (°C)	
	0.410	-		24.670	7.000
Reach Width (ft)	Reach Dep			Reach WDRatio	Reach Velocity (fps)
49.957	0.782		_	63.916	0.246
Reach CBOD5 (mg/L)	Reach Kc (		н	leach NH3-N (mg/L)	Reach Kn (1/days)
2.08	0.034 Reach Kr ()			0.16 Kr Equation	1.003 Reach DO Goal (mo/L)
Reach DO (mg/L) 7.502	2.280			Tsivoglou	5
Reach Travel Time (days) 0.862	TravTime	Subreach		D.O.	
0.002	(days)	(mg/L)	(mg/L)	(mg/L)	
	0.086	2.07	0.14	7.58	
	0.172	2.06	0.13	7.58	
	0.259	2.06	0.12	7.58	
	0.345	2.05	0.11	7.58	
	0.431	2.04	0.10	7.58	
	0.517	2.03	0.09	7.58	
	0.603	2.03	0.08	7.58	
	0.690	2.02	0.08	7.58	
	0.776	2.01	0.07	7.58	
	0.862	2.00	0.07	7.58	
hursday, June 16, 2022			Version 1.		Page 1

# WQM 7.0 D.O.Simulation

		P Basin 13C		im Code 9902				<u>Stream</u> BACK C				
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)	
Q7-1(	) Flow											
8.140	6.84	0.00	6.84	.6188	0.00104	.745	43.55	58.44	0.23	1.215	24.59	7.00
3.570	8.97	0.00	8.97	.6343	0.00087	.782	49.96	63.92	0.25	0.862	24.67	7.00
Q1-1(	0 Flow											
8.140	5.58	0.00	5.58	.6188	0.00104	NA	NA	NA	0.21	1.347	24.50	7.00
3.570	7.32	0.00	7.32	.6343	0.00087	NA	NA	NA	0.22	0.958	24.60	7.00
Q30-'	10 Flow											
8.140	8.13	0.00	8.13	.6188	0.00104	NA	NA	NA	0.25	1.111	24.65	7.00
3.570	10.66	0.00	10.66	.6343	0.00087	NA	NA	NA	0.27	0.787	24.72	7.00

# WQM 7.0 Hydrodynamic Outputs

Thursday, June 16, 2022

Version 1.1

# WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	$\checkmark$
WLA Method	EMPR	Use Inputted W/D Ratio	
Q1-10/Q7-10 Ratio	0.816	Use Inputted Reach Travel Times	
Q30-10/Q7-10 Ratio	1.188	Temperature Adjust Kr	$\checkmark$
D.O. Saturation	90.00%	Use Balanced Technology	✓
D.O. Goal	5		

Thursday, June 16, 2022

Version 1.1

	SWP Basin St 13C	ream Code 59902			ream Name CK CREEK		
NH3-N	Acute Allocatio	ons					
RMI	Discharge Nan	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
8.14	40 St. Thomas	11.54	12	11.54	12	0	0
	70 Camp Joy EL	11.08	50	11.45	50	0	0
3.5	70 Camp Joy EL Chronic Alloca	tions					
3.5		tions Baseline	50 Baseline WLA (mg/L)	Multiple Criterion (mg/L)	50 Multiple WLA (mg/L)	0 Critical Reach	0 Percent Reduction
3.5 NH3-N RMI	Chronic Alloca	tions Baseline Criterion	Baseline WLA (mg/L)	Multiple Criterion	Multiple WLA	Critical	Percent

# WQM 7.0 Wasteload Allocations

		CBC	DD5	NH	3-N	Dissolved	l Oxygen	Critical	Percent
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline	Multiple	Reach	Reduction
8.14	St. Thomas	25	25	6	6	5	5	0	0
3.57	Camp Joy EL	25	25	25	25	5	5	0	0

Thursday, June 16, 2022

Version 1.1

	<u>SWP Basin</u> Str 13C	ream Code 59902		Stream Name BACK CREE	-		
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)
8.140	St. Thomas	PA0081001	0.400	CBOD5	25		
				NH3-N	6	12	
				Dissolved Oxygen			5
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
3.570	Camp Joy EL	PA0082627	0.010	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

