

Application Type Renewal  
 Facility Type Municipal  
 Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0029106  
 APS ID 276476  
 Authorization ID 1352982

**Applicant and Facility Information**

Applicant Name	<u>Greenfield Township Municipal Authority Blair County</u>	Facility Name	<u>Greenfield Township STP</u>
Applicant Address	<u>PO Box 372</u> <u>Claysburg, PA 16625-0372</u>	Facility Address	<u>1342 Bedford Street</u> <u>Claysburg, PA 16625-0372</u>
Applicant Contact	<u>Timothy Oakes</u>	Facility Contact	<u>Timothy Oakes</u>
Applicant Phone	<u>(814) 239-5778</u>	Facility Phone	<u>(814) 239-5778</u>
Client ID	<u>51251</u>	Site ID	<u>451960</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Greenfield Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Blair</u>
Date Application Received	<u>May 3, 2021</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u>May 12, 2021</u>	If No, Reason	<u>Significant CB Discharge</u>
Purpose of Application	<u>This is an application for NPDES renewal.</u>		

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	July 22, 2021
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for Daniel W. Martin	July 23, 2021
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	July 23, 2021

### Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Greenfield Township STP located at 1342 Bedford Street, Claysburg, PA 16625 in Blair County, municipality of Greenfield Township. The existing permit became effective on November 1, 2016 and expired on October 31, 2021. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on May 5, 2021.

The purpose of this Fact Sheet is to present the basis of information used for establishing the proposed NPDES permit effluent limitations. The Fact Sheet includes a description of the facility, a description of the facility's receiving waters, a description of the facility's receiving waters attainment/non-attainment assessment status, and a description of any changes to the proposed monitoring/sampling frequency. Section 6 provides the justification for the proposed NPDES effluent limits derived from technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), total maximum daily loading (TMDL), antidegradation, anti-backsliding, and/or whole effluent toxicity (WET). A brief summary of the outlined descriptions has been included in the Summary of Review section.

The subject facility is a 0.8 MGD average annual flow treatment facility. The hydraulic design capacity is 1.5 MGD. The applicant does not anticipate any proposed upgrades to the treatment facility in the next five years. The NPDES application has been processed as a Minor Sewage Facility (Level 2) due to the type of sewage and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to Bedford County Commissioners, Blair County Commissioners, Greenfield Township Supervisors, and Pavia Township Supervisors and the notice was received by the parties in April 2021. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be the Frankstown Branch Juniata River. The sequence of receiving streams that the Frankstown Branch Juniata River discharges into are the Juniata River and the Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for trout stocking fish (TSF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Frankstown Branch Juniata River is a Category 2 stream listed in the 2020 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- **Due to the triennial review, E. Coli shall be monitored on a 1x/quarter basis.**

Sludge use and disposal description and location(s): Sewage sludge disposed at Mostoller Landfill in Somerset County

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. 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.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.

**1.0 Applicant**

**1.1 General Information**

This fact sheet summarizes PA Department of Environmental Protection's review for the NPDES renewal for the following subject facility.

Facility Name: Greenfield Township MA  
NPDES Permit # PA0029106  
Physical Address: 1342 Bedford Street  
Claysburg, PA 16625  
Mailing Address: PO Box 372  
Claysburg, PA 16625  
Contact: Timothy Oakes  
Wastewater Department Manager  
gtma@atlanticbb.net  
Consultant: Tobias Nagle  
Stiffler-McGraw and Associates  
[tnagle@stiffler-mcgraw.com](mailto:tnagle@stiffler-mcgraw.com)  
814-696-6280

**1.2 Permit History**

Description of Facility

The treatment facility was originally constructed in 1973 and was renovated in 1998. The current SBR plant began receiving flow in November 1998.

Permit submittal included the following information.

- NPDES Application
- Process Flow Description
- Commercial and Industrial User List

**2.0 Treatment Facility Summary**

**2.1.1 Site location**

The physical address for the facility is 1342 Bedford Street, Claysburg, PA 16625. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

