pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0253812**
Facility Type	**Municipal**	APS ID	**1078064**
Major / Minor	**Minor**	Authorization ID	**1421770**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Glendale Valley Municipal Authority**	Facility Name	**Glendale Valley WWTP**
Applicant Address	1800 Beaver Valley Road	Facility Address	2075 Beaver Valley Road
	Flinton, PA 16640-9000		Flinton, PA 16640
Applicant Contact	Lisa McMurray	Facility Contact	John Patrick
Applicant Phone	814-687-3005	Facility Phone	814-687-4666
Client ID	263735	Site ID	705180
Ch 94 Load Status	Not Overloaded	Municipality	Reade Township
Connection Status	No Limitations	County	Cambria
Date Application Received	December 21, 2022	EPA Waived?	No
Date Application Accepted		If No, Reason	Significant CB Discharge
Purpose of Application	NPDES permit renewal application.		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Keller Engineers on behalf of Glendale Valley Municipal Authority (Authority/Permittee) on December 21, 2022 for permittee's Glendale Valley WWTP (facility), located in White Township, Cambria County. This is a minor sewage facility with design flow of 0.45 MGD that discharges into Clearfield Creek (WWF) in state watershed 8-C. The current permit will expire on June 30, 2023. The terms and conditions of the current permit is automatically extended since the renewal application was received at least 180 days prior to the expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: Added: Annual Total Copper monitoring, quarterly E-Coli monitoring, DO changed to 5.0 mg/l

Sludge use and disposal description and location(s): Dewatered sludge is landfilled at Laurel Highlands Landfill.

Public Participation

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

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Project Manager	June 14, 2023
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	06/15/2023

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.45
Latitude	40º 43' 3"	Longitude	-78º 31' 36"
Quad Name	Coalport	Quad Code	1317
Wastewater Description:	Sewage Effluent		
Receiving Waters	Clearfield Creek (WWF)	Stream Code	26107
NHD Com ID	61835799	RMI	45.78
Drainage Area	98.2 mi^2	Yield (cfs/mi^2)	0.126
Q_{7-10} Flow (cfs)	12.37	Q_{7-10} Basis	Previous protection report
Elevation (ft)	1,378	Slope (ft/ft)	
Watershed No.	8-C	Chapter 93 Class.	WWF
Existing Use	**WWF, MF**	Existing Use Qualifier	Ch. 93
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status	Final	Name	Clearfield Creek
Background/Ambient Data		Data Source	
pH (SU)	7.0	Default	
Temperature (°C)	25	Default	
Hardness (mg/L)	100	Default	
Nearest Downstream Public Water Supply Intake		Shawville Power Plant, Lecontes Mills, Clearfield County	
PWS Waters	W. Br. Susquehanna River	Flow at Intake (cfs)	
PWS RMI	164.19	Distance from Outfall (mi)	49.32

Changes Since Last Permit Issuance: None

Streamflow:
USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on June 7, 2023) was utilized to determine the drainage area at discharge point. The StreamStats report shows the drainage area at the discharge point is 98.2 mi^2. The previous permit's fact sheet indicated a yield of 0.126 cfs/mi^2 which results in a Q_{7-10} value of 98.2*0.126 or 12.37 cfs. A default Q_{1-10}, Q_{7-10} of 0.64 and Q_{30-10}:Q_{7-10} of 1.36 will be used for modeling, if needed.

PWS Intake:
The nearby downstream PWS intake is Shawville Power Plant on West Branch Susquehanna River in Lecontes Mills Clearfield County, which is approximately 49.32 miles downstream of discharge point. Due to the distance, dilution, and effluent limitations, it is expected that the discharge will not adversely impact the PWS intake.

Wastewater Characteristics:
A pH of 6.85 (daily eDMR data, median July- September 2021-2022), default temperature of 25^0C (Default per 391-2000-007), and a default Hardness value of 100 mg/l will be used for modeling, if needed.

Background data:
There is no nearby WQN station to collect background stream data. In absence of site-specific data, default pH of 7.0, stream temperature of 25^0C, and stream hardness of 100 mg/l will be used for modeling, if needed.