# WQM 7.0 Effluent Limits

Thursday, June 16, 2022

Version 1.1

# 3. TRC\_CALC Spreadsheet

<b>TRC EVAL</b>	UATION						
Input appropr	riate values	in B4:B8 and E4:E	7				
	2 = Q stream			= CV Daily			
0.4	= Q discha	rge (MGD)	0.5	= CV Hourly			
30	) = no. samp	les	1	= AFC_Partia	I Mix Factor		
0.3	= Chlorine	Demand of Stream	1	= CFC_Partia	I Mix Factor		
C	) = Chlorine	Demand of Discha	15	= AFC_Criter	ia Compliance Time (min)		
0.5	= BAT/BPJ	Value	720	= CFC_Criter	ia Compliance Time (min)		
0	) = % Factor	r of Safety (FOS)		=Decay Coef	ficient (K)		
Source	Reference	AFC Calculations		Reference	CFC Calculations		
TRC	1.3.2.iii	WLA afc =	3.535	1.3.2.iii	WLA cfc = 3.439		
PENTOXSD TRO	6 <b>5.1a</b>	LTAMULT afc =	0.373	5.1c	LTAMULT cfc = 0.581		
PENTOXSD TRO	6 <b>5.1b</b>	LTA_afc=	1.317	5.1d	LTA_cfc = 1.999		
Source			Limit Cal				
PENTOXSD TRO			_ MULT =				
PENTOXSD TRG 5.1g AVG MON LIMIT (mg/l) = 0.500 BAT/BPJ							
INST MAX LIMIT (mg/l) = 1.635							
WLA afc (.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc)) + Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)							
LTAMULT afc		(cvh^2+1))-2.326*LN(d	ovh^2+1)	<b>`</b> 0.5)			
LTA_afc	wla_afc*LTA	MULT_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*l	_N(cvd^2/no_sa	mples+1)^0.5)		
LTA_cfc	wla_cfc*LTA	MULT_cfc					
AML MULT	EXP(2.326*L	N((cvd^2/no_samples	+1)^0.5)-	0.5*LN(cvd^2/n	o_samples+1))		
AVG MON LIMIT		PJ,MIN(LTA_afc,LTA_					
INST MAX LIMIT		on_limit/AML_MUL					

