pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088617**
Facility Type	**Municipal**	APS ID	**335861**
Major / Minor	**Minor**	Authorization ID	**1222937**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Bratton Township**	Facility Name	**Bratton Township STP**
Applicant Address	133 Mountain Lane	Facility Address	1931 State Route 103 N
	Mcveytown, PA 17051-8429		Lewistown, PA 17044
Applicant Contact	Stanley Collins	Facility Contact	Tim Tressler
Applicant Phone	(717) 899-6815	Facility Phone	(717) 899-6815
Client ID	117262	Site ID	541322
Ch 94 Load Status	Not Overloaded	Municipality	Bratton Township
Connection Status	No Limitations	County	Mifflin
Date Application Received	March 5, 2018	EPA Waived?	Yes
Date Application Accepted	April 16, 2018	If No, Reason	

Purpose of Application: Renewal of NPDES permit

Summary of Review

1.0 General Discussion

This fact sheet supports the re-issuance of an existing NPDES permit for discharge of treated domestic wastewater from Bratton Township's wastewater treatment plant located in Bratton Township, Mifflin County. The treatment plant has a hydraulic design capacity of 0.09 MGD. Bratton Township owns and operates the wastewater treatment plant. The discharge goes to Carlisle Run (HQ-CWF) which is designated in the Pa Code Chapter 93.9 drainage List N as High Quality-Cold Water Fishes (HQ-CWF). According to the previous protection report, the discharge point on Carlisle Run is approximately 100 feet away from the confluence with the Juniata River. Railroad tracks and a very steep embankment prohibit extending the discharge line to the Juniata River. On January 26, 2001, an aquatic biologist for the Department evaluated the stream in the area of the discharge location to determine if the location could be considered backwash from the Juniata River and in essence be considered a direct discharge to the river. The biologist concluded that the backwater area of the Juniata River extends well into the existing railroad underpass culvert, and very little, if any, of the tributary stream would be affected by the discharge at the proposed location. The discharge has been and will be continue to be considered a direct discharge to Juniata River which is classified as Warm Water Fishes(WWF). The existing NPDES permit was issued on August 20, 2013 with an effective date of September 1, 2013 and expiration date of August31, 2018. The applicant submitted a timely permit renewal application to the Department and is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application.

A topographic map showing the discharge location is presented in attachment A

Approve	Deny	Signatures	Date
X		J. Pascal Kwedza, P.E. / Environmental Engineer	October 8, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E./ Program Manager	

Summary of Review

1.1 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.

1.2 Changes to the existing Permit

- Monitoring frequency of Total Nitrogen, TKN, Nitrate-Nitrite-N and Total Phosphorus has been increased to semi-annual collect adequate data.
- Ammonia -nitrogen monitoring has been added to the permit

1.3 Existing Permit Limits:

Discharge Parameter	DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS	
	Mass Units				Concentrations				
	Monthly Average (lbs/day)	Weekly Average (lbs/day)	Total Monthly (lbs/day)	Total Annual (lbs/year)	Monthly Average (mg/l)	Weekly Average (mg/l)	Inst. Maximum (mg/l)	Monitoring Frequency	Sample Type
Flow (mgd)	Monitor & Report	Monitor & Report Max	XXX	XXX	XXX	XXX	XXX	Continuous	Measured
Influent	Monitor & Report	Monitor & Report Max	XXX	XXX	Monitor & Report	XXX	XXX	2/month	8-hour comp
pH (S.U.)	XXX	XXX	XXX	XXX	From 6.0 to 9.0 inclusive			1/day	Grab
D.O.	XXX	XXX	XXX	XXX	Minimum of 5.0 mg/l at all times			1/day	Grab
Total Suspended Solids	22	34	XXX	XXX	30	45	60	2/month	8-hour comp
$CBOD_5$	19	30	XXX	XXX	25	40	50	2/month	8-hour comp
Fecal Coliform (5/1 to 9/30)	XXX	XXX	XXX	XXX	200	XXX	XXX	2/month	Grab
Fecal Coliform (10/1 to 4/30)	XXX	XXX	XXX	XXX	2,000	XXX	XXX	2/month	Grab
Nitrate-Nitrite as N	XXX	Report	XXX	Report Annl Avg	XXX	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	XXX	Report	XXX	Report Annl Avg	XXX	XXX	XXX	1/year	Calculation
Total Kjeldahl Nitrogen	XXX	Report	XXX	Report Annl Avg	XXX	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	XXX	Report	XXX	Report Annl Avg	XXX	XXX	XXX	1/year	8-Hr Composite
UV Dosage (mjoules/cm^2)	XXX	XXX	Report	Report	XXX	XXX	XXX	1/day	Recorded