Clearfield Creek TMDL:
The receiving watershed, Clearfield Creek Watershed, has an EPA approved TMDL for AMD. The current permit has annual monitoring requirements for AMD parameters (Total Aluminum, Total Iron, and Total Manganese). The existing monitoring requirements will be carried over unless there is a numeric limit warranted from modeling efforts.

Antidegradation (93.4):
The 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 receiving streams are designated as Warm-Water Fishes (WWF) and Migratory Fishes (MF). No High-Quality stream or Exceptional Value water is impacted by this discharge; therefore, no Antidegradation Analysis is performed for the discharge.

Treatment Facility Summary

Treatment Facility Name: Glendale Valley Municipal Authority STP

WQM Permit No.	Issuance Date
1110402	05/17/2011

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage		Extended Aeration	Ultraviolet	0.45

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.45	900	Not Overloaded	Dewatering	Landfill

Changes Since Last Permit Issuance: None

Treatment Plant Description

Glendale Valley owns and operates the wastewater treatment facility located in Reade Township, Cambria County. It is an extended aeration minor sewage facility with a design flow of 0.45 MGD and organic loading capacity of 900 lbs. BOD5/day. The wastewater from the collection system enters the facility at a bar screen manhole before entering a precast concrete lift station. The lift station conveys the raw wastewater to the influent building. It then flows to the treatment unit. The unit contains three independent treatment trains each with a capacity of 150,000 GPD. The unit contains a shared two-part equalization basin before splitting into the individual treatment trains, each containing aerobic, anoxic, and clarification chambers. The unit also contains a shared sludge storage chamber. Clarified effluent flows from the main treatment unit to a sand filter located in a second precast concrete structure. The filtered effluent flows to a third precast structure which acts as a finishing tank. This tank contains a dual UV lamp. Overall, the facility contains the following treatment units: 1 screen, 2 EQ tanks, 3 anoxic zones, 3 aeration zones, 3 clarifiers, 1 digester, 2 sand filters, 2 UV, 1 belt filter press.

Final effluent is sampled and metered before being discharged into Clearfield Creek.

The facility receives wastewater from the below tributary municipalities:

TRIBUTARY INFORMATION

Municipalities Served	Flow Contribution (%)	Type of Sewer System		Population
		Separate (%)	Combined (%)	
Chest Township	13	100	0	350
Reade Township	57	100	0	1,500
White Township	30	100	0	800

The following chemicals are used for wastewater treatment:

Wastewater Treatment Chemical	Purpose	Maximum Usage Rate	Units
Methanol	Nitrogen Reduction	n/a	n/a
Alum	Phosphorus Reduction	n/a	n/a

The facility didn't receive any hauled-in wastes in past three years but is planning to receive for next five years. Hauled-in treatment plant sludge will be received at aerobic digestor and septic tank pumping will be received at EQ tank. There is no industrial or commercial users to this treatment plant.

Biosolids Management: Dewatered sludge is landfilled at Laurel Highlands Landfill.

Compliance History

DMR Data for Outfall 001 (from February 1, 2022 to January 31, 2023)