4. Toxics Management Spreadsheet

Uation Type: Custom / Additives       Wastewater Description: Minor Sewage         Discharge Characteristics         Sign Flow MGD)*       Partial Mix Factors (PMFs)       Complete Mix Times (min)         MGD)*       Hardness (mg/l)*       pH (SU)*       Partial Mix Factors (PMFs)       Complete Mix Times (min)         0.4       100       7       AFC       CFC       THH       CRL       Q <sub>7-10</sub> Q <sub>n</sub> O if left blank       0.5 if left blank       0 if left blank       1 if left blank         Discharge Pollutant       Units       Max Discharge Cone       Trib       Stream Cone       Daily CV       Hourly CV       Stread m CV       Fate Coeff       FOS       Criteri a Mod       Trans         Total Dissolved Solids (PWS)       mg/L       530       2000       1000       1000       1000       1000       1000         Sulfate (PWS)       mg/L       38.9       2000       10000		<b>NSYLVANIA</b> MENT OF ENVIRONMENTA TION	L										nagement Sj ersion 1.3, N	
ity: St. Thoams Township MA WWTP NPDES Permit No.: PA0081001 Outfall No.: 001          UNPDES Permit No.: PA0081001 Outfall No.: 001         Jation Type: Custom / Additives       Wastewater Description: Minor Sewage         Discharge Characteristics         Sign Flow       Mardness (mg/l)*       PH (SU)*       Partial Mix Factors (PMFs)       Complete Mix Times (min)         Outfall No.: 001         Outfall No.: 01         Outfall No.: 01         Discharge Characteristics         Outfall Mix Factors (PMFs)       Complete Mix Times (min)         0.4       100       7       Image: 0.5 if left blank       O if left blank       O if left blank       1 if left blank         O if left blank       0.5 if left blank       O if left blank       I if left blank         Discharge Pollutant       Units       Max Discharge Cone       Trib       Stream       Daily       Hourly       Stream       Daily       Hourly       Stream       Cone       Core       Co	scharg	e Informati	on											
Uation Type: Custom / Additives       Wastewater Description: Minor Sewage         Discharge Characteristics         sign Flow MGD)*       Hardness (mg/l)*       pH (SU)*       Partial Mix Factors (PMFs)       Complete Mix Times (min)         MGD)*       Hardness (mg/l)*       pH (SU)*       Partial Mix Factors (PMFs)       Complete Mix Times (min)         0.4       100       7       AFC       CFC       THH       CRL       Q <sub>7-10</sub> Q <sub>n</sub> O if left blank       0.5 if left blank       0 if left blank       1 if left blank         Discharge Pollutant       Units       Max Discharge Cone       Trib       Stream Cone       Daily CV       Hourly CV       Strea       Fate Coeff       FOS       Criteri a Mod       Trans         Total Dissolved Solids (PWS)       mg/L       530       CV       CV       m CV       Coeff       FOS       Criteri a Mod       Trans         Total Dissolved Solids (PWS)       mg/L       110       CV       CV       CV       CV       CV       Coeff       FOS       Criteri a Mod       Trans         Total Copper       mg/L       38.9       CO       C       C       C       C       C	ructions C	Discharge Stream												
Uation Type: Custom / Additives       Wastewater Description: Minor Sewage         Discharge Characteristics         sign Flow MGD)*       Hardness (mg/l)*       pH (SU)*       Partial Mix Factors (PMFs)       Complete Mix Times (min)         MGD)*       Hardness (mg/l)*       pH (SU)*       Partial Mix Factors (PMFs)       Complete Mix Times (min)         0.4       100       7       AFC       CFC       THH       CRL       Q <sub>7-10</sub> Q <sub>n</sub> O if left blank       0.5 if left blank       0 if left blank       1 if left blank         Discharge Pollutant       Units       Max Discharge Cone       Trib       Stream Cone       Daily CV       Hourly CV       Strea       Fate Coeff       FOS       Criteri a Mod       Trans         Total Dissolved Solids (PWS)       mg/L       530       CV       CV       m CV       Coeff       FOS       Criteri a Mod       Trans         Total Dissolved Solids (PWS)       mg/L       110       CV       CV       CV       CV       CV       Coeff       FOS       Criteri a Mod       Trans         Total Copper       mg/L       38.9       CO       C       C       C       C       C	lity: St.	Thoams Township I	A WWT	P		NPI	DES Per	mit No.:	PA0081	001		Outfall	No.: 001	
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$				-							_			
Partial Mix Factors (PMFs)         Complete Mix Times (min)           MGD)*         0.4         100         7         AFC         CFC         THH         CRL         Q7.10         Qh           0.4         100         7         0	luation Type	Custom / Addit	ves			Wa	stewater	Descrip	tion: Min	or Sewa	nge			
Partial Mix Factors (PMFs)         Complete Mix Times (min)           MGD)*         0.4         100         7         AFC         CFC         THH         CRL         Q7.10         Qh           0.4         100         7         0					Diecha	rne Cha	ractoriet	lice						
MGD)*         Hardness (mg/l)*         pH (SU)*         AFC         CFC         TH         CRL         Q7.10         Qh           0.4         100         7              Qh         Qh </td <td>aign Flow</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>PMFs)</td> <td></td> <td>Com</td> <td>nlete Mi</td> <td>y Times</td> <td>(min)</td>	aign Flow					-			PMFs)		Com	nlete Mi	y Times	(min)
0.4         100         7         0.6		Hardness (mg/l)*	pH(	pH (SU)*					<u> </u>	CRI	· · · ·			. ,
Discharge Pollutant     Units     Max Discharge Conc     Trib Conc     Stream Conc     Daily CV     Hourly CV     Stream m CV     Fate Coeff     FOS     Criteri a Mod     Criteri Trans       Total Dissolved Solids (PWS)     mg/L     530     ////     /// <th></th> <th colspan="2"></th> <th colspan="2"></th> <th></th> <th>-10</th> <th colspan="2"></th>							-10							
Discharge Pollutant     Units     Max Discharge Conc     Trib Conc     Stream Conc     Daily CV     Hourly CV     Stream m CV     Fate Coeff     FOS     Criteri a Mod     Criteri Trans       Total Dissolved Solids (PWS)     mg/L     530     ////     /// <th></th> <th></th> <th colspan="2"></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>														
Discharge Pollutant         Units         Conc         Conc         Conc         CV         CV         m CV         Coeff         FOS         a Mod         Trans           Total Dissolved Solids (PWS)         mg/L         530         Image: Conc         CV         CV         m CV         Coeff         FOS         a Mod         Trans           Bromide         mg/L         530         Image: Conc         CV         CV         m CV         Coeff         FOS         a Mod         Trans           Bromide         mg/L         2         Image: Conc         CV         CV         m CV         Coeff         FOS         a Mod         Trans           Solfate (PWS)         mg/L         110         Image: Conc						0 if left	t blank	0.5 if le	eft blank	0	) if left blan	k	1 if left	t blank
Bit         mg/L         <													o	
Information         mg/L         110         Information         Information <thinformation< th="">         Information         Informati</thinformation<>	Disch	arge Pollutant	Units		-							FOS		
Sulfate (PWS)         mg/L         38.9         Img/L		5			Conc							FOS		
Total Copper         mg/L         <         0.01         Image: Comparison of the comparison of t	Total Dissolv	5	mg/L		530							FOS		
Total Zinc mg/L < 0.008	Total Dissolv Bromide	ed Solids (PWS)	mg/L mg/L		530 2							FOS		
	Total Dissolv Bromide Chloride (PWS Sulfate (PWS	ed Solids (PWS) (S)	mg/L mg/L mg/L mg/L	<	530 2 110 38.9							FOS		
Total Lead         mg/L         0.0444         0.0444         0.00000000000000000000000000000000000	Total Dissolw Bromide Chloride (PW Sulfate (PWS Total Copper	ed Solids (PWS) (S)	mg/L mg/L mg/L mg/L	< 1 < 1 < 1	530 2 110 38.9 0.01							FOS		
	Total Dissolv Bromide Chloride (PW Sulfate (PWS Total Copper Total Zinc	ed Solids (PWS) (S)	mg/L mg/L mg/L mg/L mg/L	< 1 < 1 < 1	530 2 110 38.9 0.01 0.008							FOS		
	Total Dissolvi Bromide Chloride (PW Sulfate (PWS Total Copper Total Zinc	ed Solids (PWS) (S)	mg/L mg/L mg/L mg/L mg/L	< 1 < 1 < 1	530 2 110 38.9 0.01 0.008							FOS		
	Total Dissolvi Bromide Chloride (PW Sulfate (PWS Total Copper Total Zinc	ed Solids (PWS) (S)	mg/L mg/L mg/L mg/L mg/L	< 1 < 1 < 1	530 2 110 38.9 0.01 0.008							FOS		
	Total Dissolv Bromide Chloride (PW	ed Solids (PWS) (S)	mg/L mg/L mg/L mg/L mg/L	< 1 < 1 < 1	530 2 110 38.9 0.01 0.008							FOS		

