

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0239488
APS ID 516185
Authorization ID 1252770

Applicant and Facility Information

Applicant Name	<u>Eldred Township</u>	Facility Name	<u>Eldred Township WWTP</u>
Applicant Address	<u>2915 Newton Road</u> <u>Pittsfield, PA 16340</u>	Facility Address	<u>154 Wood Street</u> <u>Grand Valley, PA 16420</u>
Applicant Contact	<u>James Wencil Township Supervisor</u>	Facility Contact	<u>Chuck Ishaman, WWTP Operator</u>
Applicant Phone	<u>(814) 688-3899</u>	Facility Phone	<u></u>
Client ID	<u>3058</u>	Site ID	<u>632841</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Eldred Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Warren County</u>
Date Application Received	<u>October 1, 2018</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>November 20, 2018</u>	If No, Reason	<u>-</u>
Purpose of Application	<u>Renewal of an existing NPDES Permit for an existing discharge of treated sanitary wastewater from a municipal sewer system.</u>		

Summary of Review

Act 14 - Proof of Notification was submitted and received.
A Part II Water Quality Management permit is not required at this time.
The applicant should be able to continue to meet the limits of this permit, which will continue to protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

- A. Stormwater into sewers
- B. Right of way
- C. Solids handling
- E. No O&G Extraction Wastewater

SPECIAL CONDITIONS:

- II. Solids Management

There are no open violations in effects associated with the subject Client ID (3058) as of 9/17/2019.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	
X		Justin C. Dickey, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.04
Latitude	41° 43' 20.50"	Longitude	-79° 32' 37.50"
Quad Name	-	Quad Code	-
Wastewater Description: Sewage Effluent			
Receiving Waters	Caldwell Creek (HQ-CWF)	Stream Code	54236
NHD Com ID	100469923	RMI	8.0
Drainage Area	8.16	Yield (cfs/mi ²)	0.1 (default)
Q ₇₋₁₀ Flow (cfs)	0.81	Q ₇₋₁₀ Basis	calculated
Elevation (ft)	1340	Slope (ft/ft)	0.00420
Watershed No.	16-E	Chapter 93 Class.	HQ-CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-
Background/Ambient Data		Data Source	
pH (SU)	-		-
Temperature (°F)	-		-
Hardness (mg/L)	-		-
Other:	-		-
Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania, Inc. - Emlenton		
PWS Waters	Allegheny River	Flow at Intake (cfs)	1,376
PWS RMI	90.0	Distance from Outfall (mi)	75.0

Public Participation:

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

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.04 MGD of treated sewage from an existing Publicly Owned Treatment Works (POTW) in Eldred Township, Warren County.

Permitted treatment (WQM Permit no. 6204404) consists of: A bar screen and comminutor, a 13,845 gallon aerated flow equalization tank, six aeration basins in two parallel trains of 3 each with a combined volume of 41,536, chemical addition of ferric chloride for phosphorus control, two clarifiers with a combined volume of 9,366 gallons, two 8 square foot tertiary filters, ultraviolet (UV) light disinfection, post-aeration, two aerated

sludge holding tanks with a combined volume of 13,845 gallons, and two 560 square foot reed sludge drying beds.

Facility Area: See the topographical map (Attachment 1)

1. Streamflow: Caldwell Creek @ Outfall 001:

Drainage Area: 8.16 sq. mi. (USGS StreamStats)
Yieldrate: 0.1 cfsm (default)
% of stream allocated: 100% Basis: No nearby discharges
Q₇₋₁₀: 0.81 cfs

2. Wasteflow: Outfall 001

Maximum discharge: 0.04 MGD = 0.06 cfs

Runoff flow period: 24 hours Basis: Runoff flow for a Municipal STP

In accordance with the SOP, since there is greater than 3 parts stream flow (Q₇₋₁₀) to 1 part effluent (design flow), the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, were not evaluated. Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, Phosphorus, NH₃-N, CBOD₅, Dissolved Oxygen, and Total Residual Chlorine. NH₃-N, CBOD₅, and Dissolved Oxygen were evaluated using WQM 7.0 at the discharge point.