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.09
Latitude	40º 30' 35"	Longitude	-77º 40' 27"
Quad Name	Belleville	Quad Code	1424
Wastewater Description:	Sewage Effluent		
Receiving Waters	Carlisle Run (HQ-CWF) See report	Stream Code	12663
NHD Com ID	66207855	RMI	0.01
Drainage Area	5.79	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	12-A	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining		
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	Mifflintown Borough Municipal		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	21

Changes Since Last Permit Issuance:

Other Comments:

1.4.1 Water Supply Intake

The nearest downstream water supply intake is approximately 21 miles downstream for Mifflintown Borough Municipal Authority on Juniata River in Juniata County. No impact is expected from this discharge on the intake

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.09
Latitude	40º 30' 35"	Longitude	-77º 40' 27"
Quad Name	Belleville	Quad Code	1424
Wastewater Description:	Sewage Effluent		
Receiving Waters	Juniata River (WWF) See report	Stream Code	11414
NHD Com ID	66207855	RMI	58.75
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	12-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment			
Source(s) of Impairment	Unknown		
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake	Mifflintown Borough Municipal		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	21

Changes Since Last Permit Issuance:

Other Comments: The discharge is considered as a direct discharge to Juniata River. Water quality analysis is based on Juniata River instead of Carlisle Run.

Treatment Facility Summary				
Treatment Facility Name: Bratton Township STP				
WQM Permit No.	**Issuance Date**			
4402401	6/14/2001			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	Ultraviolet	0.09
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.09	180	Not Overloaded		Landfill

Changes Since Last Permit Issuance:

Other Comments:

2.1 Treatment Facility

The treatment plant is a 0.090 MGD two train extended aeration system which consists of a bar screen, flow Equalization tank, 2 aeration tanks and 2 clarifiers, UV Disinfection System, post aeration tank and a sludge holding tank. The system incorporates the chemical addition of lime (for pH control).

Compliance History

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

Parameter	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18
Flow (MGD) Average Monthly	0.026	0.036	0.035	0.049	0.053	0.051	0.056	0.046	0.063	0.066	0.043	0.063
Flow (MGD) Daily Maximum	0.048	0.087	0.064	0.210	0.428	0.122	0.180	0.091	0.208	0.152	0.070	0.158
pH (S.U.) Minimum	6.9	6.9	6.8	6.8	6.7	6.9	7.0	7.1	6.8	7.1	7.3	7.4
pH (S.U.) Maximum	8.5	8.3	8.3	8.3	8.0	8.0	8.0	8.0	8.1	8.6	8.4	8.2
DO (mg/L) Minimum	7.8	6.4	8.0	7.7	7.9	9.0	8.0	9.5	7.8	8.3	7.3	7.8
CBOD5 (lbs/day) Average Monthly	0.72	1.0	1.75	1.65	0.9	1.2	3.0	1.4	1.1	1.08	1.2	1.2
CBOD5 (lbs/day) Weekly Average	0.72	1.3	2.0	2.3	1.0	1.4	4.0	1.5	1.3	1.2	1.6	1.2
CBOD5 (mg/L) Average Monthly	< 3.00	5.0	3.9	6.21	4.1	4.4	8.0	4.0	< 3.33	7.2	4.1	4.3
CBOD5 (mg/L) Weekly Average	< 3.00	6.18	4.85	8.76	4.66	5.81	10.1	4.81	3.66	7.6	5.37	5.5
BOD5 (lbs/day) Influent Average Monthly	27	21	46	29.5	29.7	29	31	25	27	64	124	164
BOD5 (lbs/day) Influent Daily Maximum	34	26	59	43	31.5	30	40	26.7	35	81	138	216
BOD5 (mg/L) Influent Average Monthly	131	93.2	113.6	112.2	132	104	104	67.1	81.2	205.5	395	518
TSS (lbs/day) Average Monthly	0.43	0.71	1.75	1.42	2.5	3.8	4.2	2.7	2.5	2.5	1.4	1.4
TSS (lbs/day) Influent Average Monthly	28.5	16	26.5	27.5	7.8	29.5	29.5	25.5	24	46	44	87.0
TSS (lbs/day) Influent Daily Maximum	39	17.5	31	42	13.5	30	33	27	30	49	45	123

TSS (lbs/day) Weekly Average	3.4	0.77	2.0	1.55	3.0	4.2	6.5	3.0	3.1	3.0	2.2	2.0
TSS (mg/L) Average Monthly	2	3.1	3.8	5.4	11.3	13.8	9.4	7.4	7.8	7.2	4.4	5
TSS (mg/L) Influent Average Monthly	139	71	60.5	105.5	34.7	106.5	92.5	67.5	72.0	143	142	270
TSS (mg/L) Weekly Average	2.20	3.20	4.80	6.00	13.2	16.8	9.6	3.0	8.8	7.6	6.80	8.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 2.00	2.1	< 1.0	3.4	< 2.0	< 1.00	< 1.0	< 1.00	170	11.6	15.7	4.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1.0	4.1	< 1.0	12.4	< 4.0	< 1.00	< 1.0	< 1.00	1986	34.0	< 1.00	15.8
UV Intensity (µw/cm²) Minimum	3.7	4.0	5.9	5.9	4.4	3.2	2.7	2.4	2.2	2.5	1.2	1.7
UV Intensity (µw/cm²) Average Monthly	7.0	5.0	8.0	8.9	5.4	6.9	4.0	3.2	7.8	9.8	4.6	3.6
Nitrate-Nitrite (lbs) Total Annual									< 2379			
Nitrate-Nitrite (mg/L) Annual Average									< 28.94			
Total Nitrogen (lbs) Total Annual									< 2464			
Total Nitrogen (mg/L) Annual Average									< 29.95			
TKN (lbs) Total Annual									85			
TKN (mg/L) Annual Average									1.04			
Total Phosphorus (lbs) Total Annual									517			
Total Phosphorus (mg/L) Annual Average									6.29			

3.2 Compliance History	
Summary of DMRs:	Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on the table above indicate permit limits have been met consistently. No permit violation noted on DMRs during the period reviewed.
Summary of Inspections:	The facility was inspected 6 times during the past permit cycle. Inspection reports review for the facility during the period indicate permit limits have been met satisfactorily. Fecal Coliform violation occurred during facility inspection on 8/13/16. The violation has been addressed.

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	.09
Latitude	40º 30' 33.58"	**Longitude**	-77º 40' 25.62"
Wastewater Description:	Sewage Effluent		

4.1 Basis for Effluent Limitations

In general, the Clean Water Act (AWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

4.1.1 Technology-Based Limitations

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

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

Comments: TRC limit is not required for this discharge since UV disinfection is utilized at the facility

