pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0218839**
Facility Type	**Municipal**	APS ID	**1072128**
Major / Minor	**Minor**	Authorization ID	**1411645**

Applicant and Facility Information

Applicant Name	**Indiana County Municipal Service Authority**	Facility Name	**Cherry Tree STP**
Applicant Address	602 Kolter Drive	Facility Address	1018 Stifflertown Road
	Indiana, PA 15701-3570		Cherry Tree, PA 15724-9726
Applicant Contact	Tricia Lefko	Facility Contact	Tricia Lefko
Applicant Phone	(724) 349-6640	Facility Phone	(724) 349-6640
Client ID	38534	Site ID	534629
Ch 94 Load Status	Not Overloaded	Municipality	Burnside Township
Connection Status	No Limitations	County	Clearfield
Date Application Received	September 27, 2022	EPA Waived?	Yes
Date Application Accepted	October 11, 2022	If No, Reason	

Purpose of Application: Application for the renewal of the existing individual NPDES permit.

Summary of Review

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
X		Jonathan P. Peterman / Project Manager	August 22, 2024
X		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	August 27, 2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.08
Latitude	40º 43' 49.55"	Longitude	-78º 48' 8.94"
Quad Name	Barnesboro	Quad Code	1315
Wastewater Description:	Sewage Effluent		
Receiving Waters	West Branch Susquehanna River (WWF, MF)	Stream Code	18668
NHD Com ID	61836277	RMI	227.28
Drainage Area	59.1	Yield (cfs/mi^2)	0.089
Q_{7-10} Flow (cfs)	5.23	Q_{7-10} Basis	Streamgage No. 01541000
Elevation (ft)	1354	Slope (ft/ft)	n/a
Watershed No.	8-B	Chapter 93 Class.	WWF, MF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, SILTATION		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE		
TMDL Status	Final	Name	West Branch Susquehanna
Nearest Downstream Public Water Supply Intake	NRG REMA LLC		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	117
PWS RMI	125.81	Distance from Outfall (mi)	101.47

Other Comments: Q7-10 documentation and calculations are included in Attachment A.

Treatment Facility Summary

Treatment Facility Name: Cherry Tree STP

WQM Permit No.	Issuance Date	Comments
WQM 3202407	12/8/2003	Original construction

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Ultraviolet	0.08
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.08	181	Not Overloaded	Aerobic Digestion	Landfill

The Cherry Tree Wastewater Treatment Plant is a dual-train extended aeration package plant. Treatment at the facility consists of the following:

- One (1) Manual bar screen
- One (1) Equalization tank
- Two (2) Aeration tanks
- Two (2) Clarifiers
- One (1) Ultraviolet disinfection chamber
    - Two (2) banks with four (4) bulbs each
- One (1) Aerobic digester
- One (1) Outfall 001 to the West Branch Susquehanna River.

TMDL Impairment

-The West Branch Susquehanna River has an existing TMDL in the discharge segment for metals and siltation. The cause of this impairment is AMD. Previous permits established monitoring requirements for total aluminum, iron, and manganese in order to characterize the discharged wastewater. This sampling enabled the Department to determine if the discharge was contributing to the impairment of the West Branch Susquehanna River; consistent with the West Branch Susquehanna River TMDL. Sample results for these three parameters indicated that the discharge concentrations are all below 25 PA Chapter 93 criteria. Therefore, it was determined that the discharge is not contributing to the impairment. See Appendix F for this previously collected data.

Chesapeake Bay Requirements

Since this facility's hydraulic design capacity is 0.08 MGD, the permittee will be required to monitor and report TN and TP throughout the permit term at a frequency no less than annually in accordance with the Phase III WIP Chesapeake Bay Strategy for Phase V facilities (0.002 MGD to 0.2 MGD) unless at least two of years of monitoring has already been completed. This sampling was previously conducted and the yearly monitoring requirements for nutrients were removed. No further monitoring is required at this time. See Appendix E for this previously collected data.

Anti-Backsliding

In accordance with 40 CFR 122.44(l)(1) and (2), this permit does not contain effluent limitations, standards, or conditions that are less stringent than the previous permit.

Existing Effluent Limitations and Monitoring Requirements

Existing Limits – Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	16	26	XXX	25.0	40.0	50	2/month	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids	20	30	XXX	30.0	45.0	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen	Report	Report	XXX	Report	Report	XXX	2/month	Grab
Copper, Total	Report	XXX	XXX	Report	XXX	XXX	1/month	Grab
Ultraviolet light dosage (mjoules/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab

*The existing effluent limits for Outfall 001 were based on a design flow of 0.08 MGD.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .08
Latitude 40º 43' 50.00" **Longitude** -78º 48' 8.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Water Quality-Based Limitations

To establish whether or not water-quality based effluent limitations (WQBELs) are required, the Department models in-stream conditions. In order to determine limitations for CBOD5, ammonia-N and dissolved oxygen, the Department utilizes the WQM 7.0 v1.0b model and in order to determine limitations for toxics, the Department utilizes the Toxics Management Spreadsheet (TMS).