Parameter	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22
Flow (MGD) Average Monthly	0.2128	0.1329	0.1174	0.0761	0.1239	0.1023	0.0783	0.0796	0.2231	0.1296	0.1824	0.2045
Flow (MGD) Daily Maximum	0.5517	0.3176	0.3723	0.1921	0.3199	0.3937	0.2199	0.1172	0.8591	0.2295	0.4122	0.6434
pH (S.U.) Minimum	6.44	6.35	6.27	6.13	6.56	6.37	6.23	6.2	6.33	6.23	6.3	6.48
pH (S.U.) Maximum	6.85	7.01	6.98	7.05	6.97	7.26	7.33	7.45	7.44	7.45	7.54	7.4
DO (mg/L) Minimum	8.7	8.32	8.38	7.72	7.8	4.48	5.41	5.13	5.44	5.83	5.76	5.64
CBOD5 (lbs/day) Average Monthly	3.9	2.5	2.1	1.7	2.8	1.8	1.4	1.6	6.1	2.2	4.7	4.3
CBOD5 (lbs/day) Weekly Average	7.5	2.8	2.8	3.6	6.1	2.9	1.9	2.2	15.4	2.7	10.3	8.4
CBOD5 (mg/L) Average Monthly	2	3.0	3.0	3	2.0	2.0	2.0	2.0	3.0	2.0	3.0	3.0
CBOD5 (mg/L) Weekly Average	2.4	3.0	3.3	4.4	3.2	2.6	2.5	2.8	6.0	2.3	4.9	5.2
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	171	195	185	132	116	128	85	121.0	136	106	103	117.0
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	220	276	277	180	137	162	103	160.0	196	125	141	165.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	123.9	194	231	241	133.8	190.8	156.9	177.0	82.6	105.6	76.4	115.1
TSS (lbs/day) Average Monthly	8.4	2.8	2.8	2.5	4.6	3.2	1.6	2.0	6.1	4.7	7.0	7.4
TSS (lbs/day) Raw Sewage Influent Average Monthly	163	187	185	145	128	143	92	128.0	137	89	94.0	100.0
TSS (lbs/day) Raw Sewage Influent Daily Maximum	196	293	343	185	153	200	110	192.0	198	130	144.0	152.0
TSS (lbs/day) Weekly Average	23.3	3.5	4.6	5.7	9.6	6.4	1.8	3.8	12.9	5.3	12.7	17.6
TSS (mg/L) Average Monthly	4	3.0	3.0	4	4.0	4.0	3.0	3.0	3.0	5.0	4.0	6.0

TSS (mg/L) Raw Sewage Influent Average Monthly	112	183	221	260	146	213	172	184.0	81	93	63.0	102.0
TSS (mg/L) Weekly Average	7	3.0	5.0	7	6.0	5.0	4.0	4.0	5.0	6.0	6.0	6.0
Fecal Coliform (CFU/100 ml) Geometric Mean	2	1.0	2.0	10	6.0	10	6.0	1.0	2.0	1.0	3.0	1.0
Fecal Coliform (CFU/100 ml) IMAX	7.3	1.0	7.5	77.1	59.1	740.8	240.0	1.0	10.9	2.0	140.8	2.0
UV Transmittance (%) Minimum	81.92	81.92	42	50.2	43.5	31.1	33.4	45.1	56.4	69.4	73.7	69.1
Nitrate-Nitrite (mg/L) Average Monthly	14	14.11	14.31	19.54	14.293	18.036	16.63	14.08	7.088	14.0	8.44	7.5
Nitrate-Nitrite (lbs) Total Monthly	432	406	307	322	375	401	274.0	287	382.0	425	315	230.0
Total Nitrogen (mg/L) Average Monthly	10.52	14.66	17.41	20.29	16.15	18.81	17.2	14.62	8.05	12.76	11.64	7.5
Total Nitrogen (lbs) Effluent Net Total Monthly	462	422	359	335	449.0	419	284	298.0	441	442	506	391.0
Total Nitrogen (lbs) Total Monthly	462	422	359	335	449.0	419	284	298	441	442	506	391.0
Total Nitrogen (lbs) Effluent Net Total Annual					4943							
Total Nitrogen (lbs) Total Annual					4943							
Ammonia (lbs/day) Average Monthly	0.2	0.2	0.08	0.06	2.0	0.09	0.05	0.1	0.5	0.1	4.0	4.0
Ammonia (mg/L) Average Monthly	0.1	0.193	0.1	0.1	1.486	0.129	0.1	0.2	0.214	0.1	2.24	3.09
Ammonia (lbs) Total Monthly	5	5.0	2.0	2	61.0	3.0	2.0	4.0	14.0	4.0	135	104.0
Ammonia (lbs) Total Annual					454							
TKN (mg/L) Average Monthly	0.6	0.52	0.6	0.8	1.808	0.9	17.2	0.523	0.958	15.0	3.19	4.44
TKN (lbs) Total Monthly	30	15	13.0	13	73.0	20	9.0	11.0	59.0	17.0	191	160.0
Total Phosphorus (mg/L) Average Monthly	3	3.97	5.04	6.25	4.97	5.9	7.24	6.34	2.7	3.0	2.42	2.31
Total Phosphorus (lbs) Effluent Net Total Monthly	108	114	100	103	142.0	129	121	128.0	135	96	97.0	65.0
Total Phosphorus (lbs) Total Monthly	108	114	100.0	103	142.0	129	121	128.0	135.0	96.0	97.0	65.0
Total Phosphorus (lbs) Effluent Net Total Annual					1038							