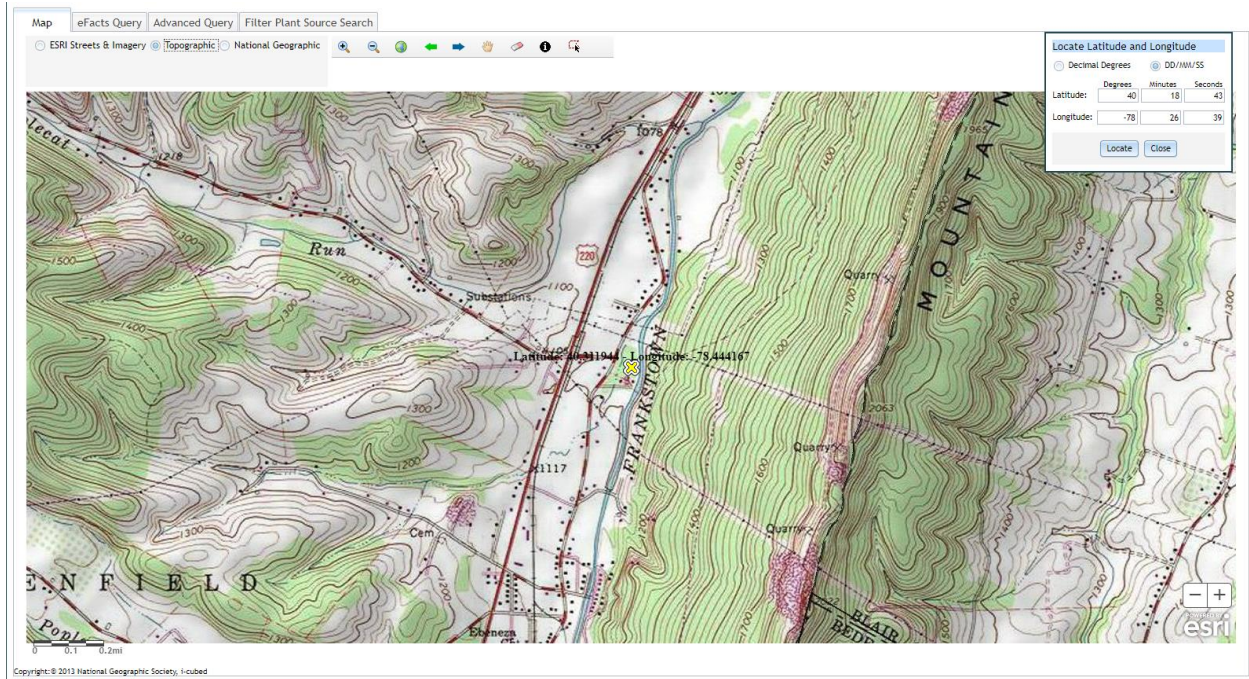
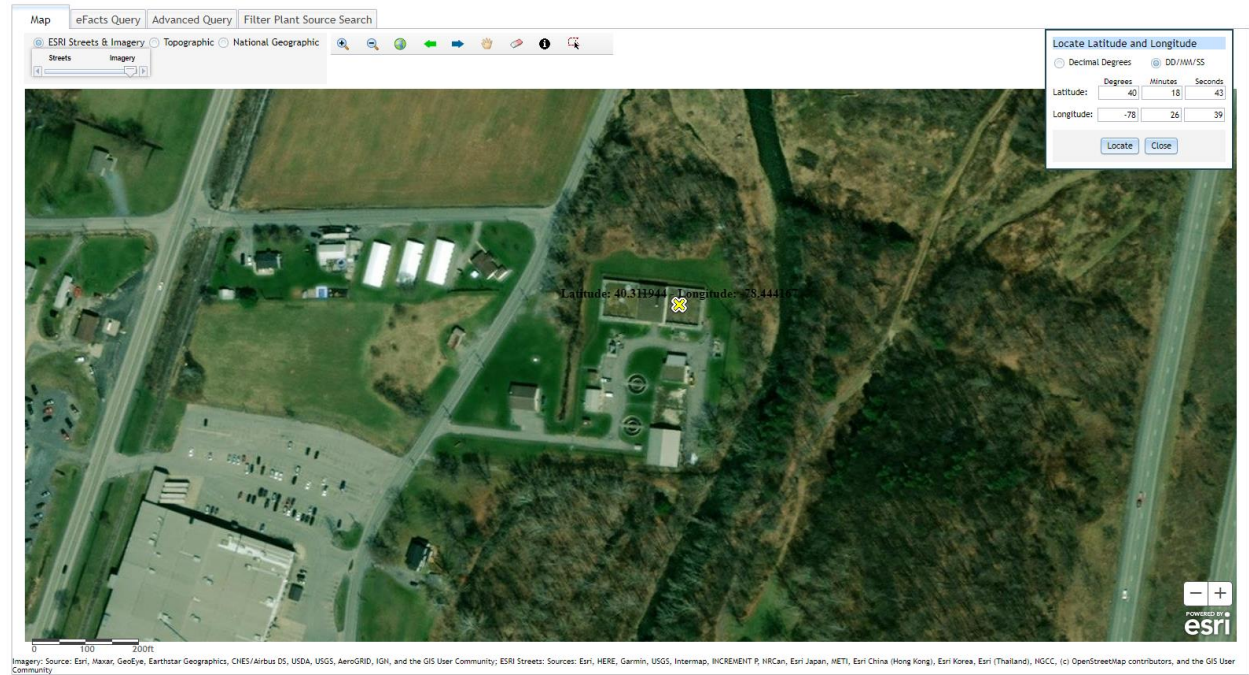


Figure 2: Aerial Photograph of the subject facility



**2.1.2 Sources of Wastewater/Stormwater**

The facility receives wastewater contributions from the following municipalities:

Greenfield Township – 99%

Pavia Township (Blue Knob Ski Chalets) – 1%

The facility receives industrial/commercial wastewater contributions. See the attached table.

The applicant does not have pretreatment requirements.

