pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0084514**
Facility Type	**Municipal**	APS ID	**3678**
Major / Minor	**Minor**	Authorization ID	**1271466**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Shade Gap Area Joint Municipal Authority Huntingdon County**	Facility Name	**Shade Gap STP**
Applicant Address	PO Box 185	Facility Address	22136 Croghan Pike
	Shade Gap, PA 17255-0185		Shade Gap, PA 17255-0185
Applicant Contact	Rory Myers	Facility Contact	David Hockenberry
Applicant Phone	(814) 259-3287	Facility Phone	(814) 259-3892
Client ID	64599	Site ID	449751
Ch 94 Load Status	Not Overloaded	Municipality	Shade Gap Borough
Connection Status	No Limitations	County	Huntingdon
Date Application Received	April 30, 2019	EPA Waived?	Yes
Date Application Accepted	May 1, 2019	If No, Reason	

Purpose of Application: NPDES permit Renewal.

Summary of Review

Shade Gap Area Joint Municipal Authority has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on October 17, 2014 and became effective on November 1, 2014. The permit expired on October 31, 2019 but the terms and conditions of the permit have been extended since that time.

Shade Gap Area Joint Municipal Authority owns, operates, and maintains the wastewater treatment plant located in Shade Gap Borough, Dublin Township, Huntingdon County. The aeration secondary treatment plant discharges treated municipal wastewater to Shade Creek, which is classified for Trout Stocking Fishes (TSF). The collection system has 30% sewers from Shade Gap Borough and 70% sewers from Dublin Township. The facility has a design average annual flow of 0.065 MGD. The hydraulic design capacity is 0.163 MGD.

WQM Part II No. 3192406 original was issued on November 25, 1992.

Changes from the previous permit: Unit of Fecal Coliform changed from CFU/100 ml to No./100 ml.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		/s/ Hilary H. Le / Environmental Engineering Specialist	January 21, 2020
X		/s/ Daniel W. Martin, P.E. / Environmental Engineer Manager	March 26, 2020
X		/s/ Maria D. Bebenek, P.E. / Clean Water Program Manager	April 07, 2020

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.065
Latitude	40º 11' 15.07"	Longitude	-77º 51' 20.53"
Quad Name	Shade Gap	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Shade Creek (TSF)	Stream Code	12806
NHD Com ID	66211959	RMI	4.6 miles
Drainage Area	19.6 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	880.0	Slope (ft/ft)	
Watershed No.	12-C	Chapter 93 Class.	TSF
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	
Nearest Downstream Public Water Supply Intake	Mifflintown Borough Municipal Authority, Juniata County		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI	34.4 miles	Distance from Outfall (mi)	Approximate 64 miles

Changes Since Last Permit Issuance: none

Drainage Area

The discharge is to Toms Creek at RMI 4.6 miles. A drainage area upstream of the discharge is estimated to be 19.6 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow

There is no gage station on Shade Creek to accurately determine Q_{7-10} flow. Therefore, Streamflow will be correlated with past streamflow records taken from the nearby USGS gage station on the Standing Stone Creek, Huntingdon county. The Q_{7-10} is 6.85 cfs and the drainage area is 133 mi.^{2} (according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/) which results in a Q_{7-10} low flow yield of 0.05 cfs/mi.^{2}. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

Low Flow Yield = 6.85 cfs / 133 mi.^{2} ≈ 0.05 cfs/mi.^{2}

Q_{7-10} discharge = 0.05 cfs/mi.^{2} x D.A discharge = 0.05 cfs/mi.^{2} x 19.6 mi.^{2} = 1.0 cfs

Q_{30-10} = 1.36 * 1.0 cfs ≈ 1.36 cfs

Q_{1-10} = 0.64 * 1.0 cfs ≈ 0.64 cfs

The resulting dilution ratio (under Q_{7-10} conditions) is: Q_{stream} / $Q_{discharge}$ = 1.00 cfs / [0.065 MGD * (1.55 cfs/MGD)] = 9.9:1

Public Water Supply

The closest water supply intake located downstream from the discharge is the Mifflintown Borough Municipal Authority on Juniata River located approximately 64 miles downstream. Due to dilution, this discharge is not expected to have any impact on the intake.