Total Phosphorus (lbs) Total Annual					1413							
Total Aluminum (mg/L) Daily Maximum		< 0.100										
Total Iron (mg/L) Daily Maximum		< 0.200										
Total Manganese (mg/L) Daily Maximum		0.159										

Existing Effluent Limits and Monitoring Requirements

For 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	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	93.9	140.8	XXX	25	37.5	50	1/week	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	112.7	169.0	XXX	30	45	60	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite

For 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	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Aluminum, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Iron, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Manganese, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite

Chesapeake Bay requirements for Outfall 001:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	2/week	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Net Total Nitrogen	Report	7808	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1041	XXX	XXX	XXX	XXX	1/month	Calculation

Summary of inspection:
02/22/2023: CEI conducted. No violation noted. The effluent appeared clear at the time of inspection

10/08/2019: CEI conducted. No violation noted.

1/18/2019: CEI conducted. No violation noted.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .45
Latitude 40º 43' 3.00" **Longitude** -78º 31' 36.00"
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

WQM 7.0:
WQM 7.0 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. DEP recently updated this model (ver. 1.1) to include new ammonia criteria that has been approved by US EPA as part of the 2017 Triennial Review. The model was utilized for this permit renewal by using updated $Q_{7\text{-}10}$ and historic background water quality levels of the river. The following data were used in the attached computer model of the stream:

- Discharge pH 6.85 (median July-Sep, 2021-22, eDMR data)
- Discharge Temperature 25°C (Default)
- Discharge Hardness 100 mg/l (Application data)
- Stream pH 7.0 (Default)
- Stream Temperature 25°C (Default)
- Stream Hardness 100 mg/l (Default)

The following two nodes were used in modeling:

Node 1: At the outfall 001 on Clearfield Creek (26107)
Elevation: 1378 ft (USGS National Map Advanced Viewer, 6/7/2023)
Drainage Area: 98.2 mi^2 (StreamStat Version 4.15, 6/7/2023)
River Mile Index: 45.48 (PA DEP eMapPA)
Low Flow Yield: 0.126 cfs/mi^2
Discharge Flow: 0.45 MGD

Node 2: At confluence with Beaverdam Run,
Elevation: 1375.07 ft (USGS TNM 2.0 viewer, 6/7/2023)
Drainage Area: 147 mi^2 (StreamStat Version 4.0, 6/7/2023)
River Mile Index: 45.26 (PA DEP eMapPA)
Low Flow Yield: 0.126 cfs/mi^2
Discharge Flow: 0.0 MGD

NH_3-N:
WQM 7.0 suggested NH_3-N limit of 25.0 mg/l as monthly average and 50.0 mg/l as IMAX limit during summer to protect water quality standards. PADEP's SOP BCW-PMT-033 (Rev. 3/24/2021) suggests that for existing dischargers, if WQM modeling results for summer indicates that an average monthly limit of 25 mg/l is acceptable, the application manager will generally establish a year-round monitoring requirements for ammonia-nitrogen, at a minimum. Current permit has year-round monitoring requirement which will be carried over in this renewal. The existing limits will be carried over.

$CBOD_5$:
The WQM 7.0 model suggests a monthly average $CBOD_5$ limit of 25 mg/l which suggests that the existing limits are still protective. The existing concentration-based and mass-based limits will be carried over.

Dissolved Oxygen (DO):
A minimum of 5.0 mg/L for D.O. is necessary to protect the designated use of the receiving stream and is supported by the output from WQM 7.0 modeling and consistent with Ch. 93.7. The current permit has a minimum DO limit of 4.0 mg/l. A review of the last 12 months eDMR data indicated that the facility can meet the new, more stringent DO limit at least 90% of the time. More stringent DO limit will be applied in the draft permit.

Toxics:
Based on the available data, PADEP utilizes Toxics Management Spreadsheet (TMS) to (1) evaluate reasonable potential for toxic pollutants to cause or contribute to an excursion above the water quality standards and (2) develop WQBELs for those such toxic pollutants (i.e., 40 CFR § 122.44(d)(1)(i)). It is noteworthy that some of these pollutants that may be reported as "non-detect", but still exceeded the criteria, were determined to be candidates for modeling because the method detection levels used to analyze those pollutants were higher than target QLs and/or the most stringent Chapter 93 criteria. The model then recommended the appropriate action for the Pollutants of Concerns based on the following logic:

1. In general, establish limits in the draft permit where the effluent concentration determined in B.1 or B.2 equals or exceeds 50% of the WQBEL (i.e., RP is demonstrated). Use the average monthly, maximum daily and instantaneous maximum (IMAX) limits for the permit as recommended by the TMS (or, if appropriate, use a multiplier of 2 times the average monthly limit for the maximum daily limit and 2.5 times the average monthly limit for IMAX).

2. For non-conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 25% - 50% of the WQBEL.

3. For conservative pollutants, in general, establish monitoring requirements where the effluent concentration determined in B.1 or B.2 is between 10% - 50% of the WQBEL.

NOTE 4 – If the effluent concentration determined in B.1 or B.2 is "non-detect" at or below the target quantitation limit (TQL) for the pollutant as specified in the TMS and permit application, the pollutant may be eliminated as a candidate for WQBELs or monitoring requirements unless 1) a more sensitive analytical method is available for the pollutant under 40 CFR Part 136 where the quantitation limit for the method is less than the applicable water quality criterion and 2) a detection at the more sensitive method may lead to a determination that an effluent limitation is necessary, considering available dilution at design conditions.

NOTE 5 – If the effluent concentration determined in B.1 or B.2 is a detection below the TQL but above or equal to the applicable water quality criterion, WQBELs or monitoring may be established for the pollutant.

4. Application managers may, on a site- and pollutant-specific basis, deviate from these guidelines where there is specific rationale that is documented in the fact sheet.
Output from TMS is provided below:

☑ ***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	70.4	AFC	Discharge Conc > 10% WQBEL (no RP)

Total Copper: TMS suggests monitoring for Total Copper based on model input concentration of 10.2 ug/l. An annual monitoring requirement will be added in this renewal to be consistent with other metals monitoring frequency.

Existing Parameters without RP demonstration:

Total Aluminum, Total Iron, and Total Manganese: As stated in page 3 of this report, existing monitoring for these three TMDL pollutants will be continued unless TMS suggests numeric limit. Since no RP is demonstrated, existing monitoring will be continued.

Additional Considerations

Fecal Coliform:
The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml. These are existing limits and will be carried over.

E. Coli:
Pa Code 25 § 92a. 61 requires monitoring of E. Coli. DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends monthly E. Coli monitoring for major sewage dischargers. This requirement will be applied from this permit term.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly, 45 mg/l average weekly, and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). The mass based average monthly and weekly average limits are calculated to be 112.7 lbs./day and 169.0 lbs./day respectively, which are the same as were in existing permit and will be carried over.

UV Disinfection:
PADEP's SOP BCW-PMT-033 recommends UV parameter monitoring where UV is used as a method of disinfection, with the same frequency as would be if Chlorine is used for disinfection. The current permit has UV Transmittance monitoring in % as daily minimum which will be carried over.

Flow and Influent BOD_5 and TSS Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii). Influent BOD_5 and TSS monitoring requirements are established in the permit per the requirements set in Pa Code 25 Chapter 94.

