Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0239488**
Facility Type	**Municipal**	APS ID	**1111187**
Major / Minor	**Minor**	Authorization ID	**1480010**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Eldred Township**	Facility Name	**Eldred Township WWTP**
Applicant Address	2915 Newton Road	Facility Address	154 Wood Street
	Pittsfield, PA 16340-1537		Grand Valley, PA 16420
Applicant Contact	Diana Maille	Facility Contact	Jim Wencil
Applicant Phone	(814) 436-7654	Facility Phone	(814) 688-3899
Client ID	3058	Site ID	632841
Ch 94 Load Status	Not Overloaded	Municipality	Eldred Township
Connection Status	No Limitations	County	Warren
Date Application Received	March 22, 2024	EPA Waived?	Yes
Date Application Accepted	April 18, 2024	If No, Reason	

Purpose of Application: Renewal of Existing NPDES Permit

Summary of Review

Eldred Township has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of a NPDES permit for the Eldred Township STP. The permit was originally issued on November 21, 2019, with an effective date of December 1, 2019. The permit expired on November 30, 2024, but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted, and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Sludge use and disposal description and location(s): Hauled offsite by Fox & Sons Excavating

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		*Aaron Baar* Aaron Baar / Project Manager	May 17, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	May 19, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.04
Latitude	41º 43' 20.56"	Longitude	-79º 32' 36.73"
Quad Name	0509	Quad Code	Grand Valley
Wastewater Description:	Sewage Effluent		
Receiving Waters	Caldwell Creek (HQ-CWF)	Stream Code	54236
NHD Com ID	100469923	RMI	8.0
Drainage Area	8.13 mi^2	Yield (cfs/mi^2)	0.0536
Q_{7-10} Flow (cfs)	0.436	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1327.67 ft	Slope (ft/ft)	
Watershed No.	16-E	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	E. Coli		
Source(s) of Impairment	Rural residential and agricultural sources		
TMDL Status	Pending	Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Assumed, default value
Temperature (°C)	20	CWF, default value
Hardness (mg/L)	100	Assumed, default value
Other: Ammonia (mg/L)	0.1	Assumed, default value

Nearest Downstream Public Water Supply Intake		Aqua Pennsylvania, Inc. - Emlenton	
PWS Waters	Allegheny River	Flow at Intake (cfs)	1376
PWS RMI	90.0	Distance from Outfall (mi)	~75

Drainage Area

The discharge is to Caldwell Creek at RMI 8.0. A drainage area upstream of the discharge is determined to be 8.13 sq.mi. according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow

According to StreamStats, the watershed has a Q_{7-10} of 0.436 cfs and a Q_{30-10} of 0.604 cfs. This information was used to obtain a Low Flow Yield (LFY), and a chronic Q_{30-10}:Q_{7-10} ratio for the discharge point as follows (Guidance No. 391-2000-023).

Q_{7-10} = 0.436 cfs
Q_{30-10} = 0.604 cfs
Q_{30-10}:Q_{7-10} = 0.604 cfs / 0.436 cfs = 1.3853
LFY = 0.436 cfs/8.13 mi^2 = 0.0450 cfs/mi^2

For WQM modelling purposes, the default acute (Q_{1-10}) exposure stream value of 0.64 cfs was utilized in the absence of other information.

Caldwell Creek

25 Pa Code §93.9 classifies the receiving water, Caldwell Creek, with a Cold-Water Fishery (CWF) Existing Use designation. Effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The discharge is in a stream segment listed as not fully attaining uses.

Local Watershed Total Maximum Daily Loads (TMDLs)

According to PA's 2024 integrated water quality monitoring and assessment report, Caldwell Creek in the vicinity of the proposed point of discharge is currently assessed for aquatic life and recreation; the most recently assessment found aquatic life in the waterway to be supported but impaired for recreation due to E. Coli from nearby agricultural and rural residential sources. The waterway is listed as Category 2 in the 2024 integrated report for aquatic life, indicating that some but not all uses are met. The assessment status of the remaining uses may be unknown because data are insufficient to assess the water, or it may be impaired. The waterway is also listed as Category 5 in the 2024 integrated report for recreation, indicating that Caldwell Creek may be impaired for one or more uses by a pollutant that requires the development of a TMDL.

No TMDL has been developed for Caldwell Creek to date, so no local watershed TMDL has been taken into consideration during this review.