JANUARY 2020- DECEMBER 2020

GTMA COMMERCIAL USAGE January 2020- December 2020				
Account Name	Account #	Service Street Name	Usage	Avg. Usage
PAUL C & ELIZABETH A MCCABE	009200-0	BEDFORD STREET	20,700	1,725
MCCABE GROUP INC.	009500-0	BEDFORD STREET	23,000	1,917
MCCABE GROUP INC.	009600-0	BEDFORD STREET	36,400	3,033
HARRY E MILLER	009700-0	BEDFORD STREET	18,300	1,525
CLAYSBURG POST OFFICE	009800-0	BEDFORD STREET	7,600	633
SHEETZ CONVENIENCE STORE	017400A-0	BEDFORD STREET	580,400	48,367
SHEETZ CONVENIENCE STORE	017400B-0	BEDFORD STREET (CAR WASH)	963,000	80,250
SHEETZ CONVENIENCE STORE	017400C-0	BEDFORD STREET (IRRIGATION)	639,200	53,267
SHEETZ CORPORATE OFFICE	017403C-0	SHEETZ WAY	784,600	65,383
SHEETZ SWELLNESS CENTER	017407-0	SHEETZ WAY	99,000	8,250
SHEETZ, INC.	017408-0	TWP ROAD 308	100,300	8,358
NPC, INC.	018801-0	BEDFORD STREET	809,700	67,475
CORNERSTONE PCH	020400-1	BEDFORD STREET	359,500	29,958
DAVID COX	021601-0	BEDFORD STREET	0	0
SHENANIGAN'S BAR	022501-1	BEDFORD STREET	40,100	3,342
CENTURYLINK	023600-0	BEDFORD STREET	5,400	450
JOYCE DURBIN	023702-0	BEDFORD STREET	1,500	125
FRANK T BLAZEVICH	027800-0	BEDFORD STREET	99,400	8,283
J. TODD GOOD	028800-1	BEDFORD STREET	9,400	783
TINA MOORE	030015-1	MANSION DRIVE	20,500	1,708
TINA MOORE	030016-1	MANSION DRIVE	100	8
EVERETT RAILROAD	031200-0	CHURCH STREET	12,000	1,000
JACKIE N WYLAND	032501-0	LOCUST STREET	17,000	1,417
SERVICE STATION WHETSTONE'S	032900-0	DUNNINGS HIGHWAY	54,400	4,533
C&S FAMILY MARKETS	032901-0	DUNNINGS HIGHWAY	186,000	15,500
HOMETOWN BANK	032901A-0	DUNNINGS HWY	7	1
DICKS PHARMACY	032904-0	DUNNINGS HIGHWAY	1,500	150
RBZ PROPERTIES LLC	032904-1	DUNNINGS HIGHWAY	1,400	700
CLAYSBURG FIRE HALL	032904A-0	DUNNINGS HIGHWAY	20,700	1,725
ZEIGLER CHEVROLET-OLDS.	033000-0	DUNNINGS HIGHWAY	181,500	15,125
LAURA MOWRY	035200-0	CLIPPER DRIVE	29,100	2,425
CLAYSBURG MINIT MART	044001-0	ROUTE 220	842,300	70,192
B & C AUTO & TRUCK SALES, INC	052500A-0	DUNNINGS HIGHWAY	4,900	408
220 AUTO PARTS	052600-0	DUNNINGS HIGHWAY	14,700	1,225
PEGGY'S DINER	052700-0	DUNNINGS HIGHWAY	248,400	20,700
NELSON'S RENTALS, LLC	052800-0	SYCAMORE LANE-B&C AUTO	3,400	283
BRADY'S	052900-0	DUNNINGS HIGHWAY	10,200	850
FIRST COMMONWEALTH BANK	053001-0	SKI GAP ROAD	0	0
FIRST COMMONWEALTH BANK	053100-0	SKI GAP ROAD	18,700	1,558
SHIRLEY'S COOKIES COMPANY	053101B-0	WARD DRIVE	72,000	6,000
NASON PHYSICIANS GROUP/CLAYSBURG	053201-0	WARD DRIVE	3,900	325
NILCO	053202-0	WARD DRIVE	42,000	3,500
NILCO	053202A-0	WARD DRIVE	6,400	533
DIXON ELECTRIC INC.	053300-0	WARD DRIVE	115,000	9,583
NPC	053400-0	ROUTE 220	191,300	15,942
NPC	053401-0	ROUTE 220	792,000	66,000
A & M TRANSIT COMPANY	053500-0	PARK ROAD	10,400	867
CHAMPION HOME BUILDERS IN	053700-0	CHAMPION DRIVE	3,161,000	263,417
JOSEPH RUSSO JR	054000-0	CHAMPION DRIVE	186,300	15,525
MILE LEVEL PHYSICAL THERAPY	054701-0	RANCH HOUSE PLAZA	25,800	2,150
RANCH HOUSE	054701A-0	RANCH HOUSE PLAZA	4,300	358
DENNIS LEONARD	054701B-0	RANCH HOUSE PLAZA	64,000	5,333
RANCH HOUSE PLAZA	054701C-0	RANCH HOUSE PLAZA	8,900	742
BARNES PETROLEUM	054704-0	DUNNINGS HWY	6,100	508
DOLLAR GENERAL	054704A-0	DUNNINGS HIGHWAY	28,100	2,342

DENNIS BURKET - CARPET DEPOT	054706-0	DUNNINGS HWY SUITE 3	10,700	892
DENNIS BURKET-DANCE STUDIO	054706A-0	DUNNINGS HWY SUITE 2	2,500	208
DENNIS BURKET-RESTAURANT	054706B-0	DUNNINGS HWY SUITE 1	100	25
DENNIS BURKET-RESTAURANT	054706B-0	DUNNINGS HWY SUITE 1	61,100	7,638
ROBERT ALBRIGHT	054900-0	BUSINESS RTE. 220	309,200	25,767
LORI S CLAAR	055000-0	DUNNINGS HWY	9,200	767
CLAARS GARAGE INC.	055001-0	DUNNINGS HWY	0	0
JODY, KAREN & CAROLYN CLAAR	055002-1	ROUTE 220	98,200	8,183
CLAAR, JODY	055003-1	ROUTE 220 - OLD DOLLAR GENERAL STOR	12,700	1,058
CLAARS GARAGE INC.	055003A-0	DUNNINGS HIGHWAY	130,600	10,883
SAMIJER LLC	056500-0	DUNNINGS HIGHWAY	327,700	27,308
CHRISTINE CLAAR	057300-0	EVERGREEN ROAD	8,700	725
STEVE BURKET CAR SALES	075400-0	LOWER POLECAT ROAD	15,000	1,250
FLOWER CONNECTION	075401-0	LOWER POLECAT ROAD	3,400	283
J.H. RUSSELL INC.	081401-0	RUSSELL DRIVE	43,400	3,617
			12,014,307	
<b>INDUSTRIAL</b>				
SHEETZ, INC.	017404-0	SHEETZ WAY	2,064,300	206,430
SHEETZ, INC.	017404-0	SHEETZ WAY	436,400	218,200
SHEETZ DISTRIBUTION SERV.	017405-0	TWP ROAD 308	1,907,700	158,975
SHEETZ BROTHERS KITCHEN	017406-0	SHEETZ WAY	11,892,000	991,000
SHEETZ INC	017409-0	TWP ROAD 308	163,200	13,600
SHIRLEY'S COOKIE COMPANY	053101-0	WARD DRIVE	1,777,400	148,117
SHIRLEY'S COOKIE COMPANY	053101A-0	WARD DRIVE	56,400	4,700
NATIONAL IMPRINT	053200-0	WARD DRIVE	199,200	16,600
			18,496,600	

