

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0080900
APS ID 275137
Authorization ID 1215334

Applicant and Facility Information

Applicant Name	<u>Berrysburg Municipal Authority</u>	Facility Name	<u>Berrysburg STP</u>
Applicant Address	<u>PO Box 183</u> <u>Berrysburg, PA 17005-0183</u>	Facility Address	<u>North Chestnut Street</u> <u>Berrysburg, PA 17005</u>
Applicant Contact	<u>Kent Zimmerman</u>	Facility Contact	<u>Brian Strait</u>
Applicant Phone	<u>(717) 362-4368</u>	Facility Phone	<u></u>
Client ID	<u>64225</u>	Site ID	<u>451875</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Berrysburg Borough</u>
Connection Status	<u>No Limitations</u>	County	<u>Dauphin</u>
Date Application Received	<u>January 3, 2018</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>February 1, 2018</u>	If No, Reason	<u></u>
Purpose of Application	<u>Permit renewal for discharge of treated sewage</u>		

Summary of Review

1.0 General Discussion

This factsheet supports the renewal of an existing NPDES permit for a discharge of treated domestic sewage from a municipal wastewater treatment plant that serves Berrysburg Borough. This facility discharges effluent to a stream that is considered dry at the point of discharge. The design capacity of the plant is 0.035MGD. The previous protection report indicates that the existing limits were developed following 1987 "Implementation Guide for Evaluating Wastewater Discharges to Drainage Swales and Ditches" The guidance document has been revised three times (August 1997, March 2003, and April 12, 2008) since development of the original permit limits. However, the revised guidance is applicable to new and expanding discharges and existing facilities causing impairments. This facility is not subject to the revised requirements since no expansion is proposed for this renewal and the discharge is not impacting negatively on the receiving creek and the surrounding wells. The existing limits will remain in the permit if water quality analysis confirmed their adequacy to protect water quality and uses at the point of first use. Treated sewage is discharged to Unnamed Tributary of Wiconisco Creek (WWF) which is designated for warm water fishes (WWF) and Migratory Fishes (MF). The existing NPDES permit was issued on July 30, 2013 with an effective date of August 1, 2013 and expiration date of July 31, 2018. The applicant submitted permit renewal application to the Department on January 3, 2018. The permittee is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application.

A topographical map showing discharge location is presented in attachment A

Approve	Deny	Signatures	Date
X		J. Pascal Kwedza, P.E. / Environmental Engineer	September 9, 2019
X		Daniel W. Martin, P.E. / Environmental Engineer Manager	September 17, 2019
X		Maria D. Bebenek, P.E. / Program Manager	September 17, 2019

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

- Semi Annual monitoring for Total nitrogen species and Total Phosphorus will replace annual monitoring to collect adequate data for the Chesapeake Bay Program.
- Required sample type has been changed to 24-hour composite for consistency with sampling equipment.
- Ammonia limit is slightly more stringent
- Daily UV intensity monitoring has been added

1.3 Existing Permit Limits and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Max	Min	Average Monthly	Weekly Average	Instant. Max		
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
UV Intensity (µw/cm ²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
CBOD5	4.3	6.5 Wkly Avg	XXX	15	22.5	30	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids	4.3	6.5 Wkly Avg	XXX	15	22.5	30	2/month	8-Hr Composite
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
Ammonia-Nitrogen May 1- Oct 31	1.1	XXX	XXX	2.5	XXX	5.0	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	3.5	XXX	XXX	7.5	XXX	15	2/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report AnnI Avg	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	XXX	XXX	Report AnnI Avg	XXX	XXX	1/year	8-Hr Composite