4.2 Water Quality-Based Limitations

4.2.1 Streamflows

Stream flows for the water quality analysis were determined from StreamStats regression equation analysis on October 7, 2019. According to StreamStats, the point on Juniata River just after its confluence with Carlisle Run has a $Q_{7\text{-}10}$ of 240 cfs and a drainage area of 2480 mi^2, which results in a $Q_{7\text{-}10}$ low flow yield of 0.097 cfs/mi^2. The discharge is assumed to mix with 1/3 of the river, hence 1/3 of the river's flow will be used for modeling purposes. The chronic or 30-day ($Q_{30\text{-}10}$), and an acute or 1 day ($Q_{1\text{-}10}$) exposure stream flow for the discharge point will be calculated using the factors 1.36 and 0.64 respectively following DEP Guidance No. 391-2000-023 as flows:

$$\text{Low Flow Yield} = 240 \text{ cfs} / 2480 \text{ mi}^2 \approx 0.097 \text{ cfs/mi}^2$$

$$\text{Effective } Q_{7\text{-}10} = 1/3 \times 240 \text{ cfs} = 80\text{cfs}$$

$$Q_{30\text{-}10} / Q_{7\text{-}10} = 1.36$$

$Q_{1-10} / Q_{7-10} = 0.64$

The drainage area at the actual discharge point taken from previous protection report = 5.79 mi^2

4.2.3 NH_3N Calculations

NH_3N calculations will be 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 instream NH_3N criteria used in the attached computer model of the stream:

- Discharge pH = 6.9 (DMR median from Jul. to Sept.)
- Discharge Temperature = 25 ° C (Default)
* Stream pH = 7.0(Default))
* Stream Temperature = 20°C (Default))
- Background NH_3-N = 0.0 (default)
- Discharge flow =0.09MGD

4.2.4 $CBOD_5$:

The attached result of WQM 7.0 stream model (attachment B) indicates that, for the Bratton Township Discharge of 0.09MGD, secondary treatment is adequate to protect the water quality of the stream Therefore a limit of 25 mg/l $CBOD_5$ as a monthly average limit (AML),40mg/l weekly average (AWL) and 50 mg/l as instantaneous maximum (IMAX) are recommended for this permit cycle. These limitations are consistent with the existing permit and the STP has been complying with these limitations. Mass limits for AML and AWL are calculated as follows:

Average monthly mass limit: 25 mg/L x 0.09 MGD x 8.34 = 19 lbs/day
Average weekly mass limit: 40 mg/L x 0.09 MGD x 8.34 = 30 lbs/day

4.2.5 NH_3-N:

The attached result of WQM 7.0 stream model (attachment B) also indicates that no limitation on NH_3-N as a monthly average is necessary to protect the aquatic life from toxicity effects. However, NH_3-N monitoring 2/month will be required in the permit to ensure treatment efficiency

4.2.6 Dissolved Oxygen

The existing permit contains a limit of 5 mg/l for Dissolved Oxygen (DO). DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001, 10/97) suggests that either the adopted minimum stream D.O. criteria for the receiving stream or the effluent level determined through water quality modeling be used for the limit. Since the WQM 7.0 model was run using a minimum D.O. of 5.0 mg/l, this limit will be continued in the renewed permit with a daily monitoring requirement per DEP guidance.

4.2.7 Total Suspended Solids (TSS):

There is no water quality criterion for 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 40 CFR 133.102b(1) and 25 Pa. Code § 92a.47. Mass limits are calculated below:

Average monthly mass limit: 30 mg/L x 0.09 MGD x 8.34 = 23 lbs/day
Average weekly mass limit: 45 mg/L x 0.09 MGD x 8.34 = 34 lbs/day

4.2.8 Total Residual Chlorine:

The discharge does not have any reasonable potential to cause or contribute to a water quality standards violation for total residual chlorine since the permittee utilizes UV instead of chlorine for wastewater disinfection. Therefore, the proposed permit does not contain effluent limits for total residual chlorine. The permittee may use chlorine-based chemicals for cleaning and is required to optimize chlorine usage to prevent negative impacts on receiving stream. Daily UV Intensity monitoring in µw/cm² in the existing permit will remain in the permit to ensure efficiency of the UV unit.

4.2.9 Toxics

A reasonable potential (RP) analysis was done for pollutants in the discharge. The discharge consists entirely of domestic wastewater with no pollutants of concern that need further analysis.