## 2.2 Description of Wastewater Treatment Process

The subject facility is a 0.8 MGD design flow facility. The subject facility treats wastewater using a SBR(s) and UV disinfection prior to discharge through the outfall. The facility is being evaluated for flow, pH, DO, CBOD5, TSS, fecal coliform, ultraviolet, ammonia-nitrogen, and copper. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary				
<b>Treatment Facility Name:</b> Greenfield Township Municipal Authority STP				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.8
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.5	1735	Not Overloaded	Aerobic Digestion	Combination of methods

**2.3 Facility Outfall Information**

The facility has the following outfall information for wastewater.

<b>Outfall No.</b>	001	<b>Design Flow (MGD)</b>	.8
<b>Latitude</b>	40° 18' 41.00"	<b>Longitude</b>	-78° 26' 36.89"
<b>Wastewater Description:</b> Effluent			

**2.3.1 Operational Considerations- Chemical Additives**

Chemical additives are chemical products introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Chemicals excluded are those used for neutralization of waste streams, the production of goods, and treatment of wastewater.

The subject facility utilizes the following chemicals as part of their treatment process.

- Polymer Superfloc 281 for sludge dewatering aid.

**2.4 Existing NPDES Permits Limits**

The existing NPDES permit limits are summarized in the table.

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. A. For Outfall 001, Latitude 40° 18' 41.00", Longitude 78° 26' 36.89", River Mile Index 43.7, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River

Type of Effluent: Treated Effluent

1. The permittee is authorized to discharge during the period from **November 1, 2016** through **October 31, 2021**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)			Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type	
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average			Instant. Maximum
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	167	267	XXX	25.0	40.0	50	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	133	200	XXX	20.0	30.0	40	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	200	300	XXX	30.0	45.0	60	1/week	24-Hr Composite
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab



Outfall 001, Continued (from November 1, 2016 through October 31, 2021)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	110	XXX	XXX	16.5	XXX	33	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	37	XXX	XXX	5.5	XXX	11	2/week	24-Hr Composite
Copper, Total <sup>(4)</sup> Nov 1, 2016 to Oct 31, 2019	Report	XXX	XXX	Report	XXX	Report	1/week	24-Hr Composite
Copper, Total <sup>(4)</sup> Nov 1, 2019 to Oct 31, 2021	0.28	XXX	XXX	0.042	XXX	0.084	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. B. For Outfall 001, Latitude 40° 18' 41.00", Longitude 78° 28' 36.89", River Mile Index 43.7, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River

Type of Effluent: Treated Effluent

1. The permittee is authorized to discharge during the period from **November 1, 2016** through **October 31, 2021**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation 24-Hr Composite
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	14.612	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1.048	XXX	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Footnotes:

- (1) See Part C for Chesapeake Bay Requirements.
- (2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

### **3.0 Facility NPDES Compliance History**

#### **3.1 Summary of Inspections**

A summary of the most recent inspections during the existing permit review cycle is as follows.

The DEP inspector noted the following during the inspection.

05/22/2017:

- The sludge drying beds were no longer in use and will be removed.
- The influent sampler thermometer was above 20 C.
- SCADA system was upgraded to allow for remote viewing and control.

07/19/2018:

- A large amount of fine solids and floating sludge was noticed in the old chlorine contact tank during the SBR decant. The tank walls also showed a buildup of solids. The facility was advised the tank should be cleaned out more often to prevent solids from discharging to the stream.
- The influent sampler refrigerator was out of service. The new unit was scheduled for delivery tomorrow. This was the 2<sup>nd</sup> time the refrigerator had been replaced in the last year. The facility suspects that there was corroding gas in the building where the unit was stored. After the refrigerator is replaced, it will be moved outdoors.

08/28/2019:

- The influent sampler refrigerator had a temperature reading of 11 C. The temperature should be lowered to around 4 C.
- The facility was preparing to decommission the old sand bed filter. The beds will be demolished and covered with soil or converted into a garage.

12/29/2020: DEP conducted an administrative review of the facility's Chesapeake Bay reporting. The facility generated credits for both phosphorus and nitrogen but did not sell any credits. Based on the data submitted, the facility has achieved compliance with the nitrogen and phosphorus loading limits for the 2019-2020 monitoring year.

01/04/2021: DEP received a complaint from a resident in Claysburg, PA on a discharge of raw sewage from a manhole on December 29, 2020. The resident reported seeing raw sewage overflowing from a manhole on Locust street. The overflow occurred during a recent rain storm and ceased after the rain.

On December 30, 2020, DEP contacted the facility and notified them about the complaint. The facility stated that the area has caused problems in the past since there is not much of a grade and grease tends to build up on the pipe walls. The facility stated they would use a jetter truck to clear the line if necessary.

On the afternoon of December 30, 2020, a resident complained that the manhole was overflowing again. The facility was contacted again to jet the line again. The facility thinks that fryer from a local market is causing a build up in the collection system. The wastewater operator was unsure if the township has a local ordinance. The facility was instructed that if the grease is not abated the township will need to perform a more routine jetting to prevent future overflows.

**3.2 Summary of DMR Data**

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.73 MGD in January 2021. The design capacity of the treatment system is 1.50 MGD.

The off-site laboratory used for the analysis of the parameters was Fairway Laboratories, 2019 9<sup>th</sup> Avenue, Altoona, PA 16602.