1.4 Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.035</u>
Latitude	<u>40° 35' 59.14"</u>	Longitude	<u>-76° 48' 55.26"</u>
Quad Name	<u>Elizabethville</u>	Quad Code	<u>1431</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Unnamed Tributary of Wiconisco Creek (WWF)</u>	Stream Code	<u>16979</u>
NHD Com ID	<u>54972531</u>	RMI	<u>0.70</u>
Drainage Area	<u>0.1 & 0.13 @POFU</u>	Yield (cfs/mi ²)	<u>0.0389</u>
Q ₇₋₁₀ Flow (cfs)	<u>0 & 0.005@POFU</u>	Q ₇₋₁₀ Basis	<u>USGS Gage Station</u>
Elevation (ft)	<u>690</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>6-C</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>		<u></u>
Temperature (°F)	<u></u>		<u></u>
Hardness (mg/L)	<u></u>		<u></u>
Other:	<u></u>		<u></u>
Nearest Downstream Public Water Supply Intake	<u>Suez Water PA</u>		
PWS Waters	<u>Susquehanna River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u>>45</u>

Changes Since Last Permit Issuance:

1.4.1 Water Supply Intake

The nearest downstream water supply intake is approximately 45 miles downstream by Suez Water PA on Susquehanna River in Susquehanna Township, Dauphin County. No impact is expected from this discharge on the intake.

2.0 Treatment Facility Summary				
Treatment Facility Name: Berrysburg STP				
WQM Permit No.		Issuance Date		
2282406 A-4		2/28/2019		
2282406 A-3		9/22/2015		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	SBR	Ultraviolet	0.035
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.035	58	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: A new continuous flow SBR treatment system was installed to replace the existing extended aeration system

2.1 Treatment Facility

The plant consists of a headworks with mechanical fine screen and a bypass bar screen, a distribution box, two continuous flow SBRs (4,446 ft³ each), two UV disinfection units rated for 218 gpm each, two aerobic digestion tanks, a sludge holding tank, and a 6' diameter concrete manhole with effluent baffle for post aeration (currently under construction).

2.2 Chemicals

- Caustic Soda alkalinity adjustment as needed
- Aluminum Sulfate to promote phosphorus precipitation and removal
- Acetic Acid as carbon source if needed

3.0 Compliance History

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

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.0144	0.015	0.018	0.0181	0.0206	0.0167	0.0182	0.019	0.0234	0.0153	0.0321	0.01224
Flow (MGD) Daily Maximum	0.0234	0.0227	0.0519	0.0485	0.0549	0.0259	0.045	0.045	0.0517	0.0554	0.0736	0.037
pH (S.U.) Minimum	7.16	7.12	7.03	6.9	6.83	6.79	6.7	7.02	7.03	7.08	7.25	7.06
pH (S.U.) Maximum	7.49	7.43	7.47	7.57	7.70	7.51	7.52	7.59	7.57	7.63	7.70	7.68
DO (mg/L) Minimum	2.09	1.36	2.62	2.53	1.81	2.14	2.45	2.36	2.78	2.73	2.76	2.44
CBOD5 (lbs/day) Average Monthly	0.4	0.6	0.4	0.7	0.9	2.0	0.5	0.4	0.4	1.0	1.0	0.5
CBOD5 (lbs/day) Weekly Average	0.4	0.7	0.5	1.0	0.9	3.0	0.5	0.5	0.5	2.0	1.0	0.7
CBOD5 (mg/L) Average Monthly	5.1	4.5	3.9	6.5	5.0	9.2	4.2	3.0	3.0	4.0	4	3
CBOD5 (mg/L) Weekly Average	7.2	5.5	4.7	9.9	6.9	15.0	4.3	3.0	3.0	5.0	5.0	3.0
BOD5 (lbs/day) Raw Sewage Influent Aver. Monthly	24	46	24	20	35	37	22.0	49	26	0.58	73	19
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	25	65	33	21	51	58	29.0	49	28	0.97	82	26
BOD5 (mg/L) Raw Sewage Influent Ave. Monthly	273	344	243	172	169	225	168	366	187	202	261	129
TSS (lbs/day) Average Monthly	0.6	0.9	0.8	1.0	1.0	2.0	1.0	0.3	0.7	1.0	1.0	0.5
TSS (lbs/day) Raw Sewage Influent Aver. Monthly	19	39	17	15	14	15	14.0	33	15	40	46	43
TSS (lbs/day) Raw Sewage Influent Daily Maximum	19	59	24	20	21	16	22.0	39	15	68	71	76
TSS (lbs/day) Weekly Average	0.7	1.0	1.0	2.0	2.0	2.0	2.0	0.5	0.9	2.0	1.0	0.7
TSS (mg/L) Average Monthly	6.8	7.0	7.0	10.8	6.0	10.0	9.0	1.9	< 5.0	5.0	< 3.8	3.03