Best Professional Judgement (BPJ):

Total Phosphorus:
The current permit has monitoring requirements for Total Phosphorus which is consistent with Pa Code 25 Ch. 92a.61 and will be carried over.

Total Nitrogen: Pa Code 25 § 92a.61 requires monitoring, at a minimum, for all sewage facilities. Current monitoring requirement will be continued.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Chesapeake Bay TMDL
On March 30, 2012, DEP finalized Pennsylvania's Chesapeake Watershed Implementation Plan Phase 2 (i.e., Phase 2 WIP) to address U.S EPA's expectations for the Chesapeake Bay TMDL. The Chesapeake Bay TMDL identifies the

necessary pollution reductions from major sources of nitrogen, phosphorus and sediment across the Bay jurisdictions and sets pollution limits necessary to meet water quality standards. The Phase 2 WIP is an update to the Pennsylvania's Chesapeake Bay TMDL Strategy (2004) and the Chesapeake WIP Phase I (2011). In August 2019, DEP finalized Phase 3 Chesapeake Bay Watershed Implementation Plan (revised July 29, 2022) to provide the plans in place by 2025 to further achieve the nutrient and sediment reduction targets. The more details on the TMDL are available at www.dep.pa.gov.

As part of the Phase 3 WIP process, a Supplement to the Phase 3 WIP was developed, providing an update on TMDL implementation for point sources and a discussion of adjustments to the permitting strategy as a result of implementation experience. According to this document, Glendale Valley Municipal Authority is a Phase 3 significant discharger located within the Chesapeake Bay watershed. The following Cap Loads specified in the current Supplement to the Phase 3 WIP will be continued in the draft permit:

NPDES Permit No.	Phase	Facility	Latest Permit Issuance Date	Permit Expiration Date	Cap Load Compliance Start Date	TN Cap Load (lbs/yr)	TN Offsets Included in Cap Load (lbs/yr)	TP Cap Load (lbs/yr)	TN Delivery Ratio	TP Delivery Ratio
PA0205869	3	Glendale Valley MA	06/01/2018	6/30/2023	10/1/2013	7,808	-	1,041	0.511	0.347

Anti-Backsliding

The proposed limits are at least as stringent as are in existing permit, unless otherwise stated; therefore, anti-backsliding is not applicable.

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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	93.9	140.8	XXX	25	37.5	50	1/week	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	112.7	169.0	XXX	30	45	60	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/week	8-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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Aluminum, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Copper, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Iron, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite
Manganese, Total	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	8-Hr Composite

Compliance Sampling Location: At Outfall 001

Other Comments: None

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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Net Total Nitrogen	XXX	7808	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	1041	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: At Outfall 001

Other Comments: None

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, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033
☐	Other:

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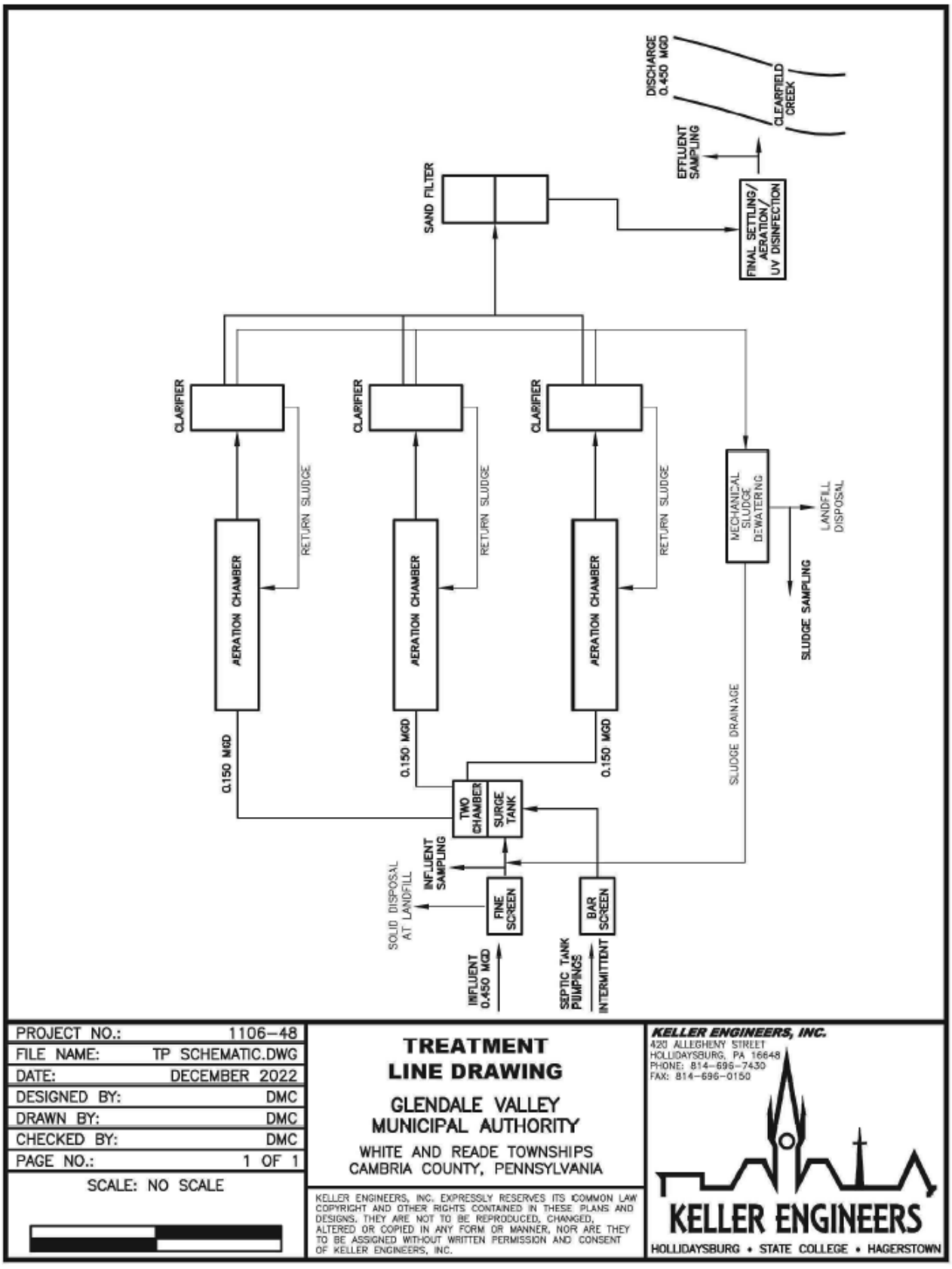
Process Flow Diagram



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StreamStats at Outfall 001

PA0253812 at 001

Region ID: PA
Workspace ID: PA20230608031201773000
Clicked Point (Latitude, Longitude): 40.71744, -78.52682
Time: 2023-06-07 23:12:23 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	98.2	square miles
ELEV	Mean Basin Elevation	1933	feet
PRECIP	Mean Annual Precipitation	44	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (98.2 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	98.2	square miles	2.33	1720
ELEV	Mean Basin Elevation	1933	feet	898	2700
PRECIP	Mean Annual Precipitation	44	inches	38.7	47.9

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Low-Flow Statistics Flow Report [100.0 Percent (98.2 square miles) Low Flow Region 3]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	13.5	ft^3/s	43	43
30 Day 2 Year Low Flow	18.3	ft^3/s	38	38
7 Day 10 Year Low Flow	7.03	ft^3/s	54	54
30 Day 10 Year Low Flow	8.96	ft^3/s	49	49
90 Day 10 Year Low Flow	12.7	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: 4.15.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Permit No. PA0253812

StreamStats at Node 2

PA0253812 at node 2

Region ID: PA
Workspace ID: PA20230608031602372000
Clicked Point (Latitude, Longitude): 40.71996, -78.52980
Time: 2023-06-07 23:16:23 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	147	square miles
ELEV	Mean Basin Elevation	1833	feet
PRECIP	Mean Annual Precipitation	43	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [100.0 Percent (147 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	147	square miles	2.33	1720
ELEV	Mean Basin Elevation	1833	feet	898	2700
PRECIP	Mean Annual Precipitation	43	inches	38.7	47.9