Public Water Supply Intake

The nearest downstream public water supply intake is the Aqua PA - Emlenton intake, locate on the Allegheny River approximately 75 miles from the point of discharge. Considering the nature of the discharge and distance, the discharge is not expected to impact the water supply.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream; therefore, no Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary

Treatment Facility Name: Eldred Township WWTP

WQM Permit No.	Issuance Date
6204404 A-1	March 23, 2006
6204404	September 2, 2004

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia and Phosphorus	Extended Aeration	Ultraviolet	0.04

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.04	66	Not Overloaded	Aerobic Digestion	Other WWTP

Eldred Township owns and operates the wastewater treatment facility located at 154 Wood Street (Eldred Township, Warren County); the facility only serves Eldred Township. With an annual average design flow and hydraulic design capacity of 0.04 MGD, the treatment process, as described in the application, is configured as follows:

EQ Tanks (2) → Aeration Tanks (4) → Secondary Clarification (2) → Sand Filter (1) → UV disinfection (1) → Outfall 001

The facility adds aluminum sulfate for coagulation of solids and sodium bicarbonate for pH control. Solids handling is facilitated by two digesters.

Compliance History	
Summary of DMRs:	DMR results for the past year are presented below.
Summary of Inspections:	Since the last renewal of the facility's NPDES permit, the following inspections have been logged: January 12, 2022: A routine CEI was conducted by Alan Poyer. No new violations were noted, but the following unresolved violations were listed: 1. 25 Pa. Code 92a.41(a)(5): Failure to maintain permitted treatment units in operable condition UV light does not appear operational. Twp has a technician scheduled to repair as needed. 2. 25 Pa. Code 92a.41(a)(5): Facility failed to properly operate and maintain alarm system. I am strongly recommending the alarm systems at the plant be repaired/replaced to alert operator of possible STP issues. 3. 25 Pa. Code 92a.61(c): Failure to monitor pollutants as required by the NPDES permit. Facility's design sends filter backwash supernatant back to the EQ Tank. 4. 25 Pa. Code 92a.61(f)(1): Failure to properly document monitoring activities and results. Operator will begin adding daily flow, pH, and DO to daily effluent forms starting with December 2021 EDMR submission. 5. P.L. 1987, No. 394, Sec 611: Failure to comply with the terms and conditions of a WQM permit Mr. Wencil is using Chlorine tablets as cleaner/ disinfectant . WQM Permit # 6204404 authorizes UV disinfection only. 6. P.L. 1987, No. 394, Sec 611: Failure to maintain facilities in working order in compliance with terms and conditions of a WQM permit Auto dialer ,visual alarm are permit required. The inspector observed white discs dispersed at various locations in the treatment plant. The facility's operator stated he has been adding a total of eight Chlorine cakes to the treatment at the sand filter weirs, Clarifier Weirs ,UV chamber, and flow meter chamber every two months to assist in keeping the plant cleaner. Water Quality Management Permit(WQM) # 6204404 does not approve use of Chlorine as disinfectant and that the facility should not rely on Chlorine tablets for plant maintenance. Recommendations were made for more frequent sludge wasting and a thorough cleaning of problems areas of the plant be conducted along with a routine maintenance plan being adopted to prevent future issues. Overflows were also noted as being suspected at the Route 27 PS.

Other Comments: As of May 4, 2025, there are no open violations associated with this facility.

Existing Effluent Limitations and Monitoring Requirements								
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 Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	7.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	6.6	10.0	XXX	20.0	30.0	40	2/month	24-Hr Composite
CBOD5 May 1 - Oct 31	3.3	5.0	XXX	10.0	15.0	20	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	3.3	5.0	XXX	10.0	15.0	20	2/month	24-Hr Composite
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
UV Intensity (µw/cm²)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Recorded
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	3.0	XXX	XXX	9.0	XXX	18	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	1.0	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite

Compliance Sampling Location: Outfall 001

Compliance History

DMR Data for Outfall 001 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Average Monthly	0.016	0.017	0.014	0.024	0.011	0.009	0.016	0.014	0.012	0.008	0.015	0.015
Flow (MGD) Daily Maximum	0.018	0.027	0.015	0.04	0.023	0.015	0.021	0.028	0.016	0.012	0.023	0.023
pH (S.U.) Instantaneous Minimum	7.94	7.88	7.67	7.69	6.35	8.24	7.48	7.95	7.58	7.66	7.65	7.33
pH (S.U.) Instantaneous Maximum	7.95	7.94	7.88	7.84	7.95	8.42	7.99	8.01	7.72	7.96	7.95	7.76
DO (mg/L) Instantaneous Minimum	10.12	11.05	9.65	8.01	8.1	8.06	9.42	7.62	8.68	8.65	9.3	10.2
CBOD5 (lbs/day) Average Monthly	0.7	0.4	< 0.3	0.6	< 0.3	< 0.2	< 0.3	< 0.4	< 0.3	< 0.1	0.4	0.4
CBOD5 (lbs/day) Weekly Average	0.7	0.5	0.3	0.9	0.4	0.4	< 0.4	< 0.5	< 0.3	0.2	0.6	0.5
CBOD5 (mg/L) Average Monthly	5.0	4.0	< 2.0	3.0	< 4.0	< 3.0	< 2.0	< 2.0	< 2.0	< 2.0	3.00	3.0
CBOD5 (mg/L) Weekly Average	5.0	5.0	3.0	3.0	5.0	3.0	< 2.0	< 2.0	< 2.0	< 2.0	3.00	4.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	146.0	167.0	133.0	123.8	196.0	123.0	101.3	182.0	152.6	163.0	203	197
TSS (lbs/day) Average Monthly	1.6	0.7	0.7	1.4	0.5	< 0.2	< 0.7	< 0.5	< 0.4	0.4	0.9	0.4
TSS (lbs/day) Weekly Average	1.8	0.9	0.7	2.3	0.8	< 0.3	1.2	< 0.6	0.5	0.8	1.4	0.6
TSS (mg/L) Average Monthly	11.0	7.0	6.0	6.0	7.0	< 3.0	< 5.0	< 3.0	< 3.0	7.0	6.0	3.0
TSS (mg/L) Raw Sewage Influent Average Monthly	92.0	46.0	74.0	44.0	94.0	66.0	72.0	72.0	106	92.0	86	66.0
TSS (mg/L) Weekly Average	12.0	8.0	7.0	7.0	10.0	4.0	7.0	4.0	4.0	9.0	8.0	3.0

Fecal Coliform (No./100 ml) Geometric Mean	< 61	> 2362	6.0	70.0	< 1.0	< 1.0	< 1.0	2.0	< 1.0	< 1.0	< 1.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	369	> 2419.6	17.1	72.8	< 1.0	< 1.0	< 1.0	3.1	< 1.0	< 1.0	2.0	< 1.0
UV Intensity (µw/cm²) Average Monthly	1.1	1.1	1.2	1.2	1.5	1.7	1.8	1.8	1.9	2.1	1.9	1.6
Total Nitrogen (mg/L) Average Monthly	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia (lbs/day) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.1	< 0.008	< 0.01	< 0.01	< 0.02	< 0.01	< 0.005	< 0.1	< 0.02
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.03	< 0.1	< 0.1259	< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	< 0.1
Total Phosphorus (mg/L) Average Monthly	0.6	0.38	0.293	0.26	0.71	0.6	0.88	1.27	1.24	0.7	0.455	0.415

Compliance History

Effluent Violations for Outfall 001, from: May 1, 2024 To: March 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	03/31/25	Avg Mo	11.0	mg/L	10.0	mg/L
Fecal Coliform	02/28/25	Geo Mean	> 2362	No./100 ml	2000	No./100 ml
Fecal Coliform	02/28/25	IMAX	> 2419.6	No./100 ml	10000	No./100 ml

Summary of Inspections: The February 2025 Non-Compliance Forms states that the Fecal violations are due to the facility, “Waiting on U.V. bulbs and sleaves from Trojan Company and will be replacing them as soon as they arrive. Samples for the next month are within normal limits also.” The March 2025 Non-Compliance Forms states that the TSS violation is due to, “temperatures fluctuating solids kept staying toward top of clarifier. In hindsight should have wasted more solids to digester and solids wouldn't have bulked as bad.” NWRO Operations will determine if further action is needed or not.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .04
Latitude 41º 43' 20.50" **Longitude** -79º 32' 37.50"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Comments: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. The model was utilized using data derived by USGS StreamStats and the model output indicated that existing WQBELs for DO, ammonia and CBOD5 are still protective of water quality

See attached for model inputs and outputs.