**NPDES Permit Fact Sheet
South Londonderry Campbelltown East STP**

NPDES Permit No. PA0087700

TSS (mg/L) Raw Sewage Influent Ave. Monthly	314	296	186	129	65	95	110	258	105	128	165	226
TSS (mg/L) Weekly Average	8.5	8.0	8.0	16.5	7.0	13.0	15.0	2.8	< 5.0	5.0	< 5.0	3.05
Fecal Coliform (CFU/100 ml) Geometric Mean	< 15	< 2	< 2	< 2	5	< 2	< 2	< 2	< 2	10	20	14
Fecal Coliform (CFU/100 ml) Instant. Maximum	110	< 2	< 2	< 2	6	2	< 2	< 2	< 2	10	40	20
UV Intensity (µw/cm²) Minimum	5.1	5.6	5.6	2.4	2.0	1.7	1.9	2.3	2.3	2.7	3.7	4.1
Total Nitrogen (mg/L) Annual Average								90.36				
Ammonia (lbs/day) Average Monthly	< 0.04	< 0.40	0.03	0.2	0.5	3.0	0.04	0.02	0.6	0.30	0.07	0.08
Ammonia (mg/L) Average Monthly	0.34	0.32	< 0.3	1.82	2.19	19.3	0.304	0.171	0.676	0.9	0.264	0.5
Total Phosphorus (mg/L) Annual Average								22.15				

3.2 Effluent Violations for Outfall 001, from: August 1, 2018 To: June 30, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
DO	06/30/19	Min	1.36	mg/L	5.0	mg/L
DO	05/31/19	Min	2.62	mg/L	5.0	mg/L
DO	04/30/19	Min	2.53	mg/L	5.0	mg/L
DO	09/30/18	Min	2.76	mg/L	5.0	mg/L
DO	08/31/18	Min	2.44	mg/L	5.0	mg/L
DO	11/30/18	Min	2.78	mg/L	5.0	mg/L
DO	10/31/18	Min	2.73	mg/L	5.0	mg/L
DO	02/28/19	Min	2.14	mg/L	5.0	mg/L

**NPDES Permit Fact Sheet
South Londonderry Campbelltown East STP**

NPDES Permit No. PA0087700

DO	03/31/19	Min	1.81	mg/L	5.0	mg/L
DO	01/31/19	Min	2.45	mg/L	5.0	mg/L
DO	12/31/18	Min	2.36	mg/L	5.0	mg/L
Ammonia	02/28/19	Avg Mo	3.0	lbs/day	2.2	lbs/day
Ammonia	02/28/19	Avg Mo	19.3	mg/L	7.5	mg/L

Numerous effluent violations for DO were noted on DMRs during the past 12 months of operations as shown on the table above. The new SBR system does not have post aeration system and is unable to meet minimum DO limit consistently. The permittee is under a corrective action plan and received WQM permit approval on 2/28/2019 to install a post aeration system to address occurrence DO violations. Ammonia violation occurred in February 2019, but no reason was given for this effluent violation. The violation appears to be a one-time occurrence. The Department is waiting for installation of the post aeration to complete prior to assessing civil penalty for the violations. The violations need to be addressed satisfactorily prior to final permit issuance. The following paragraph will be added to the cover letter of the draft permit asking the permittee to address violations.