WQM 7.0 for Windows, Version 1.0b, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen
Since there have been no changes to the watershed or the facility, the previous modeling results shall be utilized. The model was previously run using the Q7-10 stream flow, background water quality, average annual design flow, and other discharge characteristics. The existing technology based effluent limit (advanced treatment standards) for $CBOD_5$ (25 mg/l) and NH3-N (25.0 mg/l) were used as inputs for the modeling. The DO minimum daily average criterion from §93.7 (3.0 mg/L) was used for the in-stream objective for the model. The summary of the output is as follows:

Parameter	Effluent Limit		
	30 Day Average	Maximum	Minimum
CBOD5	**25**	**--**	**--**
Ammonia-N	**25**	**50**	**--**
Dissolved Oxygen	**--**	**--**	**3**

The previous model did not recommend more stringent water-quality based effluent limitations with regards to CBOD5, ammonia-nitrogen, and dissolved oxygen. Refer to the Appendix for the previous WQM 7.0 inputs and results. The existing effluent limits will remain.

Toxics Management Spreadsheet (TMS)
This model is a single discharge wasteload allocation program for toxics that uses a mass-balance water quality analysis to determine recommended water quality-based effluent limits. The model incorporates consideration for mixing, first-order decay and other factors to computes a Wasteload Allocation (WLA) for each applicable criterion. Finally, the model determines a maximum water quality-based effluent limitation (WQBEL) for each parameter and outputs the more stringent of the WQBEL or the input concentration. The output of which is the recommends average monthly and maximum daily effluent limitations.

Refer to Appendix D for the Toxics Management Spreadsheet and the Total Copper section below.

Best Professional Judgment (BPJ) Limitations
See D.O. section below.

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 the abovementioned 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) and/or BPJ.

Proposed Limits - 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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	16	26	XXX	25.0	40.0	50	2/month	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids	20	30	XXX	30.0	45.0	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen	Report	Report	XXX	Report	Report	XXX	2/month	Grab
Copper, Total	Report	XXX	XXX	Report	XXX	XXX	1/month	Grab

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ultraviolet light dosage (mjoules/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

*The proposed effluent limits for Outfall 001 were based on a design flow of 0.08 MGD.

Effluent Limit Determination for Outfall 001

General Information
All of the limits proposed above are consistent with other permits issued for minor wastewater treatment plants in the region. The associated mass-based limits (lbs/day) for all parameters were based on the formula: design flow (average annual) (MGD) x concentration limit (mg/L) at design flow x conversion factor (8.34). All effluent limits were then rounded down in accordance with the rounding rules established in the *Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001)*, Chapter 5 - Specifying Effluent Limitations in NPDES Permits.

Flow
Reporting of the average monthly flow and daily maximum is consistent with monitoring requirements for other treatment plants of this size.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
The results of the WQM 7.0 model show that the previously applied secondary treatment standards (25 PA Code §92a.47 (a) (1&2)) for $CBOD_5$ are protective of water quality.

Total Suspended Solids (TSS)
The previously applied technology based secondary treatment standards (25 PA Code §92a.47 (a) (1&2)) for TSS will remain as well.

pH
CFR Title 40 §133.102(c) and 25 PA Code §95.2(1) provide the basis of effluent limitations for pH. The existing limits will remain.

Fecal Coliforms
The existing fecal coliform limits with I-max limits were updated from the previous Chapter 92 code to correspond with what is specified in the updated 25 PA Code § 92a.47 (a)(4)&(5).

Ultraviolet light dosage (mjoules/cm²)
The existing permit has the permittee reporting UV Dosage in mjoules/cm². This was verified and corrected in the previous review cycle and will remain.

Dissolved Oxygen (DO)
Given results of the WQM 7.0 model, a discharge of effluent from this facility with a DO concentration of 3 mg/l would not result in an exceedance of water quality requirements for this stream. It is anticipated, based on similar technology, that the DO concentration in the effluent would be greater than 3.0 mg/l. Therefore, based on BPJ, only monitoring will be required for this facility.

E. Coli
25 PA Code § 92a.61 provide the basis of monitoring requirements for E. Coli. Yearly monitoring will be required going forward.

Influent BOD_5 and TSS
The Department requires the reporting of raw sewage influent monitoring for BOD_5 and TSS in all POTW permits. This provides the Department with the ability to monitor the percent removal of each parameter as stipulated in section 2 of the Part A conditions and maintain records of the BOD_5 loading as required by 25 Pa. Code Chapter 94. The monitoring frequencies and sample types are identical to the effluent sampling.

Total Copper
The previous NPDES permit proposed monthly monitoring requirements for total copper to better characterize the wastewater so a future decision can be made to eliminate monitoring or establish limits. The data from this monitoring period is provided in Appendix D. The 90th percentile of long-term data discharge concentrations was inputted into the TMS which determined that effluent monitoring should remain in the permit. Given that this facility does not have industrial contributions, the source of the copper is likely to be from residential plumbing.

Compliance History

Summary of Inspections -The last inspection of the facilities was conducted by the Department on 7/12/24 which reveals the facility was operating normally. No violations were noted.
WMS Query Summary - A WMS Query was run at *Reports - Violations & Enforcements – Open Violations for Client Report* to determine whether there are any unresolved violations associated with the client that will affect issuance of the permit (per CSL Section 609). This query revealed a failure to pay the annual fee. The operations section is currently working with the permittee in order to achieve compliance with this open violation. This will be resolved prior to permit issuance.

DMRs Summary - Upon review of the last year of DMR's, the facility appears to be operating within the given concentration limits.

Compliance History

DMR Data for Outfall 001 (from July 1, 2023 to June 30, 2024)

Parameter	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23
Flow (MGD) Average Monthly	0.026	0.03	0.042	0.032	0.027	0.032	0.033	0.028	0.027	0.026	0.034	0.034
Flow (MGD) Daily Maximum	0.028	0.038	0.05	0.037	0.036	0.039	0.040	0.034	0.032	0.027	0.045	0.041
pH (S.U.) Instantaneous Minimum	6.4	6.4	6.0	6.0	6.2	6.2	6.1	6.1	6.2	6.37	6.4	6.2
pH (S.U.) Instantaneous Maximum	7.1	7.5	7.2	7.2	7.1	7.3	7.2	7.1	7.2	7.2	7.0	6.8
DO (mg/L) Instantaneous Minimum	4.0	4.0	4.0	4.2	3.5	4.0	2.2	3.8	3.0	3.0	3.2	3.6
CBOD5 (lbs/day) Average Monthly	< 0.6	2.0	< 1.0	1.0	< 0.7	< 0.8	< 0.8	< 0.6	< 0.7	< 0.6	< 0.9	< 0.9
CBOD5 (lbs/day) Weekly Average	< 0.8	2.0	1.0	2.0	0.9	< 0.8	< 0.9	< 0.7	< 0.8	< 0.7	< 1.0	1.0
CBOD5 (mg/L) Average Monthly	< 3.0	7.0	< 4.0	4.0	< 4.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
CBOD5 (mg/L) Weekly Average	< 3.0	7.3	4.5	5.1	4.1	< 3.0	< 3.0	< 3.0	3.6	< 3.0	< 3.0	4.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	249.0	271.0	260.0	244.0	323.0	358.0	345.0	504.0	394.0	311.0	73.0	382.0
TSS (lbs/day) Average Monthly	< 0.5	1.2	2.5	4.0	0.8	1.4	1.2	2.2	0.5	< 0.6	1.3	1.5
TSS (lbs/day) Weekly Average	0.7	1.0	3.0	5.0	1.0	2.0	2.0	3.0	0.6	< 0.6	2.0	2.0
TSS (mg/L) Average Monthly	< 3.0	5.0	7.0	14.0	4.0	5.0	4.0	11.0	3.0	< 3.0	4.0	6.0
TSS (mg/L) Raw Sewage Influent Average Monthly	259.0	287.0	264.0	237.0	343.0	579.0	617.0	690.0	457.0	452.0	98.0	324.0

TSS (mg/L) Weekly Average	4.0	6.0	8.0	17.0	4.0	6.0	6.0	16.0	3.0	3.0	5.0	8.0
Fecal Coliform (No./100 ml) Geometric Mean	< 11.0	4.0	< 2.0	< 4.0	< 1.0	8.0	< 1.0	18.0	1.0	< 1.0	< 20.0	15.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	30.5	4.1	< 4.0	13.1	< 1.0	29.5	< 1.0	60.2	1.0	< 1.0	396.8	218.7
Ammonia (lbs/day) Average Monthly	< 0.4	2.0	< 0.4	< 0.03	< 0.02	< 0.03	< 0.03	0.02	< 0.03	0.05	0.1	0.3
Ammonia (lbs/day) Weekly Average	0.7	3.0	0.7	< 0.03	0.02	0.03	2.0	0.03	0.04	0.05	0.2	0.6
Ammonia (mg/L) Average Monthly	< 1.789	8.747	< 0.999	< 0.1	< 0.1	< 0.1053	< 0.1	0.1167	< 0.1333	0.2319	0.5621	1.2827
Ammonia (mg/L) Weekly Average	3.477	9.884	1.898	< 0.1	< 0.1	0.1105	< 0.1	0.1167	0.1665	0.2443	0.9616	2.395
Total Copper (lbs/day) Average Monthly	0.005	0.02	0.008	0.006	0.004	0.005	0.0001	0.003	0.004	0.003	0.004	0.003
Total Copper (mg/L) Average Monthly	0.0235	0.111	0.0216	0.0199	0.0197	0.0182	0.0001	0.0167	0.0158	0.0137	0.004	0.0135
UV Dosage (mjoules/cm^2) Instantaneous Minimum	3.0	2.7	2.9	3.0	3.7	0.4	2.3	3.5	3.2	4.0	2.4	2.6

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☒	Toxics Management Spreadsheet (see Attachment **D**)
☐	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, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☒	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☒	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

APPENDIX A

$Q_{7\text{-}10}$ ANALYSIS AND STREAM DATA

Low-Flow (Q_{7-10}) Calculation

Facility: **ICMSA WWTP**
NPDES Permit No. **PA0218839**

Gage Information

Drainage Area: **315** mi^2
Q_{7-10}: **27.9** cfs
LFY: **0.089** cfsm

Outfall Information

Drainage Area: **59.1** mi^2
Q_{7-10}: **5.23** cfs

Downstream Locations

RMI: **227.2**
Drainage Area: **60.2** mi^2
Q_{7-10}: **5.33** cfs

RMI: _____
Drainage Area: _____ mi^2
Q_{7-10}: _____ cfs

RMI: _____
Drainage Area: _____ mi^2
Q_{7-10}: _____ cfs

RMI: _____
Drainage Area: _____ mi^2
Q_{7-10}: _____ cfs

RMI: _____
Drainage Area: _____ mi^2
Q_{7-10}: _____ cfs

RMI: _____
Drainage Area: _____ mi^2
Q_{7-10}: _____ cfs

RMI: _____
Drainage Area: _____ mi^2
Q_{7-10}: _____ cfs

RMI: _____
Drainage Area: _____ mi^2
Q_{7-10}: _____ cfs

USGS
science for a changing world

Prepared in cooperation with the Pennsylvania Department of Environmental Protection

Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

Open-File Report 2011–1070

U.S. Department of the Interior
U.S. Geological Survey

APPENDIX B

PREVIOUS WQM 7.0 MODEL INPUT/OUTPUT

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
10D	18668	WEST BRANCH SUSQUEHANNA RI	**227.280**	1354.00	59.10	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.089	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
ICMSA WWTP	PA0218839	0.0800	0.0800	0.0800	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

SWP Basin	Stream Code	Stream Name
10D	18668	WEST BRANCH SUSQUEHANNA RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
227.280	5.26	0.00	5.26	.1238	0.00237	.701	37.16	53	0.21	0.024	25.00	7.00
Q1-10 Flow												
227.280	4.79	0.00	4.79	.1238	0.00237	NA	NA	NA	0.20	0.025	25.00	7.00
Q30-10 Flow												
227.280	6.68	0.00	6.68	.1238	0.00237	NA	NA	NA	0.24	0.021	25.00	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☐
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.91	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.27	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
10D	18668	WEST BRANCH SUSQUEHANNA RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
227.280	ICMSA WWTP	6.76	50	6.76	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
227.280	ICMSA WWTP	1.34	25	1.34	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
227.28	ICMSA WWTP	25	25	25	25	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
10D	18668	WEST BRANCH SUSQUEHANNA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
227.280	0.080	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
37.165	0.701	53.003	0.207
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.53	0.335	0.57	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.122	5.232	Tsivoglou	6
Reach Travel Time (days)			
0.024			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.002	2.53	0.57	7.54
0.005	2.52	0.57	7.54
0.007	2.52	0.57	7.54
0.009	2.52	0.57	7.54
0.012	2.52	0.57	7.54
0.014	2.51	0.57	7.54
0.017	2.51	0.56	7.54
0.019	2.51	0.56	7.54
0.021	2.51	0.56	7.54
0.024	2.50	0.56	7.54

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
10D	18668	WEST BRANCH SUSQUEHANNA RI	**227.200**	1353.00	60.20	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.089	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	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

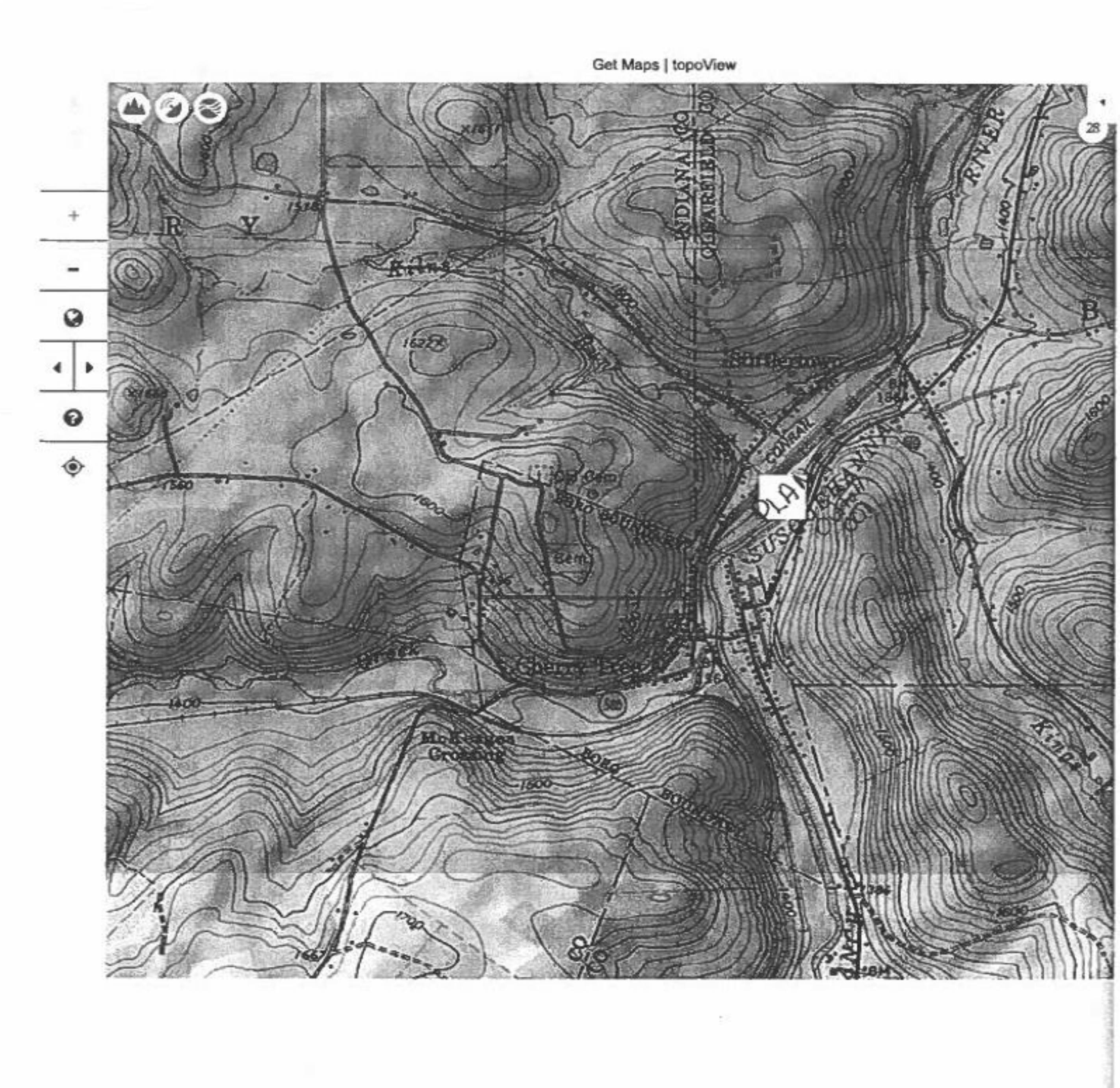
WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
10D	18668	WEST BRANCH SUSQUEHANNA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
227.280	ICMSA WWTP	PA0218839	0.080	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

APPENDIX C

FACILITY MAP AND SCHEMATIC


Get Maps | topoView
INDIANA CO
CLEARFIELD CO
RIVER
CONRAIL
BORO BOUNDARY

APPENDIX D

TOTAL COPPER SAMPLING RESULTS AND ANALYSIS

PERMIT	MONITORING START DATE	MONITORING END DATE	DMR RECEIVED DATE	OUTFALL	PARAMETER CODE	PARAMETER	CONC UNITS	CONC 2 VALUE	SBC
PA0218839	05/01/2018	05/31/2018	06/28/2018	001	01042	Copper, Total	mg/L	0.0199	Avg Mo
PA0218839	06/01/2018	06/30/2018	07/25/2018	001	01042	Copper, Total	mg/L	0.0878	Avg Mo
PA0218839	07/01/2018	07/31/2018	08/27/2018	001	01042	Copper, Total	mg/L	0.0289	Avg Mo
PA0218839	08/01/2018	08/31/2018	09/25/2018	001	01042	Copper, Total	mg/L	0.0284	Avg Mo
PA0218839	09/01/2018	09/30/2018	10/26/2018	001	01042	Copper, Total	mg/L	0.0426	Avg Mo
PA0218839	10/01/2018	10/31/2018	11/16/2018	001	01042	Copper, Total	mg/L	0.0399	Avg Mo
PA0218839	11/01/2018	11/30/2018	12/20/2018	001	01042	Copper, Total	mg/L	0.0325	Avg Mo
PA0218839	12/01/2018	12/31/2018	01/25/2019	001	01042	Copper, Total	mg/L	0.0329	Avg Mo
PA0218839	01/01/2019	01/31/2019	02/23/2019	001	01042	Copper, Total	mg/L	0.02	Avg Mo
PA0218839	02/01/2019	02/28/2019	03/25/2019	001	01042	Copper, Total	mg/L	0.0196	Avg Mo
PA0218839	03/01/2019	03/31/2019	04/24/2019	001	01042	Copper, Total	mg/L	0.028	Avg Mo
PA0218839	04/01/2019	04/30/2019	05/22/2019	001	01042	Copper, Total	mg/L	0.0295	Avg Mo
PA0218839	05/01/2019	05/31/2019	06/26/2019	001	01042	Copper, Total	mg/L	0.0355	Avg Mo
PA0218839	06/01/2019	06/30/2019	07/20/2019	001	01042	Copper, Total	mg/L	0.0311	Avg Mo
PA0218839	07/01/2019	07/31/2019	08/22/2019	001	01042	Copper, Total	mg/L	0.0311	Avg Mo
PA0218839	08/01/2019	08/31/2019	09/25/2019	001	01042	Copper, Total	mg/L	0.0593	Avg Mo
PA0218839	09/01/2019	09/30/2019	10/22/2019	001	01042	Copper, Total	mg/L	0.0382	Avg Mo
PA0218839	10/01/2019	10/31/2019	11/18/2019	001	01042	Copper, Total	mg/L	0.0542	Avg Mo
PA0218839	11/01/2019	11/30/2019	12/12/2019	001	01042	Copper, Total	mg/L	0.0787	Avg Mo
PA0218839	12/01/2019	12/31/2019	01/24/2020	001	01042	Copper, Total	mg/L	0.0309	Avg Mo
PA0218839	01/01/2020	01/31/2020	02/27/2020	001	01042	Copper, Total	mg/L	0.0215	Avg Mo
PA0218839	02/01/2020	02/29/2020	03/23/2020	001	01042	Copper, Total	mg/L	0.022	Avg Mo
PA0218839	03/01/2020	03/31/2020	04/25/2020	001	01042	Copper, Total	mg/L	0.0339	Avg Mo
PA0218839	04/01/2020	04/30/2020	05/21/2020	001	01042	Copper, Total	mg/L	0.0186	Avg Mo
PA0218839	05/01/2020	05/31/2020	06/26/2020	001	01042	Copper, Total	mg/L	0.0171	Avg Mo
PA0218839	06/01/2020	06/30/2020	07/27/2020	001	01042	Copper, Total	mg/L	0.0256	Avg Mo
PA0218839	07/01/2020	07/31/2020	08/27/2020	001	01042	Copper, Total	mg/L	0.0333	Avg Mo
PA0218839	08/01/2020	08/31/2020	09/24/2020	001	01042	Copper, Total	mg/L	0.026	Avg Mo
PA0218839	09/01/2020	09/30/2020	10/21/2020	001	01042	Copper, Total	mg/L	0.0294	Avg Mo

PA0218839	10/01/2020	10/31/2020	11/18/2020	001	01042	Copper, Total	mg/L	0.787	Avg Mo
PA0218839	11/01/2020	11/30/2020	12/15/2020	001	01042	Copper, Total	mg/L	0.0619	Avg Mo
PA0218839	12/01/2020	12/31/2020	01/18/2021	001	01042	Copper, Total	mg/L	0.057	Avg Mo
PA0218839	01/01/2021	01/31/2021	02/16/2021	001	01042	Copper, Total	mg/L	0.0232	Avg Mo
PA0218839	02/01/2021	02/28/2021	03/18/2021	001	01042	Copper, Total	mg/L	0.0242	Avg Mo
PA0218839	03/01/2021	03/31/2021	04/26/2021	001	01042	Copper, Total	mg/L	0.0127	Avg Mo
PA0218839	04/01/2021	04/30/2021	05/12/2021	001	01042	Copper, Total	mg/L	0.0185	Avg Mo
PA0218839	05/01/2021	05/31/2021	06/23/2021	001	01042	Copper, Total	mg/L	0.0206	Avg Mo
PA0218839	06/01/2021	06/30/2021	07/23/2021	001	01042	Copper, Total	mg/L	0.0168	Avg Mo
PA0218839	07/01/2021	07/31/2021	08/25/2021	001	01042	Copper, Total	mg/L	0.0317	Avg Mo
PA0218839	08/01/2021	08/31/2021	09/23/2021	001	01042	Copper, Total	mg/L	0.01	Avg Mo
PA0218839	09/01/2021	09/30/2021	10/26/2021	001	01042	Copper, Total	mg/L	0.0222	Avg Mo
PA0218839	10/01/2021	10/31/2021	11/16/2021	001	01042	Copper, Total	mg/L	0.001	Avg Mo
PA0218839	11/01/2021	11/30/2021	12/13/2021	001	01042	Copper, Total	mg/L	0.0302	Avg Mo
PA0218839	12/01/2021	12/31/2021	01/24/2022	001	01042	Copper, Total	mg/L	0.0204	Avg Mo
PA0218839	01/01/2022	01/31/2022	02/24/2022	001	01042	Copper, Total	mg/L	0.0252	Avg Mo
PA0218839	02/01/2022	02/28/2022	03/23/2022	001	01042	Copper, Total	mg/L	0.0205	Avg Mo
PA0218839	03/01/2022	03/31/2022	04/25/2022	001	01042	Copper, Total	mg/L	0.0154	Avg Mo
PA0218839	04/01/2022	04/30/2022	05/23/2022	001	01042	Copper, Total	mg/L	0.0241	Avg Mo
PA0218839	05/01/2022	05/31/2022	06/24/2022	001	01042	Copper, Total	mg/L	0.0249	Avg Mo
PA0218839	06/01/2022	06/30/2022	07/22/2022	001	01042	Copper, Total	mg/L	0.0278	Avg Mo
PA0218839	07/01/2022	07/31/2022	08/25/2022	001	01042	Copper, Total	mg/L	0.0173	Avg Mo
PA0218839	08/01/2022	08/31/2022	09/27/2022	001	01042	Copper, Total	mg/L	0.027	Avg Mo
PA0218839	09/01/2022	09/30/2022	10/20/2022	001	01042	Copper, Total	mg/L	0.0165	Avg Mo
PA0218839	10/01/2022	10/31/2022	11/28/2022	001	01042	Copper, Total	mg/L	0.0151	Avg Mo
PA0218839	11/01/2022	11/30/2022	12/15/2022	001	01042	Copper, Total	mg/L	0.0135	Avg Mo
PA0218839	12/01/2022	12/31/2022	01/25/2023	001	01042	Copper, Total	mg/L	0.022	Avg Mo
PA0218839	01/01/2023	01/31/2023	02/28/2023	001	01042	Copper, Total	mg/L	0.0222	Avg Mo
PA0218839	02/01/2023	02/28/2023	03/20/2023	001	01042	Copper, Total	mg/L	0.0207	Avg Mo
PA0218839	03/01/2023	03/31/2023	04/25/2023	001	01042	Copper, Total	mg/L	0.0201	Avg Mo
PA0218839	04/01/2023	04/30/2023	05/23/2023	001	01042	Copper, Total	mg/L	0.0153	Avg Mo
PA0218839	05/01/2023	05/31/2023	06/27/2023	001	01042	Copper, Total	mg/L	0.0112	Avg Mo