Toxics

DEP's NPDES permit application for minor sewages (less than 0.1 MGD) does not require sampling for heavy metals including Total Copper, Total Lead, and Total Zinc.

E. Coli Monitoring

In conformity with the Department's *Establishing Effluent Limitations for Individual Sewage Permits* (SOP No. BCW-PMT-033) and as authorized by § 92a.61 of the PA Code, annual E. Coli monitoring has been proposed in this permit. The collection method will be via grab sample.

Best Professional Judgment (BPJ) Limitations

Ultraviolet Disinfection

The existing UV system is equipped with an intensity sensor; therefore, UV intensity is proposed to be continued as the monitoring parameter for the UV system.

Total Phosphorus & Total Nitrogen

DEP's SOP no. BPNPSM-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends monitoring requirements for Total Phosphorus and Total Nitrogen for all sewage facilities. Therefore, routine monitoring for Total Phosphorus and Total Nitrogen are recommended to be continued in this permit. Sampling frequency for TP and TN is currently required 2/month, which is consistent with Table 6.3 in Guidance Doc. 362-0400-001. No change to the sampling frequency is proposed.

Requirements to begin the reporting of the mass discharge of TN was added to this permit for data collection purposes. This is a calculation only; no additional sampling is being required.

A new mass limit of 0.6 lbs TP/day on an average monthly basis is proposed for Total Phosphorus (TP). The limit was determined as follows using the facility's existing 2 mg/L TP limit.

(2 mg TP/L) x 8.34 x 0.4 mgd = 0.6 lbs TP/day

The new TP limit is called for in the Department's SOP No. BCW-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits, Section V, Part B) which states, "For POTWs, mass loading limits will be established for CBOD5, TSS, NH3-N, and where necessary Total P and Total N." As with TN, the new limit will be determined by calculation only; no additional sampling is being required.

Additional Considerations

Flow Monitoring

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

Monitoring Frequency and Sample Type

Unless discussed otherwise above, the permit's monitoring frequency and sample type for all parameters will remain unchanged from the last permit renewal.

Antidegradation Requirements

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

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal unless noted otherwise above. This approach is in accordance with 40 CFR §122.44(l(1).

Annual Fees

An annual fee clause is continued in the permit in accordance with 25 Pa. Code § 92a.62. The facility covered by the permit is classified in the Minor Sewage Facility <0.05 MGD fee category, which has an annual fee of $500.

Mass Loading Limitations

Unless stated otherwise in this fact sheet, mass loading effluent limits are calculated based on the formula: design flow (average annual) (MGD) x concentration limit (mg/L) at design flow x conversion factor (8.34).

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)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	7.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	6.6	10.0	XXX	20.0	30.0	40	2/month	24-Hr Composite
CBOD5 May 1 - Oct 31	3.3	5.0	XXX	10.0	15.0	20	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	3.3	5.0	XXX	10.0	15.0	20	2/month	24-Hr Composite
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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Intensity (µw/cm²)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Recorded
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	3.0	XXX	XXX	9.0	XXX	18	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	1.0	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite

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		
Total Phosphorus	0.6	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite

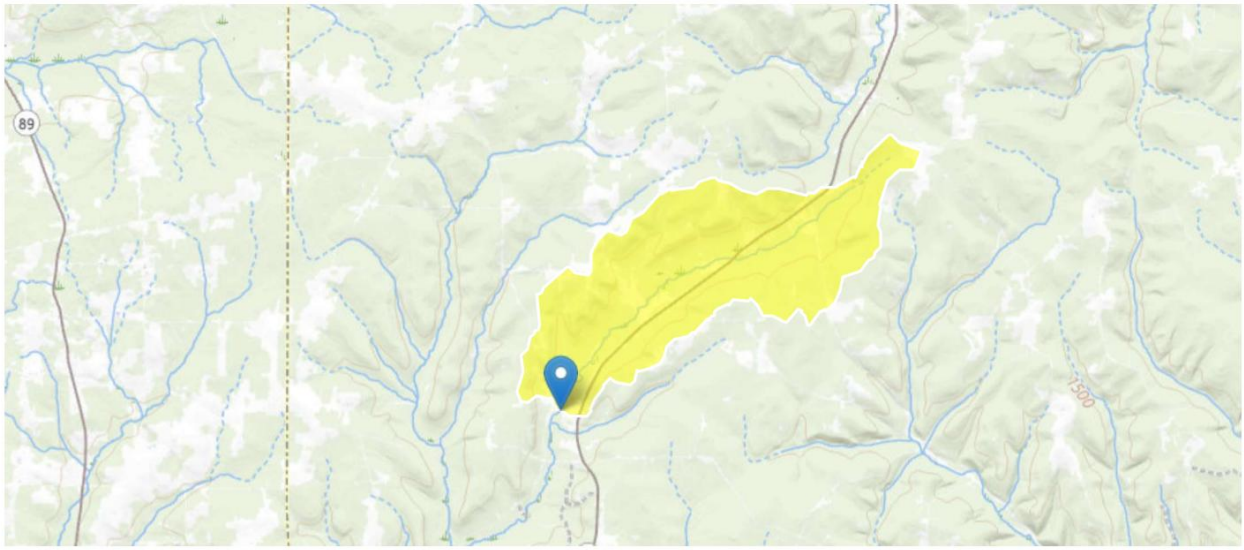
Compliance Sampling Location: Outfall 001

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 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:


Wood St
Eldred Cent
Good Will St
Wood St
Grand Valley
United Methodist
Good Will St
Wood St
27
Wood St
GRAND VALLEY
VOLUNTEER FIRE...

StreamStats Report

Region ID: PA
Workspace ID: PA20250504111700707000
Clicked Point (Latitude, Longitude): 41.71989, -79.54378
Time: 2025-05-04 07:17:28 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	8.13	square miles
ELEV	Mean Basin Elevation	1541	feet
PRECIP	Mean Annual Precipitation	45	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	8.13	square miles	2.33	1720
ELEV	Mean Basin Elevation	1541	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

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	0.941	ft^3/s	43	43
30 Day 2 Year Low Flow	1.37	ft^3/s	38	38
7 Day 10 Year Low Flow	0.436	ft^3/s	54	54
30 Day 10 Year Low Flow	0.604	ft^3/s	49	49
90 Day 10 Year Low Flow	0.881	ft^3/s	41	41

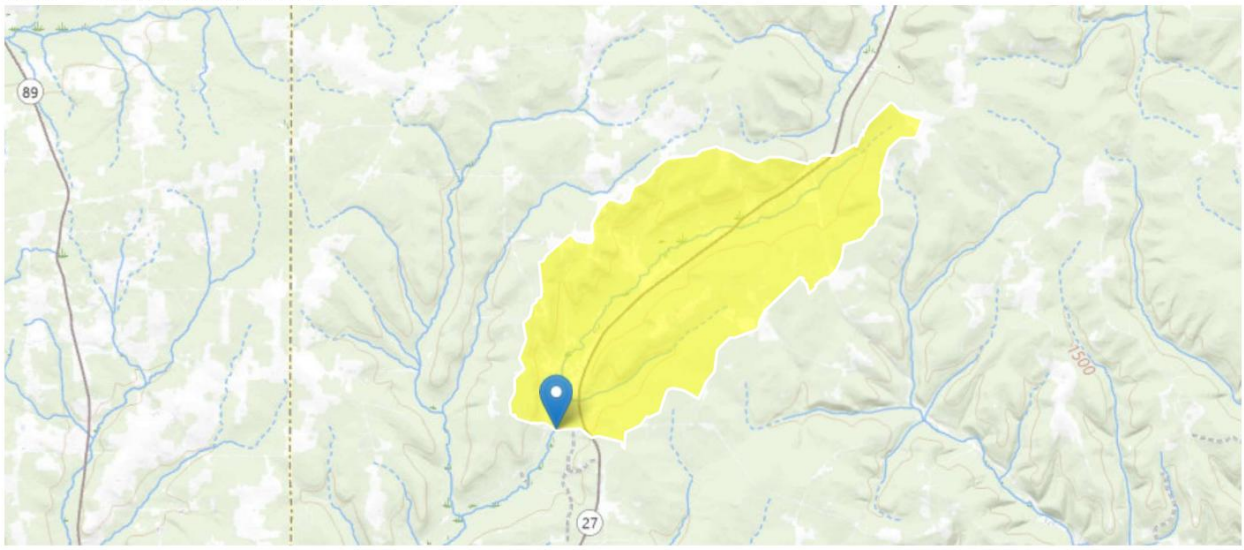
Low-Flow Statistics Citations

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/)