“According to DEP’s records, there are unresolved violation(s) at one or more facilities you own or operate. In accordance with DEP’s Clean Water Program standard operating procedures, an applicant’s compliance history is considered prior to making a final decision on any permit application. Please take the opportunity to address these violations during this draft comment period. DEP may not be able to issue a final permit until the violation(s) are resolved”

3.3 Summary of Inspections:

The new SBR treatment facility went online on February 16, 2018 and has been inspected 2 times. No effluent violation noted during plant inspections. Other than lack of post aeration which being addressed, no major issues noted during facility inspections. The facility is operated and maintained well.

4.0 Development of Effluent Limitations

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.035</u>
Latitude	<u>40° 35' 59.17"</u>	Longitude	<u>-76° 48' 55.53"</u>
Wastewater Description: <u>Sewage Effluent</u>			

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 is not applicable to this discharge

4.2 Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

$$\text{Mass based limit (lb/day)} = \text{concentration limit (mg/L)} \times \text{design flow (mgd)} \times 8.34$$

4.3 Water Quality-Based Limitations

The stream is a dry swale at the point of discharge. The point of first use (POFU) according to previous protection reports is located 600 feet downstream of the discharge point. Streamflows for the water quality analysis to protect the POFU were determined by correlating with the yield of USGS gauging station No. 0155500 on Mahantango. The Q₇₋₁₀ and drainage area at the gage is 6.38ft³/s and 164 mi² respectively. The resulting yields are as follows:

$$\begin{aligned} Q_{7-10} &= 6.38 \text{ cfs} / 164 \text{ sq. mi} = 0.0389\text{cfs/sq.mi} \\ Q_{30-10} / Q_{7-10} &= 1.47 \\ Q_{1-10} / Q_{7-10} &= 0.74 \end{aligned}$$

The drainage area at the POFU from previous protection report is 0.13 sq. mi.

The design flow at the POFU is calculated as:

$$Q_{7-10} = 0.04\text{cfs} \times 0.13 \text{ sq. mi} = 0.005\text{cfs}$$

4.3.1 NH₃N Calculations

NH₃N 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 NH₃N criteria used in the attached computer model of the stream:

- Discharge pH = 7.16 (DMR median July – Sept.)
- Discharge Temperature = 20.4 ° C (Summer avg from Inspection Report)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20 °C (Default)
- Background NH₃-N = 0.0 (default)

4.3.2 CBOD₅ & NH₃-N

The attached result of the WQM 7.0 stream model (attachment B) indicates that a limit of 25mg/ l CBOD₅ is adequate to protect the water quality of the stream at the POFU. This is slightly less stringent than the existing limit of 15mg/ l CBOD₅, therefore the existing limit will remain in the permit due to anti-backsliding. Past DMRs and inspection reports show the STP has been consistently achieving less than 15 mg/l CBOD₅.

The attached result of the WQM 7.0 stream model also indicates that a summer monthly average limit of 2.0mg/l for NH₃ is necessary to protect the aquatic life from toxicity effects at the POFU. This is slightly more stringent than the existing limit of 2.5mg/l. However, DMR and Inspection data indicate the facility can meet the new limit with operational adjustment. Therefore, a summer limit of 2.0mg/l is recommended for this renewal. Winter limit is three times the summer limit.

4.3.3 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.

4.3.4 Total Residual Chlorine:

The facility utilizes UV for disinfection, TRC limit is not required. Daily minimum UV light intensity reporting in μW/cm² is required. The operator confirmed the facility is capable of measuring UV light intensity.

4.3.5 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.

4.3.6 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, has been monitoring TP and TN annually but will be required to monitor Total Phosphorus, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Nitrogen semi-annually throughout the next permit cycle collect adequate data for future analysis.