Permit No. PA0253812

Low-Flow Statistics Flow Report [100.0 Percent (147 square miles) Low Flow Region 3]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	18.5	ft^3/s	43	43
30 Day 2 Year Low Flow	24.9	ft^3/s	38	38
7 Day 10 Year Low Flow	9.53	ft^3/s	54	54
30 Day 10 Year Low Flow	12.2	ft^3/s	49	49
90 Day 10 Year Low Flow	17.4	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: 4.15.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

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WQM 7.0

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
08C	26107	CLEARFIELD CREEK	45.480	1378.00	98.20	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	0.126	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
Glendale Vly MA	PA0253812	0.4500	0.4500	0.4500	0.000	25.00	6.85

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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0253812

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
08C	26107	CLEARFIELD CREEK	45.260	1375.07	147.00	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	0.126	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

Permit No. PA0253812

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
08C	26107	CLEARFIELD 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												
45.480	12.37	0.00	12.37	.6962	0.00252	.792	54.04	68.19	0.31	0.044	25.00	6.99
Q1-10 Flow												
45.480	7.92	0.00	7.92	.6962	0.00252	NA	NA	NA	0.24	0.056	25.00	6.99
Q30-10 Flow												
45.480	16.83	0.00	16.83	.6962	0.00252	NA	NA	NA	0.36	0.037	25.00	6.99

Permit No. PA0253812

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	5		

Permit No. PA0253812

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
08C	26107	CLEARFIELD 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
45.480	Glendale Vly MA	6.83	50	6.83	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
45.480	Glendale Vly MA	1.35	25	1.35	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)		
45.48	Glendale Vly MA	25	25	25	25	5	5	0	0

Permit No. PA0253812

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
08C	26107	CLEARFIELD CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
45.480	0.450	25.000	6.991
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
54.038	0.792	68.192	0.305
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.23	0.604	1.33	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.070	5.915	Tsivoglou	5
Reach Travel Time (days)			
0.044			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.004	3.21	1.33	7.54
0.009	3.20	1.32	7.54
0.013	3.19	1.31	7.54
0.018	3.18	1.31	7.54
0.022	3.17	1.30	7.54
0.026	3.16	1.30	7.54
0.031	3.15	1.29	7.54
0.035	3.14	1.28	7.54
0.040	3.13	1.28	7.54
0.044	3.12	1.27	7.54

Permit No. PA0253812

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
08C	26107	CLEARFIELD 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)
45.480	Glendale Vly MA	PA0253812	0.450	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

Permit No. PA0253812

Toxics Management Spreadsheet

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: Glendale Valley Municipal Authority NPDES Permit No.: PA0253812 Outfall No.: 001

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.45	100	6.85						

					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	<	100									
	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		10.2									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L	<	200									
	Total Lead	µg/L		0.176									
	Total Manganese	µg/L		159									
	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		59.6									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Permit No. PA0253812

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

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

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Receiving Surface Water Name: Clearfield Creek 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	026107	45.48	1378	98.2			Yes
End of Reach 1	026107	45.26	1375.07	147			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	45.48	0.126										100	7		
End of Reach 1	45.26	0.126													

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	45.48														
End of Reach 1	45.26														

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.385 Analysis Hardness (mg/l): 100 Analysis pH: 6.98

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	5,881	
Total Copper	0	0		0	13.439	14.0	110	Chem Translator of 0.96 applied
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.581	81.6	640	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	117.180	120	939	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 6.99

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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	8.956	9.33	175	Chem Translator of 0.96 applied
Total Iron	0	0		0	1,500	1,500	28,161	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	59.7	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	118.139	120	2,249	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): ###### 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	

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Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	18,774	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 37.386 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 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	70.4	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

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

Pollutants	Governing WQBEL	Units	Comments
Total Aluminum	3,769	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	28,161	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	59.7	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	18,774	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	602	µg/L	Discharge Conc ≤ 10% WQBEL