NO₂-NO₃, Fluoride, Phenolics, Sulfates, and Chlorides can be evaluated using PentoxSD at the nearest downstream potable water supply (PWS). Since there is significant dilution available, no modeling was performed for this facility.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

b. Total Suspended Solids

Limits are 10.0 mg/l as a monthly average and 20.0 as an instantaneous maximum.

Basis: The previous limits will be retained, which are technology-based on the Water Quality Antidegradation Implementation Guidance.

c. Fecal Coliform

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

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

Basis: Application of Chapter 92a47 technology-based limits

d. Phosphorus

- Limit necessary due to:
- Discharge to lake, pond, or impoundment
 - Discharge to stream

Basis: The previous Phosphorus limit of 2.0 mg/l will be retained based on Chapter 96.5 due to the receiving stream being designated for High Quality-Cold Water Fishes.

- Limit not necessary

Basis: N/A

e. Total Nitrogen

- Limit not necessary

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

- Limit necessary due to:

- Discharge to a lake, pond, or impoundment
- Discharge to a stream
- Discharge to a dry stream

Basis: N/A

f. NO₂-NO₃, Fluoride, Phenolics, Sulfates, and Chlorides

Nearest Downstream potable water supply (PWS): Aqua Pennsylvania, Inc. - Emlenton

Distance downstream from the point of discharge: 75.0 miles (approximate)

- No limits necessary
 Limits needed

Basis: Significant dilution available.

g. Ammonia-Nitrogen (NH₃-N)

Median discharge pH to be used: 7.3 Standard Units (S.U.)

Basis: Average pH value from DMR summary

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

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

Basis: default value used in the absence of data

Stream Temperature: 20°C (default value used for HQ-CWF modeling)

Background NH₃-N concentration: 0.1 mg/l

Basis: Default value.

Calculated NH₃-N Summer limits: 25.0 mg/l (monthly average)

50.0 mg/l (instantaneous maximum)

Calculated NH₃-N Winter limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling (see Attachment 2) resulted in the summer limits above. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. However, the previous limits (see below) will be retained as they are more restrictive. The previous limits are technology-based on the Water Quality Antidegradation Implementation Guidance.

Draft NH₃-N Summer limits: 3.0 mg/l (monthly average)
6.0 mg/l (instantaneous maximum)

Draft NH₃-N Winter limits: 9.0 mg/l (monthly average)
18.0 mg/l (instantaneous maximum)

h. CBOD₅

Median discharge pH to be used: 7.3 Standard Units (S.U.)

Basis: Average pH value from DMR summary

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

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

Basis: default value used in the absence of data

Stream Temperature: 20°C (default value used for HQ-CWF modeling)

Background CBOD₅ concentration: 2.0 mg/l

Basis: Default value

Calculated CBOD₅ Summer limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Calculated CBOD₅ Winter limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling (see Attachment 2) resulted in the summer limits above. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. However, the previous limits (see below) will be retained as they are more restrictive. The previous limits are technology-based on the Water Quality Antidegradation Implementation Guidance.

Draft CBOD₅ Summer limits: 10.0 mg/l (monthly average)
20.0 mg/l (instantaneous maximum)

Draft CBOD₅ Winter limits: 20.0 mg/l (monthly average)
40.0 mg/l (instantaneous maximum)

i. Dissolved Oxygen (DO)

Discussion: The Dissolved Oxygen technology-based minimum of 7.0 mg/l will be retained since the it is being attained.

j. Total Residual Chlorine (TRC)

No limit necessary

Compliance History

DMR Data for Outfall 001 (from August 1, 2018 to July 31, 2019)