Treatment Facility Summary				

Treatment Facility Name: Shade Gap Area STP

WQM Permit No.	Issuance Date
3192406	11/25/1992

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Hypochlorite	0.065

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.163	135	Not Overloaded	Drying	Combination of methods

Changes Since Last Permit Issuance: none

The treatment plant consists:

A wet well/comminutor/bar screen, equalization tank, 2 aeration tanks, 2 settling tanks, 2 chlorine contact tanks, post aeration, sludge digester, 3 reed beds, 3 blowers, and discharge (outfall 001).

Compliance History	
Summary of DMRs:	DMR Data for Outfall 001 from December 1, 2018 to November 30, 2019 are summarized in the Table below (Pages # 5 & 6).
Summary of Inspections:	11/30/2016: Mr. Clark, DEP WQS, conducted a routine compliance inspection. There were no violations noted during inspection. The field test results were within permitted limits. 11/28/2017: Mr. Clark, DEP WQS, conducted a routine compliance inspection. There were no violations noted during inspection. The field test results were within permitted limits. 11/27/2018: Mr. Clark, DEP WQS, conducted a compliance inspection. There were recommendations such as: post valid operator certification, replace expired #10 pH buffer, keep maintenance and repair log up to date, and report sludge accepted at the plant. Field tests results were within permitted limits. 11/27/2019**:** Mr. Clark, DEP WQS, conducted a routine compliance inspection. There were no violations noted during inspection. The field test results were within permitted limits.
Other Comments:	There were no open violations against facility or permittee.

Other Comments:

The table below summarizes the influent/effluent testing results submitted along with the application.

Influent Testing Results			*Effluent Testing Results*		
Parameter	**Min/Max Value**	**Average Value**	**Parameter**	**Min/Max Value**	**Average Value**
BOD_5 (mg/L)	87.9 mg/L	87.9 mg/L	pH (minimum)	6.9 S.U.	
BOD_5 (lbs/day)	7.18 lbs/day	7.18 lbs/day	pH (maximum)	8.0 S.U.	
TSS (mg/L)	87.0 mg/L	87.0 mg/L	D.O (minimum)	5.1 mg/L	8.2 mg/L
TSS (lbs/day)	7.11 lbs/day	7.11 lbs/day	TRC	1.60 mg/L	0.39 mg/L
TN (mg/L)	< 35.86 mg/L	< 35.83 mg/L	Fecal Coliform	9678.4 No./100mL	< 26.85 No./100mL
TN (lbs/day)	2.93 lbs/day	2.93 lbs/day	$CBOD_5$	11.0 mg/L	< 3.94 mg/L
TP (mg/L)	3.68 mg/L	3.68 mg/L	TSS	22.0 mg/L	< 3.74 mg/L
TP (lbs/day)	0.30 lbs/day	0.30 lbs/day	NH3-N	< 0.10 mg/L	< 0.10 mg/L
NH_3-N (mg/L)	4.42 mg/L	4.42 mg/L	TN	< 60.27 mg/L	< 14.09 mg/L
NH_3-N (lbs/day)	0.36 lbs/day	0.36 lbs/day	TP	7.32 mg/L	2.76 mg/L
TDS (mg/L)	648 mg/L	648 mg/L	Temp	78.8 F	58.3 F
TDS (lbs/day)	52.96 lbs/day	52.96 lbs/day	TKN	14.46 mg/L	< 2.11 mg/L
Fecal Coliform	5,172,000 No./100 mL	4,172,00 No./100 mL	NO_2-N + NO_3-N	< 59.27 mg/L	< 11.98 mg/L
TKN	34.50 mg/L	34.50 mg/L	TDS	696 mg/L	568 mg/L
NO_2-N + NO_3-N	< 1.36 mg/L	< 1.36 mg/L	Chloride	231 mg/L	182 mg/L
			Bromide	< 0.40 mg/L	< 0.40 mg/L
			Sulfate	57.1 mg/L	48.3 mg/L
			Oil and Grease	< 5.15 mg/L	< 5.12 mg/L
			Total Copper	0.012 mg/L	0.011 mg/L
			Total Lead	< 0.008 mg/L	< 0.008 mg/L
			Total Zinc	0.064 mg/L	0.063 mg/L