6/16/2022

Instructions Discharge	Stream													
Receiving Surface Water Name: Back Creek	lame: Bac	k Creek					No. Rea	No. Reaches to Model:	odel: 1	1	Statewide Criteria	ia cro		
Location	Stream Code*	RMI*	Elevation (ft)*	on DA (mi <sup>2</sup> )*		Slope (ft/ft)	N SMA	PWS Withdrawal (MGD)	Apply Fish Criteria*	_	O ORSANCO Criteria	eria		
Point of Discharge 05 End of Reach 1 05	059902 059902	8.14 3.57	513	61.1	$\left  \right $				Yes					
Q <sub>7-10</sub>										1				
Location RMI		LFY (cfs/mi <sup>2</sup> )*	Flow (cfs) Stream Trit	(cfs) Tributary	W/D Ratio	Width (ft)	Depth (ft)	Velocit v (fps)	Time	Tributary Hardness   pH	Stream Hardness*	на E	Analysis Hardness	<u>ہ</u> ا
Point of Discharge 8.14		⊢		anna an					13NGD1	83	100	7		
End of Reach 1 3.57	$\square$	0.112		PULLIC						annen en				
۵,														
Location RMI	-	$\vdash$	Flow (cfs)	(cfs)	Q/N	Width		Velocit	Time	le l	Stream		Analysis	
	- 8	(cts/ml <sup>+</sup> )	Stream	I ributary	Katio	Ê	E)	y (TpS)	(dave)	Hardness pH	Hardness	H	Hardness	핇
Point of Discharge   8,14	14	CHARKS .						+			2.2			

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Stream / Surface Water Information

Page 2

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Toxics Management Spreadsheet Version 1.3, March 2021

# **Model Results**

St. Thoams Township MA WWTP, NPDES Permit No. PA0081001, Outfall 001

O Limits	
O Results	
O Inputs	
II (	
PRINT	
SAVE AS PDF	
RETURN TO INPUTS	
its	
Results	
Instructions	

Hydrodynamics

Q 7-10

Travel Time Complete Mix Time (days) (min)	1.215 105.602	
Ratio Velocity (fps)	58.445 0.23	
Width (ft) W/D	43.554 58	
Depth (ft)	0.745	
Slope (ft/ft)	0.001	
Discharge Analysis Flow (cfs)	0.619	
Net Stream Flow (cfs)	6.84	8.9712
PWS Withdrawal (cfs)		
Stream Flow (cfs)	6.84	8.97
RMI	8.14	3.57

ő

Complete Mix Time (min)	39.857	
Travel Time (days)	0.471	
Velocity (fps)	0.593	
W/D Ratio	27.76	
Width (ft)	43.554	
Depth (ft)	1.569	
Slope (ft/ft)	0.001	
Discharge Analysis Flow (cfs)	0.619	
Net Stream Flow (cfs)	39.90	50.56
PWS Withdrawal (cfs)		
Stream Flow (cfs)	39.90	50.557
RMI	8.14	3.57

# Wasteload Allocations

Analysis pH: 7.00	Comments				Chem Translator of 0.96 applied	Chem Translator of 0.978 applied	Chem Translator of 0.791 applied	Analysis pH: 7.00
100	-				Chem	Chem	Chem	100
ss (mg/l):	WLA (µg/L)	N/A	N/A	N/A	72.3	619	422	ss (mg/l):
Analysis Hardness (mg/l):	WQ Obj (µg/L)	N/A	N/A	N/A	14.0	120	81.6	Analysis Hardness (mg/l):
Analy	WQC (µg/L)	N/A	N/A	N/A	13.439	117.180	64.581	Ana
0.377	Fate Coef	0	0	0	0	0	0	-
PMF:	Stream Stream Trib Conc Fate onc (µg/L) CV (µg/L) Coef			aaaaa		anna	HARREN	PMF:
2	Stream CV	0	0	0	0	0	0	*****
CCT (min): 15	Stream Conc (µg/L)	0	0	0	0	0	0	CCT (min): ###
AFC CC	Pollutants	Total Dissolved Solids (PWS)	Chloride (PWS)	Sulfate (PWS)	Total Copper	Total Zinc	Total Lead	CFC CC

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Chem Translator of 0.96 applied

Comments

WLA (µg/L)

WQC (µg/L)

Fate Coef

Trib Conc

Stream CV

Stream Conc (µg/L) 0 0 0

Pollutants

(hg/L)

N/A N/A 112

6/16/2022

N/A N/A 8.956

WQ Obj (µg/L) N/A N/A N/A 9.33

000

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0

Total Dissolved Solids (PWS) Chloride (PWS) Sulfate (PWS) Total Copper Model Results

Trail Late         0 <th0< th=""><th>Total Zinc</th><th>0</th><th>0</th><th>aanaa</th><th>0</th><th>118.139</th><th></th><th></th><th>5</th><th>ę</th><th>Chem Translator of 0.986 applied</th><th></th></th0<>	Total Zinc	0	0	aanaa	0	118.139			5	ę	Chem Translator of 0.986 applied	
Coll run:         Control (applicable)         PMI:         T         Analysis piratomes (mg):         IVI         Analysis piratomes (mg):         IVI         Analysis piratomes (mg):         Analysis piratomes (mg):         Analysis piratomest           Outants         Science (pNS)         0 <td< td=""><td>Total Lead</td><td>0</td><td>0</td><td>anan</td><td>0</td><td>2.517</td><td>3.18</td><td></td><td></td><td>ę</td><td>em Translator of 0.791 applied</td><td></td></td<>	Total Lead	0	0	anan	0	2.517	3.18			ę	em Translator of 0.791 applied	
Image: constraint of the		CT (min): ##	****	PMF	$\Box$		Analysis Han	dness (mg/l)		] An		
all Discription	Pollutants	Stream Conc (µg/L)							<sup>в</sup> /г)		Comments	
Chindle (PVS)         0 <th0< th="">         0         0         <!--</td--><td>otal Dissolved Solids (PWS)</td><td>0</td><td></td><td>anne</td><td>•</td><td>500,000</td><td>⊢</td><td>┡</td><td></td><td></td><td></td><td>Γ</td></th0<>	otal Dissolved Solids (PWS)	0		anne	•	500,000	⊢	┡				Γ
Sinter         Constrained         Constrained <thconstrained< th=""> <thconstrained< th=""> <thc< td=""><td>Chloride (PWS)</td><td>0</td><td>•</td><td></td><td>•</td><td>250,000</td><td>┝</td><td><math>\vdash</math></td><td></td><td></td><td></td><td>Γ</td></thc<></thconstrained<></thconstrained<>	Chloride (PWS)	0	•		•	250,000	┝	$\vdash$				Γ
Trail         Trail         Concert         0         0         NA	Sulfate (PWS)	0	0	anna a	0	250,000	┝	L				Γ
Total Zinc         0         0         NiA         NiA<	Total Copper	0	•	111111	•	AVA	⊢	╞				Γ
Total Lead         0         0         NA         NA         NA         NA         NA           I CRL         Corr (min)         38351         PM:         T         Analysis Hardness (mg)         Xi         Analysis pit:         Xi           I CRL         Corr (min)         38351         PM:         T         Analysis Hardness (mg)         Xi         Analysis pit:         Xi           Analysis hardness         Corr (min)         38351         PM:         Total         Xi         Analysis pit:         Xi           Analysis hardness         Corr (moi)         Corr (moi)         Corr (moi)         Corr (moi)         Corr (moi)         Xi         Analysis pit:         Xi           Total Zinc         0         0         NA         NA         NA         NA         NA         NA           Total Zinc         0         0         NA	Total Zinc	0	0	000000	0	AN	NA	AN	$\left  \right $			Γ
Ckl.     Ctl.     Ctl.     Tul     Analysis Interaction     Mailysis Interaction	Total Lead	0	0		0	NA	N/A	N/A				Π
Pollutants         Stream         Str	CRL	CT (min): 39	.857	PMF	Ш		Analysis Han	dness (mg/l)		] An		
Image: Solution of Solutin of Solution of Solution of Solution of Solut	Dollistante	Stream							(1)		Commante	
Iall Discolved Solids (TVVS)         0         0         V/A         NA         NA         NA           Chorde (FVVS)         0         0         N/A         NA         NA         NA           Chorde (FVVS)         0         0         N/A         NA         NA         NA           Total Coper         0         0         N/A         NA         NA         NA           Total Coper         0         0         N/A         NA         NA         NA           Total Coper         0         0         N/A         NA         NA         NA           Follatari          NA         NA         NA         NA         NA           Commented VCBEL & Montention          NA         NA         NA         NA           Commented VCBEL & Montention         MOL         MOL         MOL         MOL         MOL           Total Leads         MOL         MOL         MOL         MOL         MAX         NA           Commented VCBEL         MOL         MOL         MOL         MOL         MOL         MOL           Follataris         MOL         MOL         MOL         MOL         MOL         MAX <t< td=""><td>L'OILUIGHTS</td><td>Conc (µg/L)</td><td></td><td>(hg/L)</td><td>_</td><td></td><td></td><td></td><td>9' L/</td><td></td><td>CONTINUENCE</td><td></td></t<>	L'OILUIGHTS	Conc (µg/L)		(hg/L)	_				9' L/		CONTINUENCE	
Clinicia (PVIS)         0         0         NA	stal Dissolved Solids (PWS)	0	0	and and	•	AVA		AN				
Sultate (PVIS)         0         0         NA         NA         NA         NA         NA           Total Coper         0         0         NA	Chloride (PWS)	0	0		0	A/A	N/A	A/N				Γ
Total Copper         0         0         NA         NA         NA         NA           Total Led         0         0         NA         NA         NA         NA           Total Led         0         0         NA         NA         NA         NA           Fold Led         0         0         NA         NA         NA         NA           Fold Led         0         NA         NA         NA         NA         NA           ecommended WDELs & Monitoring Requirements         Am         MA         MA         MA         MA           Pollutants         Am         MD         MA         MD         MA         MA         MA           Pollutants         Am         MD         MA         MI         MA         MI         MA           Pollutants         Am         MD         MA         MI         MA         MI         MA         MI         MA           Pollutants         Am         MD         MA         MI         MA         MI         MA	Sulfate (PWS)	0	0		•	AVA	N/A	A/N				Γ
Total Zinc         0         0         NA         NA         NA         NA           Total Lead         0         0         NA         NA         NA         NA         NA           Total Lead         0         0         NA         NA         NA         NA         NA           econnended WOBEL & Monitoring Requirements         .         .         .         .         .         .           combines/month         4         .         MDL         MDL         MDL         .         .           Pollutants         Am         MDL         MDL         MDL         MDL         . <td>Total Copper</td> <td>0</td> <td>0</td> <td>100000</td> <td>•</td> <td>AVA</td> <td>N/A</td> <td>AN</td> <td></td> <td></td> <td></td> <td>Γ</td>	Total Copper	0	0	100000	•	AVA	N/A	AN				Γ
Total Lead         0         NA         NA         NA         NA           commended WOBELs & Monitoring Requirements         commended WOBELs & Monitoring Requirements         commended WOBELs & Monitoring Requirements         commended WOBEL & Monitoring Requirements           commended WOBELs & Monitoring Requirements         AML         MDL         MDL </td <td>Total Zinc</td> <td>0</td> <td>0</td> <td>22222</td> <td>0</td> <td>N/A</td> <td>N/A</td> <td>A/A</td> <td></td> <td></td> <td></td> <td>Γ</td>	Total Zinc	0	0	22222	0	N/A	N/A	A/A				Γ
Commended WQBELs & Monitoring Requirements         • Samples/Month:       4         • Samples/Month:       4         • Intervention of the state of the	Total Lead	0	0	anna	0	N/A	N/A	N/A				
Mass Limits         Concentration Limits           Pollutants         AML         MDL         MDL         MAX         Units         Governing         WQBEL         Basis         Comments           Her Pollutants         (Ibs/day)         (Ibs/day)         AML         MDL         MD	ecommended WQBELs & M o. Samples/Month: 4	onitoring Req	uiremen	ş								
Pollutants         AML (Ibs/day)         MDL (Ibs/day)         AML (Ibs/day)         MDL (Ibs/day)         MDL (Ibs/da		Mass	Limits	┝		Concentrati	on Limits					
ther Pollutants without Limits or Monitoring     in it is or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the scharge 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	AML (Ibs/day)	MDL (lbs/da		ML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments	
Total Zinc       397       yol       Total Zinc       10% WOBEL	ther Pollutants without Limi	ts or Monitor	pu	-								
Pollutants     Governing WOBEL     Units     Comments     Comments <th< td=""><td>the following collectors do not</td><td>romino offician</td><td>at limite o</td><td>r monitori</td><td>haed n</td><td>on water o</td><td>ality horai</td><td>denoseen ee</td><td>a notantial t</td><td>an poone of</td><td>atar Ausliku aritaria was nat datarminad and</td><td>o4</td></th<>	the following collectors do not	romino offician	at limite o	r monitori	haed n	on water o	ality horai	denoseen ee	a notantial t	an poone of	atar Ausliku aritaria was nat datarminad and	o4
Governing WQBEL         Units           W1/A         N/A           N/A         N/A           N/A         N/A           N/A         N/A           N/A         N/A           397         µg/L	scharge concentration was less	require enluer s than threshold	ds for mor	nitoring, or	the pollu	or water q	detected and	e reasonau a sufficient)	y sensitive an	io exceeu wa nalytical meth	atel quany chiena was not determined and nod was used (e.g., <= Target QL).	2
N/A	Pollutants	Governing WQBEL	Units			Comments						
N/A         N/A           N/A         N/A           N/A         N/A           A6.4         μg/L           397         μg/L	otal Dissolved Solids (PWS)	A/A	AN		PWS	Not Applical	ble					
N/A N/A N/A N/A N/A N/A 46.4 μg/L 397 μg/L	Bromide	N/A	NVA			No WQS						
N/A N/A 46.4 µg/L 397 µg/L	Chloride (PWS)	N/A	A/N		PWS	Not Applical	ble					
46.4 µg/L 397 µg/L	Sulfate (PWS)	N/A	A/N		PWS	Not Applical	ble					
397 µg/L	Total Copper	46.4	hg/L	_	scharge (	Conc ≤ 10%	WQBEL					
	Total Zinc	397	1/011		onharne (	2000 × 100%	10C/VI					

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Discharge Conc ≤ 10% WQBEL

hg/L

38.4

Total Lead

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Model Results