4.3.7 Influent BOD and TSS Monitoring

The permit will include influent BOD5 and TSS monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements.

4.3.8 Pretreatment Requirements

The design annual average flow of the treatment plant is 0.035 MGD and the facility receives flow from no significant Industrial users. There is no approved pretreatment program for the facility, however, the permit contains standard conditions requiring the permittee to monitor and control industrial users if applicable.

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 Special Permit Conditions

The permit will contain the following special conditions:

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

5.4 Biosolids Management

Digested sludge is hauled out periodically by a license hauler.

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

5.6 Class A Wild Trout Fisheries

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

5.7 303d Listed Streams:

TMDL was approved for portions of Wiconisco creek its tributaries; however, this discharge is not located on the affected stream segment. No further action will be required.

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.

6.0 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 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	4.3	6.5	XXX	15.0	22.5	30	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	4.3	6.5	XXX	15.0	22.5	30	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
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	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	Calculation
Ammonia Nov 1 - Apr 30	1.75	XXX	XXX	6.0	XXX	12	2/month	24-Hr Composite

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

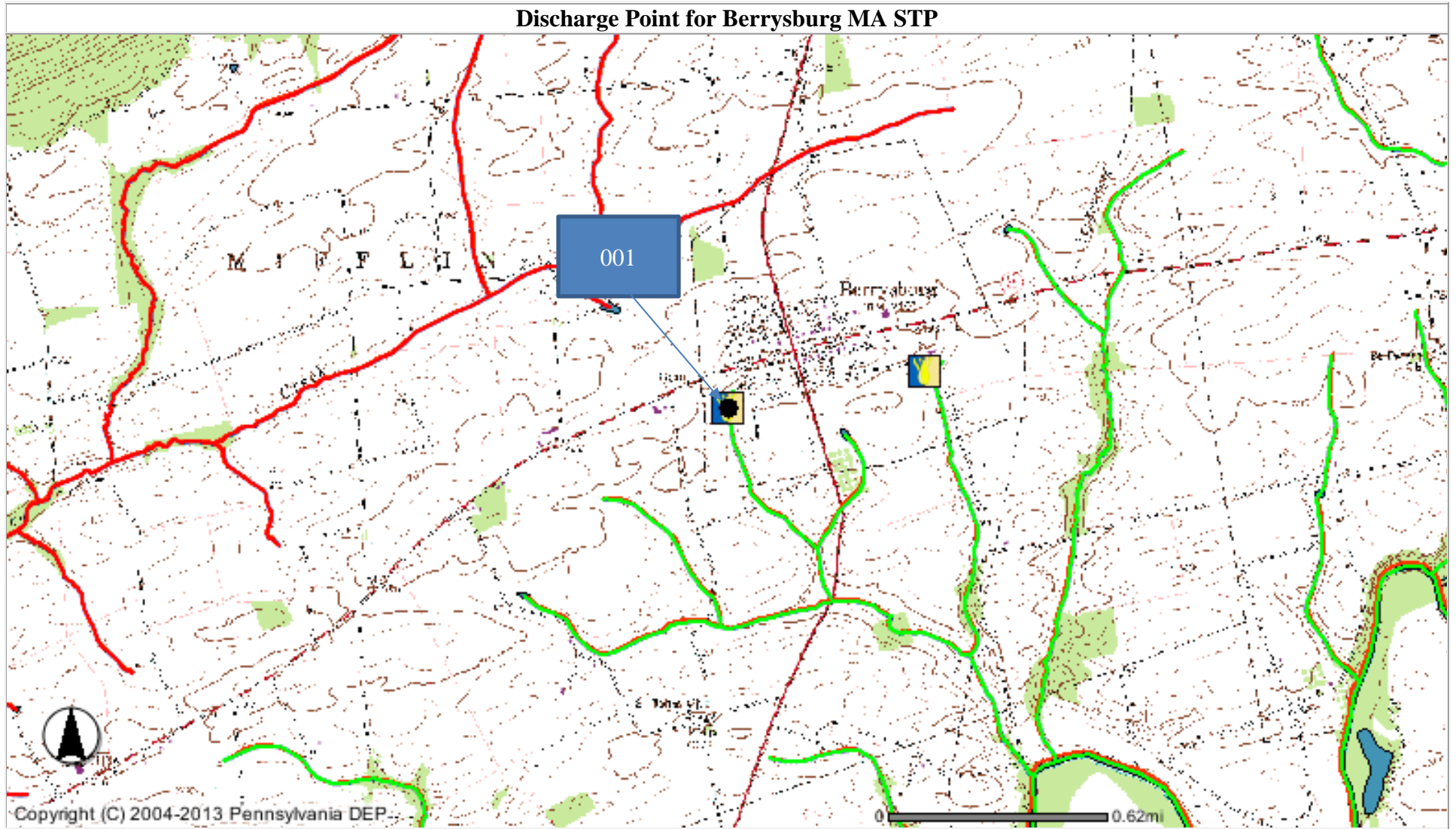
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia May 1 - Oct 31	0.58	XXX	XXX	2.0	XXX	4	2/month	24-Hr Composite
TKN	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite

Compliance Sampling Location: Outfall 001

7.0 Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment C)
<input type="checkbox"/>	PENTOXSD for Windows Model (see Attachment)
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	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.
<input checked="" type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input checked="" type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	Other:
<input type="checkbox"/>	Other:

7. Attachments

A. Topographical Maps



B. WQM Model

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
06C		16979		Trib 16979 of Wiconisco 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)
0.700	Berrysburg PA	PA0080900	0.035	CBOD5	25		
				NH3-N	2.02	4.04	
				Dissolved Oxygen			5

Permit No. PA0080900

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
06C	16979	Trib 16979 of Wiconisco Creek	0.700	690.00	0.13	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.040	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Berrysburg PA	PA0080900	0.0350	0.0000	0.0000	0.000	20.00	7.16

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. PA0080900

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
06C	16979	Trib 16979 of Wiconisco Creek	0.200	682.00	0.17	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	pH	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.040	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data							
Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	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. PA0080900

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
06C		16979				Trib 16979 of Wiconisco Creek						
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
0.700	0.01	0.00	0.01	.0541	0.00303	.358	2.55	7.13	0.06	0.471	20.00	7.14
Q1-10 Flow												
0.700	0.00	0.00	0.00	.0541	0.00303	NA	NA	NA	0.06	0.477	20.00	7.15
Q30-10 Flow												
0.700	0.01	0.00	0.01	.0541	0.00303	NA	NA	NA	0.07	0.460	20.00	7.14

Permit No. PA0080900

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.74	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.47	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

Permit No. PA0080900

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
06C	16979	Trib 16979 of Wiconisco 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
0.700	Berrysburg PA	8.64	9.25	8.64	9.25	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
0.700	Berrysburg PA	1.77	2.02	1.77	2.02	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.70	Berrysburg PA	25	25	2.02	2.02	5	5	0	0

Permit No. PA0080900

WQM 7.0 D.O. Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
06C	16979	Trib 16979 of Wiconisco Creek		
<hr/>				
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
0.700	0.035	20.000	7.143	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
2.553	0.358	7.129	0.065	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
22.98	1.483	1.84	0.700	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
5.284	23.221	Owens	5	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.471	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.047	21.43	1.78	6.29
	0.094	19.99	1.72	6.73
	0.141	18.64	1.67	6.97
	0.188	17.38	1.61	7.13
	0.235	16.21	1.56	7.27
	0.282	15.12	1.51	7.39
	0.329	14.10	1.46	7.51
	0.377	13.15	1.42	7.61
	0.424	12.26	1.37	7.71
	0.471	11.43	1.33	7.80