Compliance History

DMR Data for Outfall 001 (from December 1, 2018 to November 30, 2019)

Parameter	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18
Flow (MGD) Average Monthly	0.0074	0.0104	0.0135	0.0103								
Flow (MGD) Daily Maximum	0.0177	0.0194	0.0188	0.0197								
pH (S.U.) Minimum	7.0	6.8	7.0	6.7								
pH (S.U.) Maximum	7.3	7.5	7.3	7.3								
DO (mg/L) Minimum	6.9	6.4	6.1	5.6								
TRC (mg/L) Average Monthly	0.36	0.41	0.3	0.4								
TRC (mg/L) Instantaneous Maximum	1.34	1.11	0.7	0.74								
CBOD5 (lbs/day) Average Monthly	< 0.3	< 0.4	< 0.5	< 0.4								
CBOD5 (lbs/day) Weekly Average	0.3	< 0.4	< 0.5	0.6								
CBOD5 (mg/L) Average Monthly	< 3.9	< 3.0	< 3.0	< 4.5								
CBOD5 (mg/L) Weekly Average	4.8	< 3.0	< 3.0	6.0								
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	12	7.36	25	14.0								
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	17	12.38	41	17.0								
BOD5 (mg/L) Raw Sewage Influent Average Monthly	187	78.3	163.7	134.0								
TSS (lbs/day) Average Monthly	< 0.2	< 0.45	< 0.3	0.2								
TSS (lbs/day) Raw Sewage Influent Average Monthly	6.0	10.79	18	32.0								
TSS (lbs/day) Raw Sewage Influent Daily Maximum	6.0	19.75	27	42.0								

TSS (lbs/day) Weekly Average	0.2	0.72	0.3	0.3								
TSS (mg/L) Average Monthly	< 2.0	< 3.50	< 1.8	2.3								
TSS (mg/L) Raw Sewage Influent Average Monthly	82.0	99.00	115	288.0								
TSS (mg/L) Weekly Average	2.4	5.40	2.0	2.6								
Fecal Coliform (CFU/100 ml) Geometric Mean	< 6.0	12.81	< 4.0	< 4.0								
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 10.0	16.40	< 4.0	< 4.0								
Nitrate-Nitrite (mg/L) Average Quarterly			< 32.0									
Total Nitrogen (mg/L) Average Quarterly			< 33.0									
TKN (mg/L) Average Quarterly			< 1.0									
Total Phosphorus (mg/L) Average Quarterly			4.32									

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.065
Latitude 40º 11' 9.34" **Longitude** -77º 51' 46.30"
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

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model indicates that a monthly average limit of 25 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. However, the existing limits of 25 mg/L monthly average (AML), 40mg/l average weekly limit (AWL), and 50 mg/L instantaneous maximum will remain in the proposed permit as per guidance document 391-2000-014. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Average monthly mass limit: 25 mg/L x 0.065 MGD x 8.34 = 13.6 (14.0) lbs/day
Average weekly mass limit: 40 mg/L x 0.065 MGD x 8.34 = 21.7 (22.0) lbs/day

Total Suspended Solids (TSS):
The existing technology-based 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 based on 25 Pa. Code § 92a.47. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Average monthly mass limit: 30 mg/L x 0.065 MGD x 8.34 = 16.3 (16.0) lbs/day
Average weekly mass limit: 45 mg/L x 0.065 MGD x 8.34 = 24.4 (24.0) lbs/day

Ammonia (NH_3-N):
NH_3N calculations are based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached WQM 7.0 computer model of the stream:

*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	20°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	25ºC	(Default for CWF)
*	Background NH_3-N	=	0 mg/L	(Default)

The attached computer printout of the WQM 7.0 stream model indicates that no limitation on NH_3 as a monthly average is necessary to protect the aquatic life from toxicity effects

Dissolved Oxygen (DO):
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. This is consistent with the previous permit and current Department criteria.

pH:
The effluent discharge pH should remain above 6 and below 9 standard units according to 25 Pa Code § 95.2(1).