**NPDES Permit Fact Sheet  
Greenfield Township STP**

**NPDES Permit No. PA0029106**

**DMR Data for Outfall 001 (from June 1, 2020 to May 31, 2021)**

<b>Parameter</b>	<b>MAY-21</b>	<b>APR-21</b>	<b>MAR-21</b>	<b>FEB-21</b>	<b>JAN-21</b>	<b>DEC-20</b>	<b>NOV-20</b>	<b>OCT-20</b>	<b>SEP-20</b>	<b>AUG-20</b>	<b>JUL-20</b>	<b>JUN-20</b>
Flow (MGD) Average Monthly	0.684	0.539	0.626	0.681	0.73	0.72	0.682	0.507	0.378	0.329	0.258	0.201
Flow (MGD) Daily Maximum	0.98	0.78	0.97	1.12	0.98	1.12	1.16	1.261	0.50	0.5	0.42	0.27
pH (S.U.) Minimum	7.0	6.8	7.0	6.9	6.9	7.0	7.1	7.0	7.0	7.0	7.0	7.0
pH (S.U.) Maximum	7.2	7.1	7.2	7.2	7.1	7.2	7.3	7.2	7.2	7.2	7.2	7.2
DO (mg/L) Minimum	6.1	6.1	6.0	6.0	6.4	6.0	6.2	6.0	6.1	6.1	6.0	6.1
CBOD5 (lbs/day) Average Monthly	17.2	14.4	16.0	17.0	18.5	17.7	17.2	16.0	9.4	9.2	7.1	7.9
CBOD5 (lbs/day) Weekly Average	24.3	19.5	21.8	19.5	23.0	20.0	20.8	33.5	12.3	12.0	10.0	19.8
CBOD5 (mg/L) Average Monthly	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6	3.0	3.6	3.8	4.8
CBOD5 (mg/L) Weekly Average	3.0	3.0	3.0	3.0	3.0	3.0	3.0	9.6	3.0	4.7	6.3	11.9
BOD5 (lbs/day) Raw Sewage Influent   Average Monthly	199	463	237	350	583	985	598	343	252	131	124	99
BOD5 (lbs/day) Raw Sewage Influent   Daily Maximum	243	1242	359	555	1516	3283	1440	517	374	209	182	123
BOD5 (mg/L) Raw Sewage Influent   Average Monthly	35	83	45	63	99	159	95	102	76	50	65	62
TSS (lbs/day) Average Monthly	7.6	15.6	10.8	10.0	8.7	11.6	12.7	13.9	7.5	12.3	5.7	3.1
TSS (lbs/day) Raw Sewage Influent   Average Monthly	156	409	255	236	279	192	279	248	252	61	233	131

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TSS (lbs/day) Raw Sewage Influent   Daily Maximum	278	664	425	397	385	285	807	312	400	97	410	266
TSS (lbs/day) Weekly Average	12.9	26.0	17.6	12.8	15.3	21.9	15.2	24.1	9.8	17.9	7.9	6.4
TSS (mg/L) Average Monthly	1.4	3.2	2.0	1.8	1.4	2.1	2.2	4.2	2.5	4.8	3.2	1.9
TSS (mg/L) Raw Sewage Influent   Average Monthly	31	88	52	41	47	33	47	72	76	23	116	81
TSS (mg/L) Weekly Average	1.6	4.0	2.6	2.2	1.6	3.6	4.6	7.6	3.6	7.4	5.0	7.0
Fecal Coliform (CFU/100 ml) Geometric Mean	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
UV Transmittance (%) Minimum	94	95	97	94	95	97	98	95	95	97	97	98
Nitrate-Nitrite (mg/L) Average Monthly	1.7	2.1	1.8	2.1	1.5	2.3	2.3	0.1	3.5	2.1	2.0	2.0
Nitrate-Nitrite (lbs) Total Monthly	304	285	275	336	283	416	383	367	321	179	121	99
Total Nitrogen (mg/L) Average Monthly	2.2	2.6	2.3	2.6	2.1	4.24	3.3	3.8	4.0	2.8	2.5	2.9
Total Nitrogen (lbs) Effluent Net   Total Monthly	394	353	355	405	413	771	564	422	371	234	152	145
Total Nitrogen (lbs) Total Monthly	394	353	355	405	413	771	564	422	371	234	152	145
Total Nitrogen (lbs) Effluent Net   Total Annual									3703			
Total Nitrogen (lbs) Total Annual									3703			
Ammonia (lbs/day) Average Monthly	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.4	0.3	0.3	0.2	0.2

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Ammonia (mg/L) Average Monthly	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ammonia (lbs) Total Monthly	18	14	16	16	19	18	17	11	9	9.0	6	5
Ammonia (lbs) Total Annual									147			
TKN (mg/L) Average Monthly	0.5	0.5	0.5	0.5	0.6	1.96	1.0	0.5	0.5	0.7	0.5	0.9
TKN (lbs) Total Monthly	90	69	80	80	130	356	181	56	50	55	30	45
Total Phosphorus (mg/L) Average Monthly	0.17	0.15	0.1	0.17	0.13	0.36	0.19	0.49	0.48	0.94	0.51	0.45
Total Phosphorus (lbs) Effluent Net   Total Monthly	30	20	13	27	25	64	30	53	43	76	29	22
Total Phosphorus (lbs) Total Monthly	30	20	13	27	25	64	30	53	43	76	29	22
Total Phosphorus (lbs) Effluent Net   Total Annual										389		
Total Phosphorus (lbs) Total Annual										389		
Total Copper (lbs/day) Average Monthly	0.05	0.07	0.05	0.06	0.06	0.54	0.06	0.03	0.03	0.03	0.02	0.02
Total Copper (mg/L) Average Monthly	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.012

**3.2.1 Chesapeake Bay Cap Load Compliance**

The table below summarizes the facility’s compliance with the Chesapeake Bay truing.

<b>Chesapeake Bay Annual Nutrient Summary</b>				
<b>Greenfield Twp MA</b>				
<b>PA0029106</b>				
<b>Year for Truing Period (Oct 1 - Nov 28)</b>	<b>Net Effluent Limits</b>		<b>Compliant with Permit Limits (Yes/No)</b>	
	<b>Nitrogen (lbs)</b>	<b>Phosphorus (lbs)</b>	<b>Nitrogen</b>	<b>Phosphorus</b>
	<b>14,612</b>	<b>1,948</b>		
2018	5,984	694	Yes	Yes
2019	5,039	382	Yes	Yes
2020	3,703	389	Yes	Yes

**3.3 Non-Compliance**

**3.3.1 Non-Compliance- NPDES Effluent**

A summary of the non-compliance to the permit limits for the existing permit cycle is as follows.

From the DMR data beginning on November 1, 2016 to July 12, 2021, the following were observed effluent non-compliances.

**Summary of NPDES Non-Compliance with NPDES Permit Limits  
Beginning November 1, 2016 and Ending July 12, 2021**

<b>DATE</b>	<b>PARAMETER</b>	<b>SAMPLE VALUE</b>	<b>CONDITION</b>	<b>PERMIT VALUE</b>	<b>MEASURE</b>	<b>CODE</b>
01/28/2021	Copper, Total	0.54	>	0.28	lbs/day	Average Monthly

**3.3.2 Non-Compliance- Enforcement Actions**

A summary of the non-compliance enforcement actions for the current permit cycle is as follows:

Beginning on November 1, 2016 to July 12, 2021, there were no observed enforcement actions.

**3.4 Summary of Biosolids Disposal**

A summary of the biosolids disposed of from the facility is as follows.

2021			
Dewatered Sewage Sludge / Biosolids Production Information			
Dewatered Sewage Sludge/Biosolids			
Date (YEAR)	Tons Dewatered	% Solids	Dry Tons
January			
February			
March	46.54	13.4	6.24
April			
May	30.56	13.4	4.1
Notes:			
Sewage sludge disposed at Mostoller Landfill in Somerset Count			

**3.5 Open Violations**

No open violations existed as of July 2021.

**4.0 Receiving Waters and Water Supply Information Detail Summary**

**4.1 Receiving Waters**

The receiving waters has been determined to be the Frankstown Branch Juniata River. The sequence of receiving streams that the Frankstown Branch Juniata River discharges into are the Juniata River and the Susquehanna River which eventually drains into the Chesapeake Bay.

**4.2 Public Water Supply (PWS) Intake**

The closest PWS to the subject facility is Mifflintown MA (PWS ID #4340008) located approximately 109 miles downstream of the subject facility on the Juniata River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

**4.3 Class A Wild Trout Streams**

Class A Wild Trout Streams are waters that support a population of naturally produced trout of sufficient size and abundance to support long-term and rewarding sport fishery. DEP classifies these waters as high-quality coldwater fisheries.

The information obtained from EMAP suggests that no Class A Wild Trout Fishery will be impacted by this discharge.

**4.4 2020 Integrated List of All Waters (303d Listed Streams)**

Section 303(d) of the Clean Water Act requires States to list all impaired surface waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The 303(d) list includes the reason for impairment which may be one or more point sources (i.e. industrial or sewage discharges) or non-point sources (i.e. abandoned mine lands or agricultural runoff and the pollutant causing the impairment such as metals, pH, mercury or siltation).

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily



Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

The water quality status of Pennsylvania's waters uses a five-part categorization (lists) of waters per their attainment use status. The categories represent varying levels of attainment, ranging from Category 1, where all designated water uses are met to Category 5 where impairment by pollutants requires a TMDL for water quality protection.

**The receiving waters is listed in the 2020 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life. The designated use has been classified as protected waters for trout stocking fishes (WWF) and migratory fishes (MF).**

#### **4.5 Low Flow Stream Conditions**

Water quality modeling estimates are based upon conservative data inputs. The data are typically estimated using either a stream gauge or through USGS web based StreamStats program. The NPDES effluent limits are based upon the combined flows from both the stream and the facility discharge.

A conservative approach to estimate the impact of the facility discharge using values which minimize the total combined volume of the stream and the facility discharge. The volumetric flow rate for the stream is based upon the seven-day, 10-year low flow (Q710) which is the lowest estimated flow rate of the stream during a 7 consecutive day period that occurs once in 10 -year time period. The facility discharge is based upon a known design capacity of the subject facility.

The closest WQN station to the subject facility is the Frankstown Branch Juniata River station (WQN224). This WQN station is located approximately 27 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Frankstown Branch Juniata River (USGS station number 1556000). This gauge station is located approximately 25 miles downstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 7.84 and the stream water temperature was estimated to be 22.0 C.

The hardness of the stream was estimated from the water quality network to be 135 mg/l CaCO<sub>3</sub>.

The low flow yield and the Q710 for the subject facility was estimated as shown below.

Gauge Station Data		
USGS Station Number	1556000	
Station Name	Frankstown Branch Juniata River	
Q710	47.8	ft <sup>3</sup> /sec
Drainage Area (DA)	291	mi <sup>2</sup>
<b>Calculations</b>		
The low flow yield of the gauge station is:		
Low Flow Yield (LFY) = Q710 / DA		
LFY = ( 47.8 ft <sup>3</sup> /sec / 291 mi <sup>2</sup> )		
LFY =	0.1643	ft <sup>3</sup> /sec/mi <sup>2</sup>
The low flow at the subject site is based upon the DA of		
	37.1	mi <sup>2</sup>
Q710 = (LFY@gauge station)(DA@Subject Site)		
Q710 = (0.1643 ft <sup>3</sup> /sec/mi <sup>2</sup> )(37.1 mi <sup>2</sup> )		
Q710 =	6.094	ft <sup>3</sup> /sec

**4.6 Summary of Discharge, Receiving Waters and Water Supply Information**

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.8</u>
Latitude	<u>40° 18' 42.08"</u>	Longitude	<u>-78° 26' 37.04"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Effluent</u>			

Receiving Waters	<u>Frankstown Branch Juniata River (TSF)</u>	Stream Code	<u>16061</u>
NHD Com ID	<u>65610466</u>	RMI	<u>45</u>
Drainage Area	<u>37.1</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.1643</u>
Q <sub>7-10</sub> Flow (cfs)	<u>6.094</u>	Q <sub>7-10</sub> Basis	<u>StreamStats/Streamgauge</u>
Elevation (ft)	<u>1097</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>11-A</u>	Chapter 93 Class.	<u>TSF / MF</u>
Existing Use	<u>Same as Chapter 93 class.</u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Attaining Use(s) supports aquatic life</u>		
Cause(s) of Impairment	<u>Not appl</u>		
Source(s) of Impairment	<u>Not appl</u>		
TMDL Status	<u>Not appl</u>	Name	<u></u>

Background/Ambient Data		Data Source	
pH (SU)	<u>7.84</u>	WQN224; median July to Sept	<u></u>
Temperature (°C)	<u>22.0</u>	WQN224; median July to Sept	<u></u>
Hardness (mg/L)	<u>135</u>	WQN224; Historical median	<u></u>
Other:	<u></u>		<u></u>

Nearest Downstream Public Water Supply Intake	<u>Mifflintown MA</u>		
PWS Waters	<u>Juniata River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u>37</u>	Distance from Outfall (mi)	<u>109</u>

**5.0: Overview of Presiding Water Quality Standards**

**5.1 General**

There are at least six (6) different policies which determines the effluent performance limits for the NPDES permit. The policies are technology based effluent limits (TBEL), water quality based effluent limits (WQBEL), antidegradation, total maximum daily loading (TMDL), anti-backsliding, and whole effluent toxicity (WET) The effluent performance limitations enforced are the selected permit limits that is most protective to the designated use of the receiving waters. An overview of each of the policies that are applicable to the subject facility has been presented in Section 6.

**5.2.1 Technology-Based Limitations**

TBEL treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under section 402 of the Act (40 CFR 125.3). Available TBEL requirements for the state of Pennsylvania are itemized in PA Code 25, Chapter 92a.47.

The presiding sources for the basis for the effluent limitations are governed by either federal or state regulation. The reference sources for each of the parameters is itemized in the tables. The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
CBOD <sub>5</sub>	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)

**5.2.2 Mass Based Limits**

For publicly owned treatment works (POTW), mass loadings are calculated based upon design flow rate of the facility and the permit limit concentration. The generalized calculation for mass loadings is shown below:

$$Quantity \left( \frac{lb}{day} \right) = (MGD)(Concentration)(8.34)$$

**5.3 Water Quality-Based Limitations**

WQBEL are based on the need to attain or maintain the water quality criteria and to assure protection of designated and existing uses (PA Code 25, Chapter 92a.2). The subject facility that is typically enforced is the more stringent limit of either the TBEL or the WQBEL.

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chlorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and

Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

### **5.3.1 Water Quality Modeling 7.0**

The WQM Model is a computer model that is used to determine NPDES discharge effluent limitations for Carbonaceous BOD (CBOD5), Ammonia Nitrogen (NH<sub>3</sub>-N), and Dissolved Oxygen (DO) for single and multiple point source discharges scenarios. WQM Model is a complete-mix model which means that the discharge flow and the stream flow are assumed to instantly and completely mixed at the discharge node.

WQM recommends effluent limits for DO, CBOD5, and NH<sub>3</sub>-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

- (a) a minimum concentration for DO in the discharge as 30-day average;
- (b) a 30-day average concentration for CBOD5 in the discharge;
- (c) a 30-day average concentration for the NH<sub>3</sub>-N in the discharge;
- (d) 24-hour average concentration for NH<sub>3</sub>-N in the discharge.

The WQM Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The input values utilized for the modeling are summarized in the table which can be found in Attachment B.

**The applicable WQM Effluent Limit Type are discussed in Section 6 under the corresponding parameter which is either DO, CBOD, or ammonia-nitrogen.**

### **5.3.2 Toxics Modeling**

The Toxics Management Spreadsheet model is a computer model that is used to determine effluent limitations for toxics (and other substances) for single discharge wasteload allocations. This computer model uses a mass-balance water quality analysis that includes consideration for mixing, first-order decay, and other factors used to determine recommended water quality-based effluent limits. Toxics Management Spreadsheet does not assume that all discharges completely mix with the stream. The point of compliance with water quality criteria are established using criteria compliance times (CCTs). The available CCTs are either acute fish criterion (AFC), chronic fish criterion (CFC), or human health criteria (THH & CRL).

**Acute Fish Criterion (AFC)** measures the criteria compliance time as either the maximum criteria compliance time (i.e. 15 minutes travel time downstream of the current discharge) or the complete mix time whichever comes first. AFC is evaluated at Q710 conditions.

**Chronic Fish Criterion (CFC)** measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CFC is evaluated at Q710 conditions.

**Threshold Human Health (THH)** measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the estimated travel time downstream to the nearest potable water supply intake whichever comes first. THH is evaluated at Q710 conditions.

**Cancer Risk Level (CRL)** measures the criteria compliance time as either the maximum criteria compliance time (i.e. 12 hours travel time downstream of the current discharge) or the complete mix time whichever comes first. CRL is evaluated at Qh (harmonic mean or normal flow) conditions.