Application Version: 4.28.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20250504113125730000
Clicked Point (Latitude, Longitude): 41.71013, -79.54539
Time: 2025-05-04 07:31:49 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	11.2	square miles
ELEV	Mean Basin Elevation	1549	feet
PRECIP	Mean Annual Precipitation	45	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	11.2	square miles	2.33	1720
ELEV	Mean Basin Elevation	1549	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

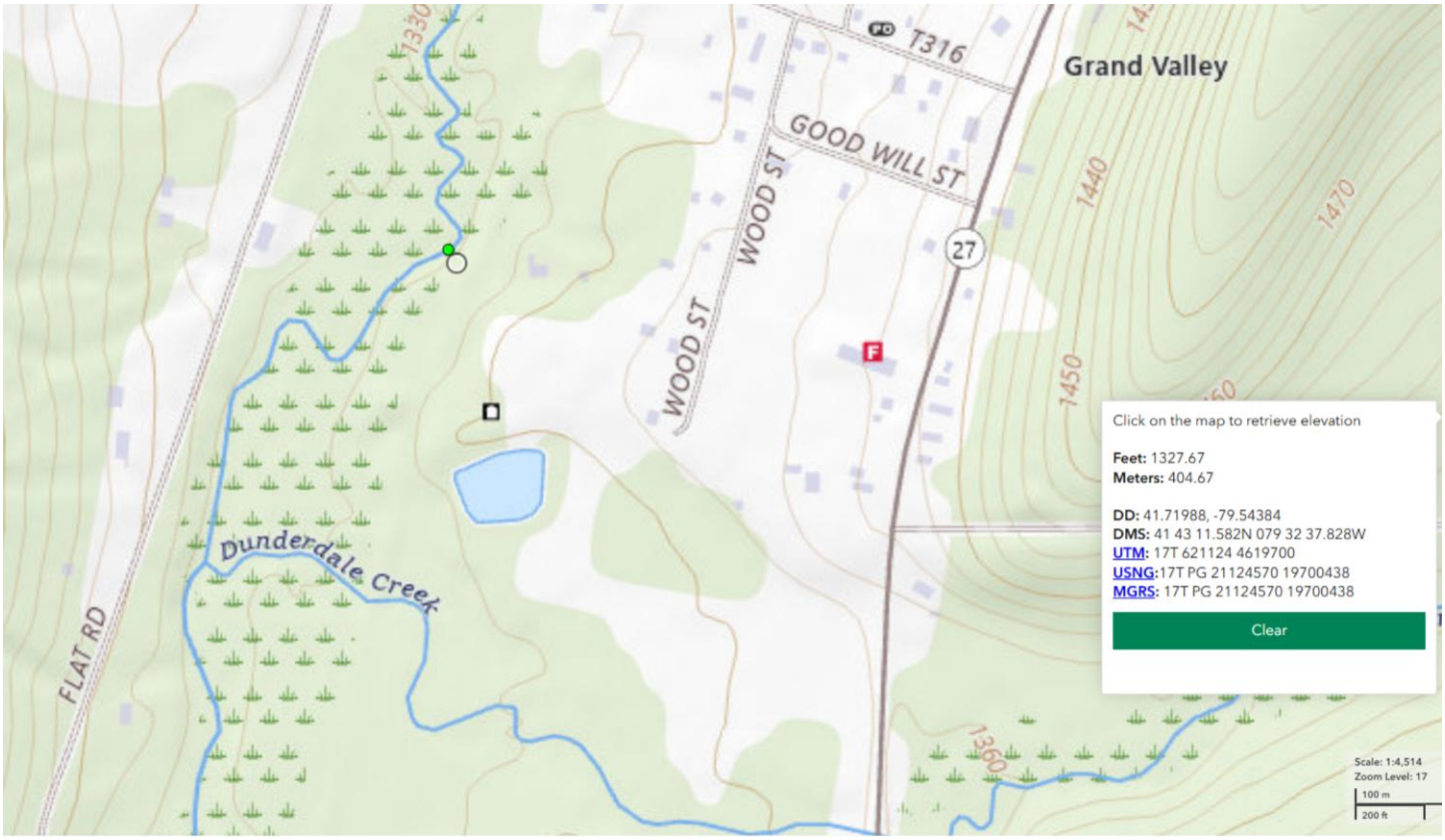
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