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 1,000/100 ml and 25 Pa Code § 92a.47.(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean and an instantaneous maximum not greater than 10,000/100 ml.

Total Residual Chlorine (TRC):
Based on the attached TRC Excel Spreadsheet calculator, which uses the equations and calculations from the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.5 mg/L and an instantaneous maximum limit of 1.6 mg/L. These limits are the same as those in the existing permit. The facility has been meeting the limits consistently.

Chesapeake Bay Strategy:
The Department formulated a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). Sewage discharges have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases I, II, and III) dischargers will receive annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/L TN and 0.8 mg/L TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. Phase IV (0.2 -0.4 MGD) will be required to monitor and report TN and TP during permit renewal monthly and Phase V (below 0.2 MGD) will monitor during current permit renewal once a year. However, any facility in Phases IV and V that undergoes expansion is subjected to cap load right away. This plant is classified as a phase V, will be required to monitor and report for Total Phosphorus, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, and Total Nitrogen.

Additionally, according to SOP for establishing effluent limitation for individual sewage, monitoring frequency for nutrients should be equivalent to conventional pollutants in Table 6-3 of DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) ("Permit Writer's Manual") where the facility discharges to nutrient-impaired waters, or a lesser frequency for discharges to waters not impaired for nutrients. Quarterly monitoring frequency is required for this discharge since the receiving stream is not nutrient impaired. These requirements will remain in the proposed permit.

Influent BOD_5 and TSS Monitoring:
The permit will include influent BOD_5 and TSS monitoring at the same frequency as is done for effluent in order to implement 25 Pa. Code § 94.12 and assess percent removal requirements, per DEP policy.

Biosolids Management:
Digested Sludge is sent out periodically to the drying beds.

Stormwater:
There is no stormwater outfall associated with this facility.

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. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d Listed Streams:
The discharge is not located on a 303d listed stream segment. The stream segment that receive the discharge is listed as attaining its used for aquatic life and fish consumption.

Class A Wild Trout Fisheries:
No Class A Wild Trout Fisheries are impacted by this discharge.

Additional Considerations

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

Monitoring Frequency and Sample Type
The facility currently is required to collect daily effluent grab samples for D.O., TRC, and pH; two per month effluent 8-hr composite samples of $CBOD_5$, and TSS; two per month effluent grab samples of Fecal Coliform; one quarter effluent 8-hr composite samples of Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, and TP; and one quarter effluent calculation samples of TN. Based on the best professional judgement of the author, the existing monitoring frequencies are sufficient and necessary. Therefore, the existing monitoring frequencies will remain the same as those specified in the proposed permit.

WQM 7.0

Node 1: Outfall 001 on Shade's Creek (12806)

Elevation:	880 ft (USGS National Map Viewer)
Drainage Area:	19.6 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	4.60 (PA DEP eMapPA)
Low Flow Yield:	0.05 $cfs/mi.^2$
Discharge Flow:	0.065 MGD (NPDES Application)

Node 2: Just before confluence with Craig Run to Shade Creek

Elevation:	812 ft (USGS National Map Viewer)
Drainage Area:	20.3 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	3.23 (PA DEP eMapPA)
Low Flow Yield:	0.05 $cfs/mi.^2$
Discharge Flow:	0.000 MGD

Attachment is WQM 7.0 data.

Shade Gap WQM 7.0 data.pdf

TRC results

TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9			
1	= Q stream (cfs)	0.5	= CV Daily
0.065	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 3.191	1.3.2.iii	WLA cfc = 3.104
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1.189	5.1d	LTA_cfc = 1.804

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	14	22 Wkly Avg	XXX	25	40	50	2/month	8-Hr Composite
Total Suspended Solids	16	24 Wkly Avg	XXX	30	45	60	2/month	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Calculation

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	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	14.0	22.0 Wkly Avg	XXX	25.0	40.0	50.0	2/month	8-Hr Composite
TSS	16.0	24.0 Wkly Avg	XXX	30.0	45.0	60.0	2/month	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	Grab
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
TKN	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Calculation

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis 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: No. BCW-PMT-002, revised January 6, 2020
☐	Other: