

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. PA0104108
APS ID 1064989
Authorization ID 1398963

Applicant and Facility Information

Applicant Name	<u>North Beaver Township Municipal Authority</u>	Facility Name	<u>Hickory View Terrace WWTP</u>
Applicant Address	<u>861 Mount Jackson Road New Castle, PA 16102-2415</u>	Facility Address	<u>169 Terrace Drive New Castle, PA 16102</u>
Applicant Contact	<u>Jerry Tillia, Chairman (nbtma@noi.net)</u>	Facility Contact	<u>Jerry Tillia, Chairman (nbtma@noi.net)</u>
Applicant Phone	<u>(724) 667-7999</u>	Facility Phone	<u>(724) 667-7999</u>
Client ID	<u>136944</u>	Site ID	<u>244309</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>North Beaver Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Lawrence</u>
Date Application Received	<u>June 3, 2022</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>June 9, 2022</u>	If No, Reason	<u>-</u>
Purpose of Application	<u>.</u>		

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The Permittee should be able to meet the limits of this permit, which will protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

- A. Stormwater into sewers
- B. Right of way
- C. Solids handling
- D. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

- II. Solids Management

There are no open violations in effects for Client ID (136944) as of 1/25/2024.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley	1/25/2024
		Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	
X		Vacant / Environmental Engineer Manager	Okay to Draft JCD 1/30/2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>0.223</u>
Latitude	<u>40° 58' 10.00"</u>	Longitude	<u>-80° 27' 1.00"</u>
Quad Name	<u>-</u>	Quad Code	<u>-</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Hickory Run (TSF)</u>	Stream Code	<u>35394</u>
NHD Com ID	<u>125561032</u>	RMI	<u>5.1</u>
Drainage Area	<u>17.8</u>	Yield (cfs/mi ²)	<u>0.077</u>
Q ₇₋₁₀ Flow (cfs)	<u>1.37</u>	Q ₇₋₁₀ Basis	<u>calculated</u>
Elevation (ft)	<u>1002</u>	Slope (ft/ft)	<u>0.00884</u>
Watershed No.	<u>20-B</u>	Chapter 93 Class.	<u>TSF</u>
Existing Use	<u>-</u>	Existing Use Qualifier	<u>-</u>
Exceptions to Use	<u>-</u>	Exceptions to Criteria	<u>-</u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u>-</u>		
Source(s) of Impairment	<u>-</u>		
TMDL Status	<u>-</u>	Name	<u>-</u>
Background/Ambient Data		Data Source	
pH (SU)	<u>8.1</u>	Previous stream background data	<u>-</u>
Temperature (°F)	<u>-</u>		<u>-</u>
Hardness (mg/L)	<u>-</u>		<u>-</u>
Other:	<u>-</u>		<u>-</u>
Nearest Downstream Public Water Supply Intake	<u>Beaver Falls Municipal Authority - Eastvale</u>		
PWS Waters	<u>Beaver River</u>	Flow at Intake (cfs)	<u>561</u>
PWS RMI	<u>5.0</u>	Distance from Outfall (mi)	<u>10.6</u>

Sludge use and disposal description and location(s): Sludge is hauled by Daltons Sanitary Service to the New Castle Sanitation Authority, where it is disposed of at an approved landfill.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.223 MGD of treated sewage from an existing Publicly Owned Treatment Works (POTW) in North Beaver Township Lawrence County.

Treatment permitted under WQM Permit 3701402 consists of the following: A raw sewage pumping station, an open channel grinder with bypass bar screen, a distribution chamber, three Sequential Batch Reactors (SBRs), three aerobic digesters, and chlorine disinfection with two contact tanks.

1. Streamflow:

Little Shenango River at Greenville Streamgage No.03102500 (1980-2000):

Drainage Area:	<u>104</u>	sq. mi.	(USGS StreamStats)
Q ₇₋₁₀ :	<u>8.0</u>	cfs	(USGS StreamStats)
Yieldrate:	<u>0.077</u>	cfs/mi	(calculated)

Hickory Run at Outfall 001:

Drainage Area:	<u>17.8</u>	sq. mi.	(USGS StreamStats)
Yieldrate:	<u>0.077</u>	cfs/mi	(calculated above)
% of stream allocated:	<u>100%</u>	Basis:	<u>No nearby discharges</u>
Q ₇₋₁₀ :	<u>1.37</u>	cfs	(Calculated)

2. Wasteflow:

Maximum discharge: 0.223 MGD = 0.344 cfs

Runoff flow period: 24 hours Basis: Runoff flow for municipal STPs

The calculated stream flow (Q₇₋₁₀) is greater than 3 times the permitted discharge flow. In accordance with the SOP, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, will not be evaluated with this renewal.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, E. Coli, Total Phosphorus, Total Nitrogen, NH₃-N, CBOD₅, Dissolved Oxygen, and Disinfection.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

The measurement frequency was previously set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

b. Total Suspended Solids

Limits are 30.0 mg/l as a monthly average and 60.0 as an instantaneous maximum.

Basis: Application of Chapter 92a47 technology-based limits

c. Fecal Coliform

05/01 - 09/30: 200/100ml (monthly average geometric mean)
1,000/100ml (instantaneous maximum)

10/01 - 04/30: 2,000/100ml (monthly average geometric mean)
10,000/100ml (instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits

d. E. Coli

Monitoring was added for E. Coli at a frequency of 1/quarter.

Basis: Application of Chapter 92a.61 as recommended by the SOP for flows greater than 0.05 MGD and less than 1.0 MGD.

e. Total Phosphorus

Chapter 96.5 does not apply. Therefore, the previous monitoring for Total Phosphorus will be retained in accordance with the SOP, based on Chapter 92a.61.

f. Total Nitrogen

The previous monitoring for Total Nitrogen will be retained in accordance with the SOP, based on Chapter 92a.61.

g. Ammonia-Nitrogen (NH₃-N)

Median discharge pH to be used: 7.7 Standard Units (S.U.)

Basis: eDMR data from previous 12 months

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 25°C (default value used for TSF modeling)

Background NH₃-N concentration: 0.0 mg/l

Basis: Default value

Calculated NH₃-N Summer limits: 3.2 mg/l (monthly average)
6.4 mg/l (instantaneous maximum)

Calculated NH₃-N Winter limits: 9.6 mg/l (monthly average)
19.2 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer NH₃-N limits above (see Attachment 1). The winter limits are calculated as three times the summer limits. These limits are more restrictive than the previous permit. Based on eDMR data, the more restrictive limits are attainable and will be set with this renewal without a compliance schedule.

h. CBOD₅

Median discharge pH to be used: 7.7 Standard Units (S.U.)

Basis: eDMR data from previous 12 months

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 25°C (default value used for TSF modeling)

Background CBOD₅ concentration: 2.0 mg/l

Basis: Default value

Calculated CBOD₅ limits: 25.0 mg/l (monthly average)

50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated CBOD₅ limits above (see Attachment 1). These limits are the same as the previous permit and will be retained.

i. Influent Total Suspended Solids and BOD₅

Monitoring for these two parameters will be retained as recommended in the SOP for POTWs, as authorized under Chapter 92a.61.

j. Dissolved Oxygen (DO)

The technology-based minimum of 4.0 mg/l is recommended by the WQ Model (see Attachment 1) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. This limit is the same as the previous permit and will be retained.

The measurement frequency was previously set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

k. Disinfection

☐ Ultraviolet (UV) light monitoring

☒ Total Residual Chlorine (TRC) limits: 0.5 mg/l (monthly average)
1.6 mg/l (instantaneous maximum)

Basis: The technology-based TRC limits above were calculated using the Department's TRC Calculation Spreadsheet (see Attachment 2). The limits are the same as the previous NPDES Permit and will be retained.

The measurement frequency was previously set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001), which will be retained.

4. Reasonable Potential Analysis for Receiving Stream:

A Reasonable Potential Analysis was performed in accordance with State practices for Outfall 001 using the Department's Toxics Management Spreadsheet (see Attachment 3).

Result: Per the SOP, since the discharge concentration for Total Copper was greater than 10% of the calculated WQBEL, 1/quarter monitoring will be added to this renewal.

5. Reasonable Potential for Downstream Public Water Supply (PWS):

The Department's Toxics Management Spreadsheet does not calculate limits for parameters that are based on PWS criteria (TDS, Chloride, Bromide, and Sulfate).

Nearest Downstream potable water supply (PWS): Beaver Falls Municipal Authority - Eastvale

Distance downstream from the point of discharge: 10.6 miles (approximate)

Parameter	PWS Criteria (mg/l)	Discharge Maximum (mg/l)
TDS	500	750
Chloride	250	315
Bromide	1.0	0.17
Sulfate	250	44.1

Since Bromide and Sulfate are discharged at concentrations less than the criteria at the PWS, no limits or monitoring are necessary as significant dilution is available. However, since TDS and Chloride were greater than the criteria at the PWS, mass balance calculations were performed below:

Mass balance for TDS at the PWS intake:

$$\begin{aligned}
 &(\text{sf @ PWS})(\text{bkrd. conc.}) + (\text{wf})(x) = (\text{tot. flow})(\text{criteria}) \\
 &(1.37 \text{ cfs})(150 \text{ mg/l}) + (0.344 \text{ cfs})(x) = (1.71 \text{ cfs})(500 \text{ mg/l}) \\
 &x = 1,888 \text{ mg/l (renewal application maximum was 750 mg/l - ok)}
 \end{aligned}$$

Mass balance for Chlorides at the PWS intake:

$$\begin{aligned}
 &(\text{sf @ PWS})(\text{bkrd. conc.}) + (\text{wf})(x) = (\text{tot. flow})(\text{criteria}) \\
 &(1.37 \text{ cfs})(0 \text{ mg/l}) + (0.344 \text{ cfs})(x) = (1.71 \text{ cfs})(250 \text{ mg/l}) \\
 &x = 1,242 \text{ mg/l (renewal application maximum was 315 mg/l - ok)}
 \end{aligned}$$

Result: No limits or monitoring are necessary for TDS and Chlorides since significant dilution is available.

6. Industrial/Commercial users:

Business Name	Business Type	Average Flow (gpd)
Mohawk High School	Educational Institution	14,000

7. Flow Information:

The Hickory View Terrace WWTP receives 100% of its flow from the North Beaver Township, which consists of separate sewers.

8. Anti-Backsliding:

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

9. Attachment List:

Attachment 1 - WQ Modeling Printouts

Attachment 2 - TRC_Calc Spreadsheet

Attachment 3 - Toxics Management Spreadsheet

(The Attachments above can be found at the end of this document)

Compliance History

DMR Data for Outfall 001 (from December 1, 2022 to November 30, 2023)

Parameter	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22
Flow (MGD) Average Monthly	0.0552	0.0566	0.0561	0.0682	0.0547	0.0486	0.0675	0.0853	0.17428	0.0869	0.127	0.0728
Flow (MGD) Weekly Average	0.0601	0.0592	0.0604	0.1113	0.0712	0.0525	0.0898	0.1042	0.24644	0.1024	0.142	0.0816
pH (S.U.) Instantaneous Minimum	7.21	7.31	7.72	7.54	7.4	7.1	7.1	7.7	7.7	7.8	7.7	7.7
pH (S.U.) Instantaneous Maximum	7.98	8.15	8.33	8.38	8.2	7.8	8.4	8.1	8.1	8.1	8.2	8.1
DO (mg/L) Instantaneous Minimum	6.28	4.79	8.05	6.33	5.6	4.9	5.6	6.2	6.4	5.9	5.8	6.0
TRC (mg/L) Average Monthly	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.30	0.3	0.3	0.3	0.3
TRC (mg/L) Instantaneous Maximum	0.54	0.56	0.59	1.08	0.46	0.44	0.26	0.37	0.36	0.36	0.4	0.38
CBOD5 (lbs/day) Average Monthly	2.3	< 1.7	3.6	2.1	3.0	< 2.4	< 1.8	< 1.9	< 1.7	< 1.6	< 2.2	< 1.3
CBOD5 (lbs/day) Weekly Average	2.9	2.4	5.6	3.8	5.9	3.7	2.4	3.2	< 2.0	< 1.3	< 3.6	< 1.8
CBOD5 (mg/L) Average Monthly	5	< 4	7	5	7	< 6	< 3	< 3	< 2	< 2	< 2	< 2
CBOD5 (mg/L) Weekly Average	6	6.98	11.1	7.88	14	8	4	4	2	< 2	< 2	2
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	70	72	80	39	91	74	106	128	157	116	143	130
BOD5 (mg/L) Raw Sewage Influent Average Monthly	158	151	170.4	95	212	181	193	< 184	190	169.3	139.9	205
TSS (lbs/day) Average Monthly	< 2.4	< 2.4	< 10.4	5.0	< 2.3	< 2.1	< 2.9	< 3.6	< 4.3	< 4.0	< 5.4	< 3.2
TSS (lbs/day) Raw Sewage Influent Average Monthly	43	57	60	26	98	52	56	84	89	61	99	57
TSS (lbs/day) Weekly Average	2.8	< 2.8	20.9	13.0	< 2.9	< 2.3	< 4.2	4.7	< 5.0	< 3.3	< 9.1	< 4.4
TSS (mg/L) Average Monthly	< 5	< 5	< 21	12	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5

**NPDES Permit Fact Sheet
Hickory View Terrace WWTP**

NPDES Permit No. PA0104108

TSS (mg/L) Raw Sewage Influent Average Monthly	96	122	136	65	233	127	95	113	106	80	101	96
TSS (mg/L) Weekly Average	6	6	41	27	7	6	< 5	6	< 5	< 5	< 5	< 5
Fecal Coliform (No./100 ml) Geometric Mean	> 26	< 2	< 17	51	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	> 2420	5	88	24200	2	1	1	1	< 1	< 1	1	< 1
Total Nitrogen (mg/L) Average Quarterly			4.97			22.4			3.63			3.11
Ammonia (lbs/day) Average Monthly	< 2.4	1.0	3.3	4.54	0.7	< 1.8	< 1.0	< 0.4	< 0.6	< 0.4	< 0.5	< 0.3
Ammonia (mg/L) Average Monthly	< 5.0	2.2	6.9	< 1.4	2.0	< 4.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phosphorus (mg/L) Average Quarterly			2.4			1.83			1.46			4.6

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	23.5	37.5	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD5								
Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS								
Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	28.1	42.2	XXX	30.0	45.0	60	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Ammonia Nov 1 - Apr 30	17.8	XXX	XXX	9.6	XXX	19.2	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	5.9	XXX	XXX	3.2	XXX	6.4	1/week	24-Hr Composite

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Copper	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: at Outfall 001, after disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The Total Residual Chlorine (TRC) limits are technology-based on Chapter 92a.48. The limits for CBOD₅, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. Monitoring for influent BOD₅ and influent TSS is based on Chapter 92a.61. Monitoring for E. Coli, Total Nitrogen, Ammonia-Nitrogen, Total Phosphorus, and Total Copper is based on Chapter 92a.61.

Attachment 1

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
20B		35394	HICKORY RUN				
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)
6.610	Bessemer MA	PA0210471	0.350	CBOD5	25		
				NH3-N	2.48	4.96	
				Dissolved Oxygen			4
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)
5.100	Hickory View	PA0104108	0.223	CBOD5	25		
				NH3-N	3.23	6.46	
				Dissolved Oxygen			4

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>	
20B	35394	HICKORY RUN	
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>
6.610	0.350	25.000	7.814
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>
19.560	0.563	34.732	0.157
<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>
9.18	1.141	0.77	1.029
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>
6.435	9.087	Tsivoglou	5
<u>Reach Travel Time (days)</u>	Subreach Results		
0.586	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>
			<u>D.O. (mg/L)</u>
	0.059	8.44	0.73
	0.117	7.76	0.68
	0.176	7.13	0.64
	0.234	6.56	0.61
	0.293	6.03	0.57
	0.352	5.54	0.54
	0.410	5.09	0.51
	0.469	4.68	0.48
	0.527	4.31	0.45
	0.586	3.96	0.42
			7.02
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>
5.100	0.573	25.000	7.811
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>
20.831	0.587	35.460	0.184
<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>
7.02	0.591	0.82	1.029
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>
6.600	17.439	Tsivoglou	5
<u>Reach Travel Time (days)</u>	Subreach Results		
1.690	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>
			<u>D.O. (mg/L)</u>
	0.169	6.19	0.69
	0.338	5.46	0.58
	0.507	4.82	0.49
	0.676	4.25	0.41
	0.845	3.75	0.34
	1.014	3.30	0.29
	1.183	2.91	0.24
	1.352	2.57	0.20
	1.521	2.27	0.17
	1.690	2.00	0.14
			7.54

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 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	5		

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20B	35394	HICKORY RUN	6.610	1045.00	15.50	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)						Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.077	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	8.10	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
Bessemer MA	PA0210471	0.3500	0.0000	0.0000	0.000	25.00	7.50

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	7.54	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
20B	35394	HICKORY RUN	5.100	1002.00	17.80	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)						Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.077	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	8.10	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
Hickory View	PA0104108	0.2230	0.0000	0.0000	0.000	25.00	7.70

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	7.54	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
20B	35394	HICKORY RUN	0.000	764.00	27.20	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		Stream	
									Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.077	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	8.10	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	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	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>						
20B		35394				HICKORY RUN						
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												
6.610	1.19	0.00	1.19	.5414	0.00539	.563	19.56	34.73	0.16	0.586	25.00	7.81
5.100	1.37	0.00	1.37	.8864	0.00884	.587	20.83	35.46	0.18	1.690	25.00	7.81
Q1-10 Flow												
6.610	0.76	0.00	0.76	.5414	0.00539	NA	NA	NA	0.13	0.687	25.00	7.75
5.100	0.88	0.00	0.88	.8864	0.00884	NA	NA	NA	0.16	1.940	25.00	7.76
Q30-10 Flow												
6.610	1.62	0.00	1.62	.5414	0.00539	NA	NA	NA	0.18	0.518	25.00	7.86
5.100	1.86	0.00	1.86	.8864	0.00884	NA	NA	NA	0.21	1.513	25.00	7.85

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
20B		35394		HICKORY RUN			

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
6.610	Bessemer MA	4.06	9.8	4.06	9.8	0	0
5.100	Hickory View	2.86	10.12	4.03	10.12	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
6.610	Bessemer MA	.68	2.73	.68	2.48	2	9
5.100	Hickory View	.56	3.56	.69	3.23	2	9

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)		
6.61	Bessemer MA	25	25	2.48	2.48	4	4	0	0
5.10	Hickory View	25	25	3.23	3.23	4	4	0	0

Attachment 2

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9					
1.37	= Q stream (cfs)	0.5	= CV Daily		
0.223	= 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)	0	= Decay Coefficient (K)		
Source	Reference	AFC Calculations		Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.286		1.3.2.iii	WLA cfc = 1.246
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 0.479		5.1d	LTA_cfc = 0.724
Source	Effluent Limit Calculations				
PENTOXSD TRG	5.1f	AML MULT = 1.231			
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
		INST MAX LIMIT (mg/l) = 1.635			
WLA afc	$(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... \\ ...+Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)$				
LTAMULT afc	$EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)$				
LTA_afc	wla_afc*LTAMULT_afc				
WLA_cfc	$(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... \\ ...+Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)$				
LTAMULT_cfc	$EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)$				
LTA_cfc	wla_cfc*LTAMULT_cfc				
AML MULT	$EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))$				
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)				
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)				

Attachment 3



Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions Discharge Stream

Facility: **Hickory View Terrace WWTP** NPDES Permit No.: **PA0104108** Outfall No.: **001**

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

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
0.223	100	7.7						

				0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc	Trib Conc	Stream Conc	Daily CV	Hourly CV	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L	750									
	Chloride (PWS)	mg/L	315									
	Bromide	mg/L	0.17									
	Sulfate (PWS)	mg/L	44.1									
	Fluoride (PWS)	mg/L										
Group 2	Total Aluminum	µg/L										
	Total Antimony	µg/L										
	Total Arsenic	µg/L										
	Total Barium	µg/L										
	Total Beryllium	µg/L										
	Total Boron	µg/L										
	Total Cadmium	µg/L										
	Total Chromium (III)	µg/L										
	Hexavalent Chromium	µg/L										
	Total Cobalt	µg/L										
	Total Copper	mg/L	0.005									
	Free Cyanide	µg/L										
	Total Cyanide	µg/L										
	Dissolved Iron	µg/L										
	Total Iron	µg/L										
	Total Lead	mg/L	< 0.001									
	Total Manganese	µg/L										
	Total Mercury	µg/L										
	Total Nickel	µg/L										
	Total Phenols (Phenolics) (PWS)	µg/L										
	Total Selenium	µg/L										
	Total Silver	µg/L										
	Total Thallium	µg/L										
	Total Zinc	mg/L	0.0151									
	Total Molybdenum	µg/L										
	Acrolein	µg/L	<									
	Acrylamide	µg/L	<									
	Acrylonitrile	µg/L	<									
	Benzene	µg/L	<									
	Bromoform	ua/L	<									

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

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



Stream / Surface Water Information

Hickory View Terrace WWTP, NPDES Permit No. PA0104108, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: 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	035394	5.1	1002	17.8			Yes
End of Reach 1	035394	0	764	27.2			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	5.1	0.077										100	8.1		
End of Reach 1	0	0.077										100	8.1		

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	5.1														
End of Reach 1	0														



Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Hickory View Terrace WWTP, NPDES Permit No. PA0104108, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

☒ All

☐ Inputs

☐ Results

☐ Limits

☒ Hydrodynamics

Q_{7-10}

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)
5.1	1.37		1.37	0.345	0.009	0.567	19.144	33.79	0.158	1.97	7.997
0	2.09		2.0944								

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)
5.1	9.79		9.79	0.345	0.009	1.238	19.144	15.468	0.428	0.729	3.621
0	14.177		14.18								

☒ Wasteload Allocations

☒ AFC

CCT (min): 7.997

PMF: 1

Analysis Hardness (mg/l): 100

Analysis pH: 7.98

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 Copper	0	0		0	13.439	14.0	69.6	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	406	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	596	Chem Translator of 0.978 applied

☒ CFC

CCT (min): 7.997

PMF: 1

Analysis Hardness (mg/l): 100

Analysis pH: 7.98

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 Copper	0	0		0	8.956	9.33	46.4	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	15.8	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	596	Chem Translator of 0.986 applied

☒ **THH**

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☒ **CRL**

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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 Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☒ **Recommended WQBELs & Monitoring Requirements**

No. Samples/Month:

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	Report	Report	Report	Report	Report	mg/L	0.045	AFC	Discharge Conc > 10% WQBEL (no RP)

☒ **Other Pollutants without Limits or Monitoring**

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Lead	N/A	N/A	Discharge Conc < TQL
Total Zinc	0.38	mg/L	Discharge Conc ≤ 10% WQBEL