4.2.10 Chesapeake Bay Strategy:

The Department formulated a strategy in April 2007, to comply with the EPA and Chesapeake Bay Foundation requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) 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. Phase 4 (0.2 -0.4mgd) and Phase 5(below 0.2mdg) will be required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001). Any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away.

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011 and Phase 2 in March 2012. In accordance with the Phase 2 WIP and its supplement, re-issuing permits for significant dischargers follow the same phased approach formulated in the original Bay strategy, whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewal. This facility is, classified as a phase 5, and has been monitoring Total Phosphorus, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Nitrogen annually and will continue to monitor them semi-annually during the next permit cycle collect adequate data.

5.0 Other Requirements

5.1 Anti-backsliding

Not applicable to this permit

5.2 Stormwater:

No storm water outfall is associated with this facility

5.3 Biosolids Management

Sludge is hold up in a sludge holding tank and hauled out by a licensed hauler periodically.

5.4 Special Permit Conditions

The permit will contain the following special conditions:

Stormwater Prohibition, Approval Contingencies, Proper Waste/solids Management and Restriction on receipt of hauled in waste under certain conditions.

5.5 Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. 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 Exceptional Value Waters are impacted by this discharge. The receiving stream is classified as a High-Quality Cold-Water Fishery. However, the opinion of the aquatic biologist is that the discharge area is affected by backwash from the Juniata River and the discharge is, in essence, a discharge to the Juniata River.

5.6 Class A Wild Trout Fisheries

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

5.7 303d Listed Streams:

The discharge is not located on a 303d listed stream segment. Juniata River is impaired due to siltation from unknown source. No action is warranted at this time.

5.8 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

5.9 Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	19	30	XXX	25	40	50	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	23	34	XXX	30	45	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
UV Intensity (µw/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	Calculation

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

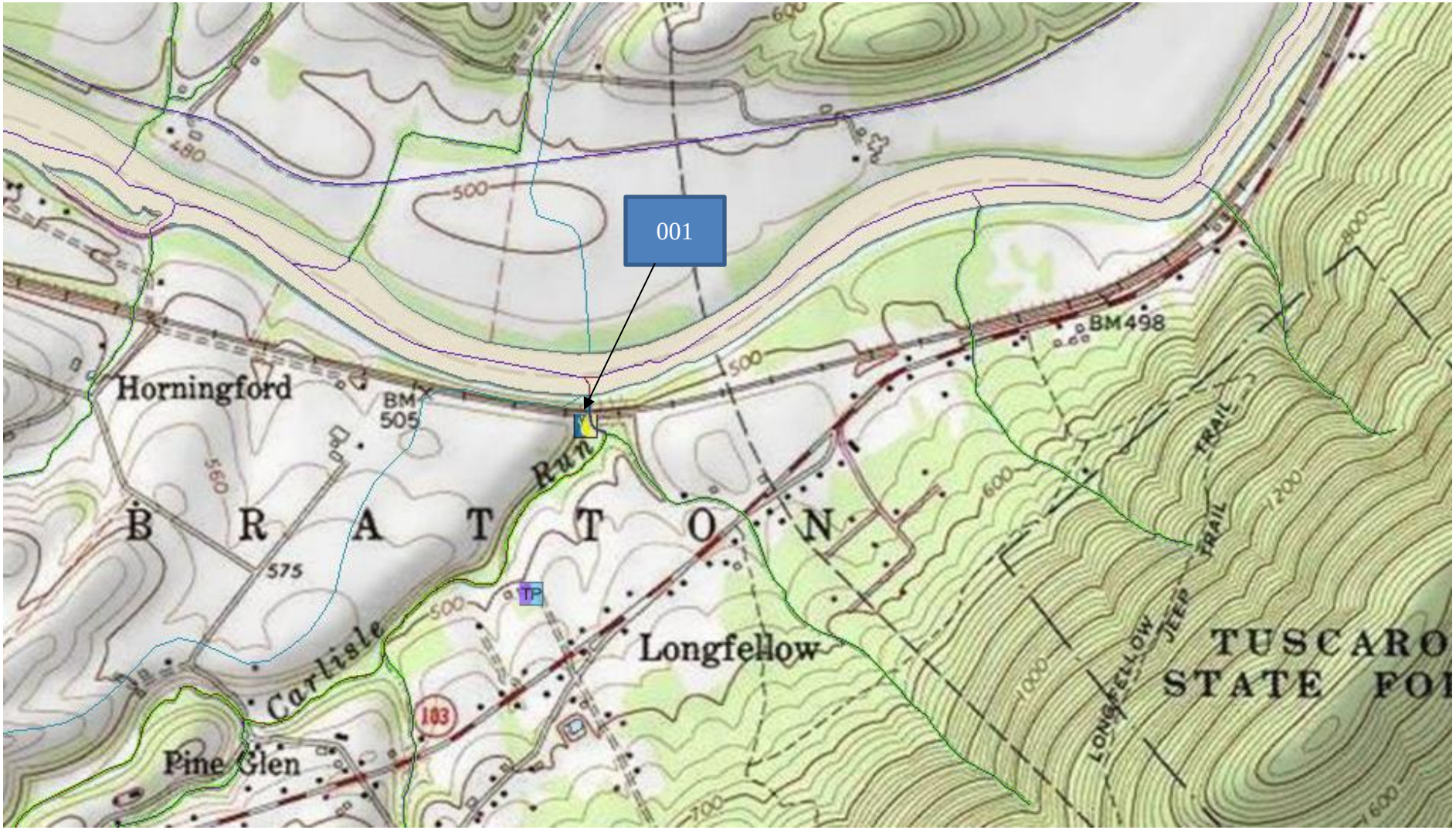
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
TKN	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	8-Hr Composite