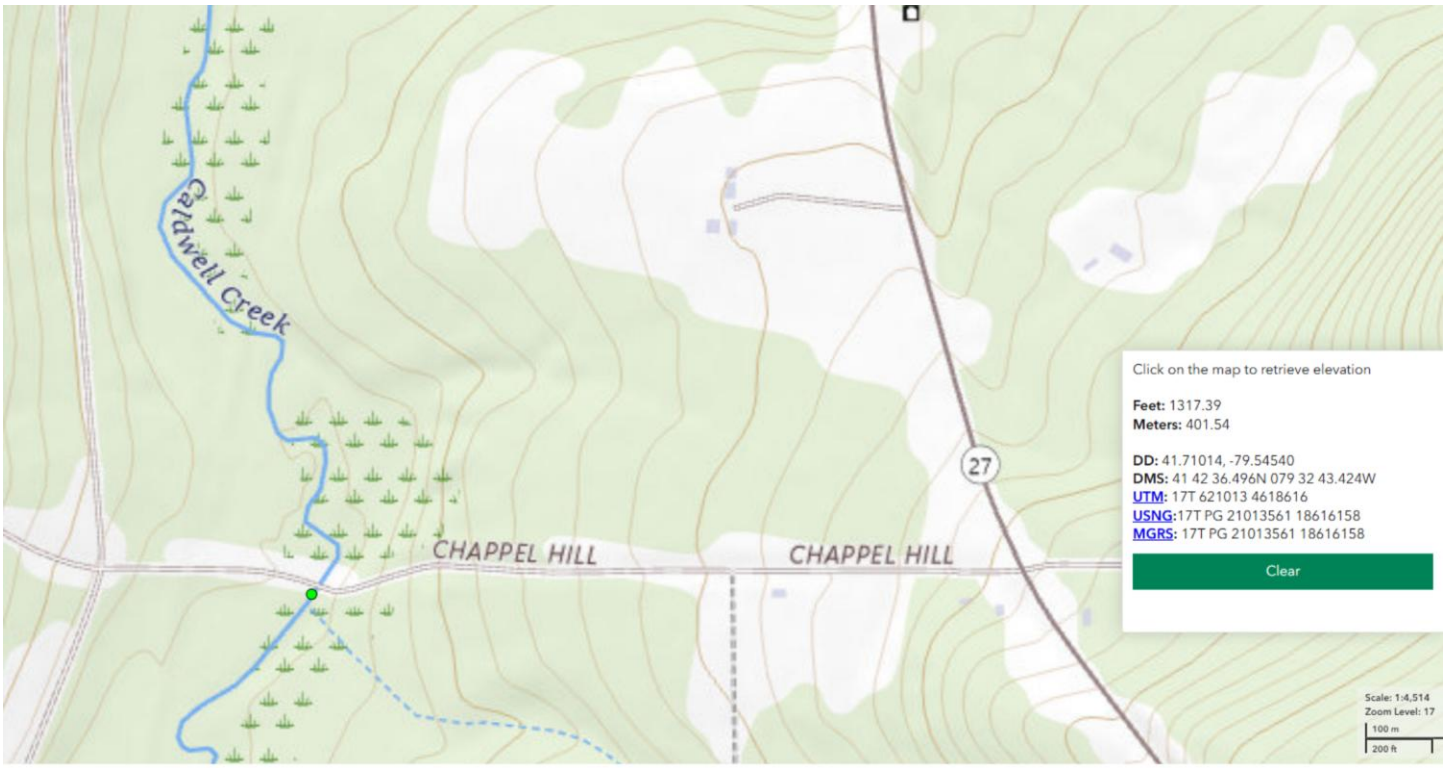
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.31	ft^3/s	43	43
30 Day 2 Year Low Flow	1.89	ft^3/s	38	38
7 Day 10 Year Low Flow	0.618	ft^3/s	54	54
30 Day 10 Year Low Flow	0.849	ft^3/s	49	49
90 Day 10 Year Low Flow	1.23	ft^3/s	41	41

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/)

Application Version: 4.28.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1


T316
Grand Valley
GOOD WILL ST
WOOD ST
WOOD ST
27
1330
1440
1470
1450
1360
Dunderdale Creek
FLAT RD
Click on the map to retrieve elevation
Feet: 1327.67
Meters: 404.67
DD: 41.71988, -79.54384
DMS: 41 43 11.582N 079 32 37.828W
UTM: 17T 621124 4619700
USNG:17T PG 21124570 19700438
MGRS: 17T PG 21124570 19700438
Clear
Scale: 1:4,514
Zoom Level: 17
100 m
200 ft


Caldwell Creek
CHAPPEL HILL
CHAPPEL HILL
27
Click on the map to retrieve elevation
Feet: 1317.39
Meters: 401.54
DD: 41.71014, -79.54540
DMS: 41 42 36.496N 079 32 43.424W
UTM: 17T 621013 4618616
USNG:17T PG 21013561 18616158
MGRS: 17T PG 21013561 18616158
Clear
Scale: 1:4,514
Zoom Level: 17
100 m
200 ft

	Mar-25	Feb-25	Jan-25	Dec-24	Nov-24	Oct-24	Sep-24	Aug-24	Jul-24	Jun-24	May-24	Apr-24
Min pH:	7.94	7.88	7.67	7.69	6.35	8.24	7.48	7.95	7.58	7.66	7.65	7.33
10^ -pH	1.14815E-08	1.318E-08	2.138E-08	2.042E-08	4.467E-07	5.754E-09	3.311E-08	1.122E-08	2.63E-08	2.188E-08	2.239E-08	4.677E-08
Max pH:	7.95	7.94	7.88	7.84	7.95	8.42	7.99	8.01	7.72	7.96	7.95	7.76
10^ -pH	1.12202E-08	1.148E-08	1.318E-08	1.445E-08	1.122E-08	3.802E-09	1.023E-08	9.772E-09	1.905E-08	1.096E-08	1.122E-08	1.738E-08
AVG:	1.13509E-08	1.233E-08	1.728E-08	1.744E-08	2.29E-07	4.778E-09	2.167E-08	1.05E-08	2.268E-08	1.642E-08	1.68E-08	3.208E-08
AVG pH:	7.9	7.9	7.8	7.8	6.6	8.3	7.7	8.0	7.6	7.8	7.8	7.5
Mean pH:	7.8											

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16E	54236	CALDWELL 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)
8.000	Eldred Twp STP	PA0239488	0.040	CBOD5	10		
				NH3-N	3	6	
				Dissolved Oxygen			7

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16E	54236	CALDWELL 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
8.000	Eldred Twp STP	14.55	6	14.55	6	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
8.000	Eldred Twp STP	1.81	3	1.81	3	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)		
8.00	Eldred Twp STP	10	10	3	3	7	7	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16E	54236	CALDWELL CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
8.000	0.040	20.621	7.048
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
12.553	0.473	26.544	0.084
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.99	0.460	0.46	0.734
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.089	16.724	Owens	6
Reach Travel Time (days)			
0.634			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.063	2.91	0.44	8.15
0.127	2.82	0.42	8.15
0.190	2.74	0.40	8.15
0.254	2.66	0.38	8.15
0.317	2.58	0.36	8.15
0.380	2.50	0.35	8.15
0.444	2.43	0.33	8.15
0.507	2.36	0.32	8.15
0.571	2.29	0.30	8.15
0.634	2.22	0.29	8.15

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	1.3853	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
16E	54236	CALDWELL 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												
8.000	0.44	0.00	0.44	.0619	0.00224	.473	12.55	26.54	0.08	0.634	20.62	7.05
Q1-10 Flow												
8.000	0.28	0.00	0.28	.0619	0.00224	NA	NA	NA	0.07	0.784	20.91	7.07
Q30-10 Flow												
8.000	0.60	0.00	0.60	.0619	0.00224	NA	NA	NA	0.10	0.539	20.46	7.04

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
16E	54236	CALDWELL CREEK	**8.000**	1327.67	8.13	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	0.000	0.44	0.00	0.000	0.000	0.0	0.00	0.00	20.00	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
Eldred Twp STP	PA0239488	0.0400	0.0400	0.0400	0.000	25.00	7.80

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	10.00	2.00	0.00	1.50
Dissolved Oxygen	7.00	8.24	0.00	0.00
NH3-N	3.00	0.10	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
16E	54236	CALDWELL CREEK	**7.130**	1317.39	11.20	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	0.000	0.62	0.00	0.000	0.000	0.0	0.00	0.00	20.00	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