PA0218839	06/01/2023	06/30/2023	07/25/2023	001	01042	Copper, Total	mg/L	0.0139	Avg Mo
PA0218839	07/01/2023	07/31/2023	08/18/2023	001	01042	Copper, Total	mg/L	0.0135	Avg Mo
PA0218839	08/01/2023	08/31/2023	09/26/2023	001	01042	Copper, Total	mg/L	0.004	Avg Mo
PA0218839	09/01/2023	09/30/2023	10/24/2023	001	01042	Copper, Total	mg/L	0.0137	Avg Mo
PA0218839	10/01/2023	10/31/2023	11/22/2023	001	01042	Copper, Total	mg/L	0.0158	Avg Mo
PA0218839	11/01/2023	11/30/2023	12/19/2023	001	01042	Copper, Total	mg/L	0.0167	Avg Mo
PA0218839	12/01/2023	12/31/2023	01/24/2024	001	01042	Copper, Total	mg/L	0.0001	Avg Mo
PA0218839	01/01/2024	01/31/2024	02/26/2024	001	01042	Copper, Total	mg/L	0.0182	Avg Mo
PA0218839	02/01/2024	02/29/2024	03/25/2024	001	01042	Copper, Total	mg/L	0.0197	Avg Mo
PA0218839	03/01/2024	03/31/2024	04/24/2024	001	01042	Copper, Total	mg/L	0.0199	Avg Mo
PA0218839	04/01/2024	04/30/2024	05/21/2024	001	01042	Copper, Total	mg/L	0.0216	Avg Mo
PA0218839	05/01/2024	05/31/2024	06/17/2024	001	01042	Copper, Total	mg/L	0.111	Avg Mo
PA0218839	06/01/2024	06/30/2024	07/22/2024	001	01042	Copper, Total	mg/L	0.0235	Avg Mo

90th Percentile	**0.05072**	**mg/L**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Cherry Tree STP** NPDES Permit No.: **PA0218839** Outfall No.: **001**

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

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
0.089	100	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	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	µg/L		50									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	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	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Cherry Tree STP, NPDES Permit No. PA0218839, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **West BranchSusquehanna River**

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	018668	227.28	1354	59.1			Yes
End of Reach 1	018668	227.2	1353	60.2			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	227.28	0.089										100	7		
End of Reach 1	227.2	0.089													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	227.28														
End of Reach 1	227.2														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Cherry Tree STP, NPDES Permit No. PA0218839, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.488 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	13.439	14.0	275	Chem Translator of 0.96 applied

☑ ***CFC*** CCT (min): 63.011 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	8.956	9.33	366	Chem Translator of 0.96 applied

☑ ***THH*** CCT (min): 63.011 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

☑ ***CRL*** CCT (min): 20.388 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

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

No. Samples/Month: 4

Mass Limits	*Concentration Limits*

Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	176	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