Compliance Sampling Location: At Outfall 001

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☐	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: Establishing effluent limitation for individual sewage permit
☐	Other:

Attachments

A. Topographical Map



B. WQM Model Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
12B	11414	JUNIATA RIVER

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)
58.750	Bratton Townshi	PA0088617	0.090	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

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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
12B	11414	JUNIATA RIVER	**58.750**	480.00	2480.00	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	0.097	0.00	80.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Bratton Townshi	PA0088617	0.0900	0.0900	0.0900	0.000	25.00	6.90

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

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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
12B	11414	JUNIATA RIVER	**46.300**	460.00	2500.00	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	0.097	0.00	80.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Granville Twp	PA0032051	0.7500	0.7500	0.7500	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0088617

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
12B	11414	JUNIATA RIVER

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												
58.750	80.00	0.00	80.00	.1392	0.00030	1.189	181.67	152.76	0.37	2.051	20.01	7.00
Q1-10 Flow												
58.750	51.20	0.00	51.20	.1392	0.00030	NA	NA	NA	0.29	2.632	20.01	7.00
Q30-10 Flow												
58.750	108.80	0.00	108.80	.1392	0.00030	NA	NA	NA	0.44	1.727	20.01	7.00

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WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
12B	11414	JUNIATA RIVER

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
58.750	Bratton Townshi	9.67	50	9.67	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
58.750	Bratton Townshi	1.92	25	1.92	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)		
58.75	Bratton Townshi	25	25	25	25	5	5	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
12B	11414	JUNIATA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
58.750	0.090	20.009	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
181.675	1.189	152.763	0.371
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.04	0.010	0.04	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.237	0.527	Tsivoglou	6
Reach Travel Time (days)			
2.051			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.205	2.04	0.04	8.24
0.410	2.03	0.03	8.24
0.615	2.03	0.03	8.24
0.820	2.02	0.02	8.24
1.026	2.02	0.02	8.24
1.231	2.02	0.02	8.24
1.436	2.01	0.02	8.24
1.641	2.01	0.01	8.24
1.846	2.00	0.01	8.24
2.051	2.00	0.01	8.24