Pennsylvania
Department of
Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0215945**
Facility Type	**Non-Municipal**	APS ID	**1136708**
Major / Minor	**Minor**	Authorization ID	**1526172**

Applicant and Facility Information

Applicant Name	**Trinity Area School District**	Facility Name	**Trinity South Elementary School**
Applicant Address	50 Scenic Drive	Facility Address	2500 S Main Street Ext
	Washington, PA 15301-9207		Washington, PA 15301-3269
Applicant Contact	Aaron Scott	Facility Contact	Eric Harris
Applicant Phone	(724) 225-5380	Facility Phone	724-966-2278
Client ID	26712	Site ID	254868
Ch 94 Load Status		Municipality	Amwell Township
Connection Status		County	Washington
Date Application Received	April 11, 2025	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES Renewal

Summary of Review

The permittee has applied for a renewal of NPDES Permit No. PA0215945 on April 7, 2025. NPDES Permit No. PA0215945 was previously issued by the PA Department of Environmental Protection (DEP) on September 1, 2017 and expired on August 31, 2022.

The applicant is currently enrolled in and will continue to use eDMR.

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

Draft Permit issuance is recommended.

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
X		Jordan T Coldsmith Jordan Coldsmith / Environmental Engineering Specialist	January 27, 2026
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	February 17, 2026

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.006
Latitude	40º 6' 31.00"	Longitude	-80º 12' 23.20"
Quad Name	Amity	Quad Code	40080A2
Wastewater Description:	Sewage Effluent		

Receiving Waters	Little Tenmile Creek (TSF)	Stream Code	40813
NHD Com ID	99410714	RMI	10.1
Drainage Area	2.95	Yield (cfs/mi^2)	0.01
Q_{7-10} Flow (cfs)	0.0316	Q_{7-10} Basis	USGS StreamStat
Elevation (ft)	1231.6	Slope (ft/ft)	
Watershed No.	19-B	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	AGRICULTURE		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake

PWS Waters	Monongahela River (WWF)	Flow at Intake (cfs)	TRI CNTY JT MUNI AUTH
PWS RMI		Distance from Outfall (mi)	25.74

Changes Since Last Permit Issuance: none

Other Comments: N/A

Treatment Facility Summary				
Treatment Facility Name: Trinity South Elementary WWTP				
WQM Permit No.	**Issuance Date**			
6393405	April 19, 1994			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Extended Aeration	Tertiary	Chlorination	0.006
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
		Not overloaded	N/A	N/A

Changes Since Last Permit Issuance: None

Other Comments: The current treatment process consists of: flow equalization, extended aeration, final clarification, and chlorination

Compliance History

Operations Compliance Check Summary Report

Facility: TRINITY SOUTH ELEM WWTP

NPDES Permit No.: PA0215945

Compliance Review Period: 2/1/21-2/10/26

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
02/09/2026	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
02/19/2025	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted
09/29/2021	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
02/19/2025	92A.75(A)	NPDES - Failure to submit NPDES renewal application at least 180 days prior to expiration or later approved date	02/09/2026

Open Violations by Client ID: No open violations for Client ID 26712

Enforcement Summary:

ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	ENF FINAL STATUS	ENF CLOSED DATE
NOV	Notice of Violation	02/19/2025	92A.75(A)	Administrative Close Out	2/10/2026

Effluent Violation Summary: No effluent exceedances reported during review period

Unauthorized Discharges: No unauthorized discharges reported in eDMR during review period

Compliance Status: Facility is in general compliance now that NPDES renewal application has been submitted.

Completed by: Amanda Illar **Completed date:** 2/10/26

Compliance History

DMR Data for Outfall 001 (from December 1, 2024 to November 30, 2025)

Parameter	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24
Flow (MGD) Average Monthly	0.00014	0.00028	0.00040			0.00006	0.00031	0.00005	0.00020	0.00022	0.00016	0.00015
pH (S.U.) Minimum	6.4	6.5	6.9			6.4	6.5	6.4	6.4	6.5	6.3	6.5
pH (S.U.) Maximum	7.0	7.1	7.3			6.9	7.4	7.1	6.9	7.1	7.0	7.2
DO (mg/L) Minimum	6.9	6.2	5.6			6.0	5.1	6.0	6.0	8.0	7.0	5.6
TRC (mg/L) Average Monthly	0.26	0.23	0.24			0.23	0.23	0.23	0.23	0.22	0.24	0.23
TRC (mg/L) Instantaneous Maximum	0.29	0.29	0.29			0.29	0.28	0.29	0.29	0.24	0.29	0.28
CBOD5 (mg/L) Average Monthly	2.0	2.9	3.5			2.9	5.1	2.1	4.8	4.2	2.8	2.6
CBOD5 (mg/L) Instantaneous Maximum	2.0	3.7	4.9			3.2	6.0	2.1	5.5	5.1	3.4	3.1
TSS (mg/L) Average Monthly	2.4	5.5	5.5			5.0	5.0	5.0	5.0	5.0	5.0	5.0
TSS (mg/L) Instantaneous Maximum	4.0	6.0	6.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	1	4	1			1	1	2	1	1	1	4
Fecal Coliform (No./100 ml) Instantaneous Maximum	2	16	1			1	1	2	1	1	1	8
Total Nitrogen (mg/L) Daily Maximum												3.8
Ammonia (mg/L) Average Monthly	2.4	0.2	0.3			0.3	0.3	0.6	1.1	0.8	0.9	0.3
Ammonia (mg/L) Instantaneous Maximum	4.0	0.2	0.3			0.3	0.3	0.9	1.5	1.1	1.6	0.4

Total Phosphorus (mg/L) Daily Maximum												3.1

Compliance History

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .006
Latitude 40º 6' 36.00" **Longitude** -80º 12' 22.00"
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

The discharge was evaluated using WQM7.0 to determine the $CBOD_5$, ammonia nitrogen, and dissolved oxygen parameters. The model results showed no change in CBOD5, slightly more relaxed limits for ammonia-nitrogen, and more restrictive limits for DO.

The previous limits for CBOD5 and Ammonia-Nitrogen will again be imposed. The new more restrictive limit for DO will be imposed. Per the submitted eDMR data, the facility will be able to meet this new limit, therefore, no compliance schedule will be given.

The TRC Spreadsheet was used to determine TRC parameters. The spreadsheet showed no change in TRC.

Parameter	Limit (mg/l)	SBC	Model
DO	4	Inst Min.	WQM 7
Ammonia-Nitrogen Nov 1 - Apr 30	24.0 48.0	Average Monthly IMAX	WQM 7
Ammonia-Nitrogen May 1 - Oct 31	8.15 16.3	Average Monthly IMAX	WQM 7
$CBOD_5$	25 50	Average Monthly IMAX	WQM 7
TRC	0.5 1.6	Average Monthly IMAX	TRC Calculation Spreadsheet

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second

situation addressed by Section 402(o) arises when a permittee saeeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

No permit limits and/or monitoring requirements have been relaxed in this permit cycle.

Additional Considerations

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Department's "Technical Guidance for the Development and Specification of Effluent Limitations".

Sewage discharges will include monitoring, at a minimum, for *E. Coli*, in new and reissued permits, with a monitoring frequency of 1/Year for facilities with design flows of 0.002-0.05 MGD.

An annual sampling frequency for total phosphorus and total nitrogen will again be imposed per 25 PA Code §92a.61.

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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.006	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min.	XXX	9.0	XXX	5/week	Grab
DO	XXX	XXX	4.0 Inst Min.	XXX	XXX	XXX	5/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	5/week	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	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
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	24.0	XXX	48.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	8.0	XXX	16.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

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

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

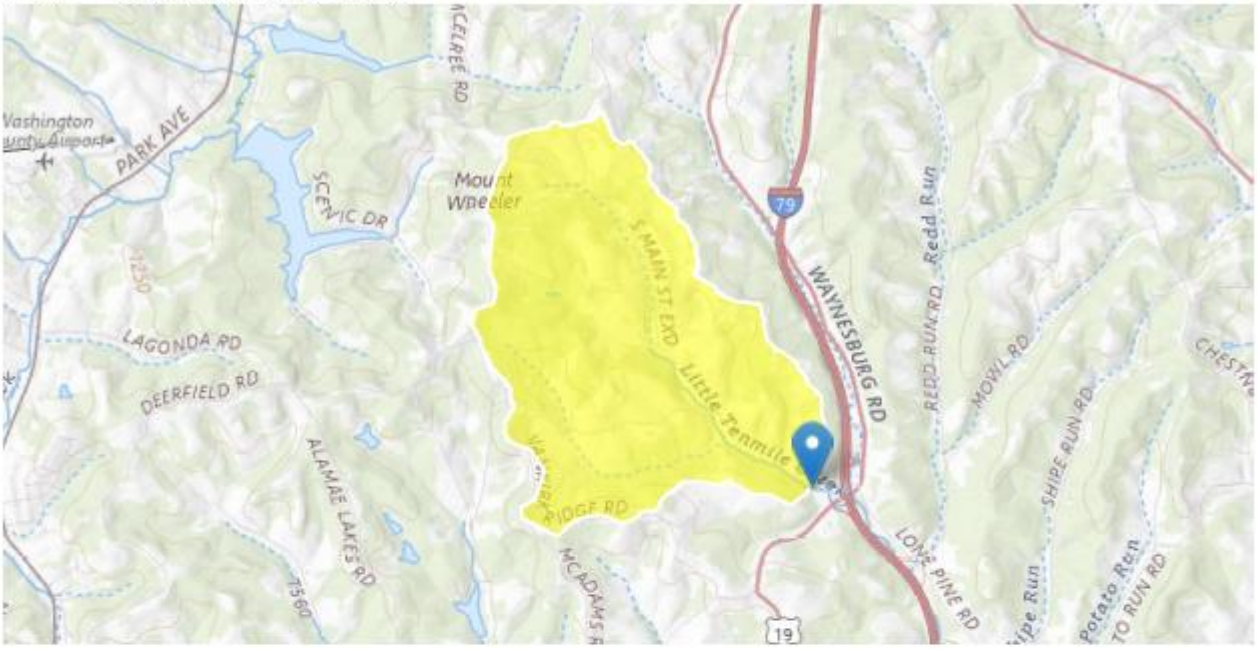
Compliance Sampling Location: Outfall 001

Other Comments: None

Attachment 1
USGS Discharge Point

StreamStats Report

Region ID: PA
Clicked Point (Latitude, Longitude): 40.10859, -80.20646
Time: 2026-02-03 15:46:34 -0500



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.95	square miles
ELEV	Mean Basin Elevation	1231.6	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.95	square miles	2.26	1400
ELEV	Mean Basin Elevation	1231.6	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.0984	ft^3/s	43	43
30 Day 2 Year Low Flow	0.181	ft^3/s	38	38
7 Day 10 Year Low Flow	0.0316	ft^3/s	66	66
30 Day 10 Year Low Flow	0.0626	ft^3/s	54	54
90 Day 10 Year Low Flow	0.122	ft^3/s	41	41

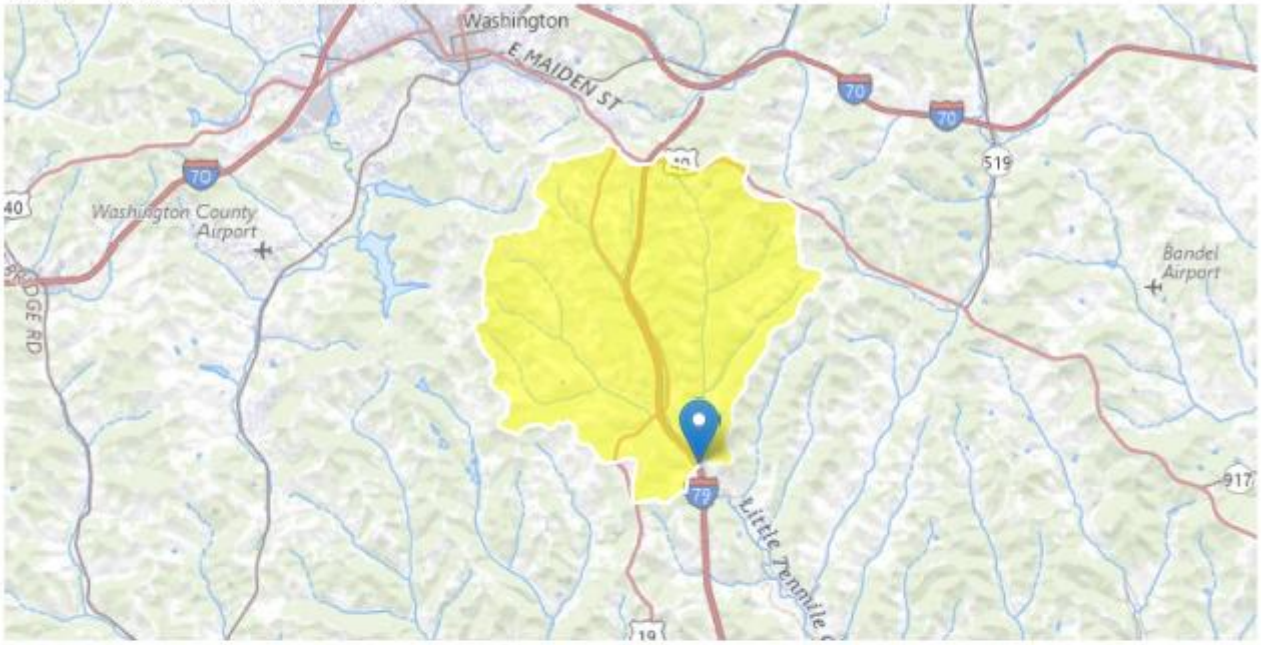
Low-Flow Statistics Citations

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

Attachment 2
USGS Downstream Point

StreamStats Report

Region ID: PA
Clicked Point (Latitude, Longitude): 40.09981, -80.19432
Time: 2026-02-04 15:24:23 -0500



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	10.4	square miles
ELEV	Mean Basin Elevation	1228.3	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	10.4	square miles	2.26	1400
ELEV	Mean Basin Elevation	1228.3	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.413	ft^3/s	43	43
30 Day 2 Year Low Flow	0.714	ft^3/s	38	38
7 Day 10 Year Low Flow	0.149	ft^3/s	66	66
30 Day 10 Year Low Flow	0.269	ft^3/s	54	54
90 Day 10 Year Low Flow	0.494	ft^3/s	41	41

Low-Flow Statistics Citations

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

Attachment 3
WQM 7.0 Summer Result

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
19B	40813	LITTLE TENMILE CREEK	**10.100**	1231.60	2.95	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	0.010	0.03	0.00	0.000	0.000	10.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Trinity South	PA0215945	0.0060	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19B	40813	LITTLE TENMILE CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
10.100	0.03	0.00	0.03	.0093	0.00062	.333	5.27	15.82	0.02	2.628	23.86	7.00
Q1-10 Flow												
10.100	0.02	0.00	0.02	.0093	0.00062	NA	NA	NA	0.02	3.154	23.43	7.00
Q30-10 Flow												
10.100	0.04	0.00	0.04	.0093	0.00062	NA	NA	NA	0.03	2.290	24.11	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	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	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
19B	40813	LITTLE TENMILE CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
10.100	Trinity South	12.62	40.1	12.62	40.1	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
10.100	Trinity South	1.45	8.15	1.45	8.15	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)		
10.10	Trinity South	25	25	8.15	8.15	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19B	40813	LITTLE TENMILE CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
10.100	0.006	23.865	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.274	0.333	15.823	0.023
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.22	0.409	1.85	0.942
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.280	14.608	Owens	6
Reach Travel Time (days)			
2.628			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.263	6.35	1.44	7.69
0.526	5.59	1.13	7.69
0.788	4.91	0.88	7.69
1.051	4.32	0.69	7.69
1.314	3.80	0.54	7.69
1.577	3.34	0.42	7.69
1.839	2.94	0.33	7.69
2.102	2.59	0.26	7.69
2.365	2.27	0.20	7.69
2.628	2.00	0.16	7.69

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19B	40813	LITTLE TENMILE CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
10.100	Trinity South	PA0215945	0.006	CBOD5	25		
				NH3-N	8.15	16.3	
				Dissolved Oxygen			4

Attachment 4
WQM 7.0 Winter Results

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
19B	40813	LITTLE TENMILE CREEK	**10.100**	1231.60	2.95	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	0.020	0.03	0.00	0.000	0.000	10.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Trinity South	PA0215945	0.0060	0.0000	0.0000	0.000	15.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19B	40813	LITTLE TENMILE CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
10.100	0.03	0.00	0.03	.0093	0.00062	.333	5.27	15.82	0.02	2.628	7.27	7.00
Q1-10 Flow												
10.100	0.02	0.00	0.02	.0093	0.00062	NA	NA	NA	0.02	3.154	8.15	7.00
Q30-10 Flow												
10.100	0.04	0.00	0.04	.0093	0.00062	NA	NA	NA	0.03	2.290	6.78	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	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	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
19B	40813	LITTLE TENMILE CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
10.100	Trinity South	24.1	50	24.1	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
10.100	Trinity South	4.36	24.56	4.36	24.56	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)		
10.10	Trinity South	25	25	24.56	24.56	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19B	40813	LITTLE TENMILE CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
10.100	0.006	7.270	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.274	0.333	15.823	0.023
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.22	0.819	5.58	0.263
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
10.578	9.856	Owens	6
Reach Travel Time (days)			
2.628			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.263	6.41	5.20	10.82
0.526	5.68	4.86	10.82
0.788	5.04	4.53	10.82
1.051	4.47	4.23	10.82
1.314	3.97	3.95	10.82
1.577	3.52	3.69	10.82
1.839	3.12	3.44	10.82
2.102	2.77	3.21	10.82
2.365	2.45	3.00	10.82
2.628	2.18	2.80	10.82

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19B	40813	LITTLE TENMILE CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
10.100	Trinity South	PA0215945	0.006	CBOD5	25		
				NH3-N	24.56	49.12	
				Dissolved Oxygen			4

Attachment 5
TRC Calculations

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0316	= Q stream (cfs)	0.5	= CV Daily
0.006	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.105	1.3.2.iii	WLA cfc = 1.070
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.412	5.1d	LTA_cfc = 0.622

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)