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.014	0.015	0.009	0.013	0.014	0.012	0.018	0.015	0.019	0.018	0.017	0.013
Flow (MGD) Daily Maximum	0.017	0.017	0.009	0.015	0.02	0.012	0.02	0.017	0.025	0.023	0.017	0.017
pH (S.U.) Minimum	7.61	8.0	7.31	7.2	7.0	7.10	7.34	7.1	6.8	7.1	7.1	7.0
pH (S.U.) Maximum	8.25	8.24	8.01	7.23	7.3	7.24	7.44	7.54	7.1	7.6	7.45	7.2
DO (mg/L) Minimum	7.0	9.0	9.4	10.39	12.6	10.05	13.24	9.7	8.46	7.48	7.34	7.62
CBOD5 (lbs/day) Average Monthly	< 0.3	< 0.4	< 0.2	< 0.3	< 0.4	< 0.3	< 0.5	< 0.4	< 0.5	< 0.4	< 0.4	< 0.3
CBOD5 (lbs/day) Weekly Average	< 0.4	< 0.4	< 0.2	< 0.4	< 0.5	< 0.3	< 0.5	< 0.4	< 0.6	< 0.6	< 0.4	< 0.4
CBOD5 (mg/L) Average Monthly	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3.0	< 3	< 3	< 3	< 3
CBOD5 (mg/L) Weekly Average	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3.0	< 3	< 3	< 3	< 3
BOD5 (mg/L) Raw Sewage Influent Average Monthly	221	157	126	184	184	139.1	320	258	159	237	190	265
TSS (lbs/day) Average Monthly	0.3	0.4	0.8	0.3	0.5	0.4	0.4	0.6	0.5	0.4	0.5	0.4
TSS (lbs/day) Weekly Average	0.4	0.6	0.9	0.4	0.7	0.5	0.6	0.6	0.8	0.4	0.6	0.6
TSS (mg/L) Average Monthly	3	3	11	4	5	4	3	5.0	3	3	3	3
TSS (mg/L) Raw Sewage Influent Average Monthly	102	100	64	132	147	150	256	106	97	343	178	137
TSS (mg/L) Weekly Average	3	4	13	4	5	5	3	5.0	4	4	4	4
Fecal Coliform (CFU/100 ml) Geometric Mean	< 20	< 20	< 45	< 32	< 50	< 101	< 23	< 4.0	< 4	< 45	< 100	< 176
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 20	< 20	100	< 50	< 50	205	52	< 20	< 20	< 100	< 100	310

Total Nitrogen (mg/L) Average Monthly	1.88	2.33	2.12	< 1	< 1	< 1	< 1.87	< 21.36	< 22.56	< 32.38	< 46.9	< 41.61
Ammonia (lbs/day) Average Monthly	0.1	< 0.04	< 0.007	< 0.01	< 0.03	< 0.01	< 0.2	< 0.2	< 0.02	< 0.01	< 0.02	< 0.01
Ammonia (mg/L) Average Monthly	0.871	< 0.387	< 0.1	< 0.1	< 0.3	< 0.1	< 1.047	< 1.576	< 0.1	< 0.1	< 0.159	< 0.1
Total Phosphorus (mg/L) Average Monthly	0.929	0.737	0.938	0.441	0.314	0.31	0.27	0.31	1.883	0.272	2.89	4.51

Proposed Effluent Limitations and Monitoring Requirements

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

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

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	3.3	5.0	XXX	10.0	15.0	20	2/month	24-Hr Composite
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	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-Nitrogen Nov 1 - Apr 30	3.0	XXX	XXX	9.0	XXX	18	2/month	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	1.0	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite

Compliance Sampling Location: Outfall 001, after Ultraviolet (UV) light disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The limits for CBOD5 and Total Suspended Solids are technology-based on the Water Quality Antidegradation Implementation Guidance. Monitoring for influent BOD5 and Total Suspended Solids is based on Chapter 92a.61. The limits for Fecal Coliforms are technology based on Chapter 92a.47. The limits for Ammonia-Nitrogen are technology-based on the Water Quality Antidegradation Implementation Guidance. Monitoring for Total Nitrogen is based on Chapter 92a.61. The Total Phosphorus limit is technology-based on Chapter 96.5.