APPENDIX E

PREVIOUS CHESAPEAKE BAY DATA

Due Date	Parameter	Load Units	Load Value	Load Limit	Load SBC	Conc. Units	Conc. Value	Conc. Limit	Conc. SBC	Sample Frequency	Sample Type
10/28/2014	Total Nitrogen	lbs/year	2	Monitor and Report	Annual Average	mg/L	6.99	Monitor and Report	Annual Average	1/year	Calculation
11/28/2015	Total Nitrogen	lbs/year	18.82	Monitor and Report	Annual Average	mg/L	1.88	Monitor and Report	Annual Average	1/year	Calculation
11/28/2016	Total Nitrogen	lbs/year	284.6	Monitor and Report	Annual Average	mg/L	32.5	Monitor and Report	Annual Average	1/year	Calculation
11/28/2017	Total Nitrogen	lbs/year	406.1	Monitor and Report	Annual Average	mg/L	39.5	Monitor and Report	Annual Average	1/year	Calculation
AVG =		***lbs/year***	***177.88***				***20.22***				

Due Date	Parameter	Load Units	Load Value	Load Limit	Load SBC	Sample Frequency	Sample Type
10/28/2014	Total Nitrogen (Total Load, lbs)	lbs	855.28	Monitor and Report	Total Annual	1/year	Calculation
11/28/2015	Total Nitrogen (Total Load, lbs)	lbs	228.6	Monitor and Report	Total Annual	1/year	Calculation
11/28/2016	Total Nitrogen (Total Load, lbs)	lbs	3678.7	Monitor and Report	Total Annual	1/year	Calculation
11/28/2017	Total Nitrogen (Total Load, lbs)	lbs	4873.5	Monitor and Report	Total Annual	1/year	Calculation
AVG =		***lbs***	***2409.02***				

Due Date	Parameter	Load Units	Load Value	Load Limit	Load SBC	Conc. Units	Conc. Value	Conc. Limit	Conc. SBC	Sample Frequency	Sample Type
10/28/2014	Total Phosphorus	lbs/year	2	Monitor and Report	Annual Average	mg/L	6.93	Monitor and Report	Annual Average	1/year	8-Hr Composite
11/28/2015	Total Phosphorus	lbs/year	63.55	Monitor and Report	Annual Average	mg/L	6.35	Monitor and Report	Annual Average	1/year	8-Hr Composite
11/28/2016	Total Phosphorus	lbs/year	72.7	Monitor and Report	Annual Average	mg/L	8.3	Monitor and Report	Annual Average	1/year	8-Hr Composite
11/28/2017	Total Phosphorus	lbs/year	57.2	Monitor and Report	Annual Average	mg/L	5.56	Monitor and Report	Annual Average	1/year	8-Hr Composite
AVG =		***lbs/year***	***48.86***				***6.79***				

Due Date	Parameter	Load Units	Load Value	Load Limit	Load SBC	Sample Frequency	Sample Type
10/28/2014	Total Phosphorus (Total Load, lbs)	lbs	847.93	Monitor and Report	Total Annual	1/year	Calculation
11/28/2015	Total Phosphorus (Total Load, lbs)	lbs	772.1	Monitor and Report	Total Annual	1/year	Calculation
11/28/2016	Total Phosphorus (Total Load, lbs)	lbs	939.6	Monitor and Report	Total Annual	1/year	Calculation
11/28/2017	Total Phosphorus (Total Load, lbs)	lbs	686.1	Monitor and Report	Total Annual	1/year	Calculation
AVG =		***lbs***	***811.43***				

APPENDIX F

PREVIOUS TMDL DATA

Due Date	Parameter	Conc. Units	Q	Conc. Value	Conc. Limit	Conc. SBC	Sample Frequency	Sample Type
1/28/2014	Aluminum, Total	mg/L		0.014	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2015	Aluminum, Total	mg/L		0.016	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2016	Aluminum, Total	mg/L		0.012	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2017	Aluminum, Total	mg/L	<	0.01	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2018	Aluminum, Total	mg/L	<	0.1	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
AVG =		***mg/L***		***0.030***				
MAX =		***mg/L***		***0.100***				

Due Date	Parameter	Conc. Units	Q	Conc. Value	Conc. Limit	Conc. SBC	Sample Frequency	Sample Type
1/28/2014	Iron, Total	mg/L		0.068	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2015	Iron, Total	mg/L		0.106	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2016	Iron, Total	mg/L		0.06	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2017	Iron, Total	mg/L		0.034	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2018	Iron, Total	mg/L		0.0581	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
AVG =		***mg/L***		***0.07***				
MAX =		***mg/L***		***0.11***				

Due Date	Parameter	Conc. Units	Q	Conc. Value	Conc. Limit	Conc. SBC	Sample Frequency	Sample Type
1/28/2014	Manganese, Total	mg/L		0.037	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2015	Manganese, Total	mg/L		0.092	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2016	Manganese, Total	mg/L		0.009	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2017	Manganese, Total	mg/L		0.013	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
1/28/2018	Manganese, Total	mg/L	<	0.02	Monitor and Report	Daily Maximum	1/year	8-Hr Composite
AVG =		***mg/L***		***0.034***				
MAX =		***mg/L***		***0.092***				