The Toxics Model requires several input values for calculating output values. The source of data originates from either EMAP, the National Map, or Stream Stats. Data for stream gauge information, if any, was abstracted from USGS Low-Flow, Base-Flow, and Mean-Flow Regression Equations for Pennsylvania Streams authored by Marla H. Stuckey (Scientific Investigations Report 2006-5130).

The input values utilized for the modeling are summarized in the table which can be found in Attachment B.

**Applicable monitoring or permit limits for toxics are summarized in Section 6.**

**The Toxics Management Spreadsheet output has been included in Attachment B.**

#### **5.3.2.1 Determining if NPDES Permit Will Require Monitoring/Limits in the Proposed Permit for Toxic Pollutants**

To determine if Toxics modeling is necessary, DEP has developed a Toxics Management Spreadsheet to identify toxics of concern. Toxic pollutants whose maximum concentrations as reported in the permit application or on DMRs are greater than the most stringent applicable water quality criterion are pollutants of concern. A Reasonable Potential Analysis was utilized to determine (a) if the toxic parameters modeled would require monitoring or (b) if permit limitations would be required for the parameters. The toxics reviewed for reasonable potential were the following pollutants: TDS, chloride, bromide, sulfate, total copper, total manganese, and total zinc.

Based upon the SOP- Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants (Revised January 10, 2019), monitoring and/or limits will be established as follows.

- (a) When reasonable potential is demonstrated, establish limits where the maximum reported concentration equals or exceeds 50% of the WQBEL.
- (b) For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
- (c) For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

#### **5.4 Total Maximum Daily Loading (TMDL)**

##### **5.4.1 TMDL**

The goal of the Clean Water Act (CWA), which governs water pollution, is to ensure that all of the Nation's waters are clean and healthy enough to support aquatic life and recreation. To achieve this goal, the CWA created programs designed to regulate and reduce the amount of pollution entering United States waters. Section 303(d) of the CWA requires states to assess their waterbodies to identify those not meeting water quality standards. If a waterbody is not meeting standards, it is listed as impaired and reported to the U.S. Environmental Protection Agency. The state then develops a plan to clean up the impaired waterbody. This plan includes the development of a Total Maximum Daily Load (TMDL) for the pollutant(s) that were found to be the cause of the water quality violations. A Total Maximum Daily Load (TMDL) calculates the maximum amount of a specific pollutant that a waterbody can receive and still meet water quality standards.

Pennsylvania has committed to restoring all impaired waters by developing TMDLs and TMDL alternatives for all impaired waterbodies. The TMDL serves as the starting point or planning tool for restoring water quality.

##### **5.4.1.1 Local TMDL**

The subject facility does not discharge into a local TMDL.

##### **5.4.1.2 Chesapeake Bay TMDL Requirement**

The Chesapeake Bay Watershed is a large ecosystem that encompasses approximately 64,000 square miles in Maryland, Delaware, Virginia, West Virginia, Pennsylvania, New York and the District of Columbia. An ecosystem is composed of interrelated parts that interact with each other to form a whole. All of the plants and animals in an ecosystem depend on each other in some way. Every living thing needs a healthy ecosystem to survive. Human activities affect the Chesapeake Bay ecosystem by adding pollution, using resources and changing the character of the land.

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are

part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

The overall management approach needed for reducing nitrogen, phosphorus and sediment are provided in the Bay TMDL document and the Phase I, II, and III WIPs which is described in the Bay TMDL document and Executive Order 13508.

The Bay TMDL is a comprehensive pollution reduction effort in the Chesapeake Bay watershed identifying the necessary pollution reductions of nitrogen, phosphorus and sediment across the seven Bay watershed jurisdictions of Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia to meet applicable water quality standards in the Bay and its tidal waters.

The Watershed Implementation Plans (WIPs) provides objectives for how the jurisdictions in partnership with federal and local governments will achieve the Bay TMDL's nutrient and sediment allocations.

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was December 17, 2019.

The Chesapeake Bay TMDL (Appendix Q) categorizes point sources into four sectors:

- Sector A- significant sewage dischargers;
- Sector B- significant industrial waste (IW) dischargers;
- Sector C- non-significant dischargers (both sewage and IW facilities); and
- Sector D- combined sewer overflows (CSOs).

All sectors contain a listing of individual facilities with NPDES permits that were believed to be discharging at the time the TMDL was published (2010). All sectors with the exception of the non-significant dischargers have individual wasteload allocations (WLAs) for TN and TP assigned to specific facilities. Non-significant dischargers have a bulk or aggregate allocation for TN and TP based on the facilities in that sector that were believed to be discharging at that time and their estimated nutrient loads.

Based upon the supplement the subject facility has been categorized as a Sector A discharger. The supplement defines Sector A as a sewage facility that is considered significant if it has a design flow of at least 0.4 MGD. For rollout of its permitting strategy, DEP classified these facilities into three phases. Thirty IW facilities have individual WLAs in the TMDL.

Table 5 presents all NPDES permits for Significant Sewage dischargers with Cap Loads. The NPDES Permit No., phase, facility name, latest permit issuance date, expiration date, Cap Load compliance start date, TN and TP Cap Loads, and TN and TP Delivery Ratios are presented. In addition, if TN Offsets were incorporated into the TN Cap Loads when the permit was issued, the amount is shown; these Offsets will be removed from Cap Loads upon issuance of renewed permits to implement Section IV of the WIP document (i.e., a facility may use Offsets for compliance but may not register them as credits).

The total nitrogen (TN) and total phosphorus (TP) cap loads itemized by Table 5 for the subject facility are as follows:

TN Cap Load (lbs/yr)	14,612
TN Delivery Ratio	0.88
TP Cap Load (lbs/yr)	1,948
TP Delivery Ratio	0.436

Expansions by any Significant Sewage discharger will not result in any increase in Cap Loads. Where non-significant facilities expand to a design flow of 0.4 MGD or greater, the lesser of baseline Cap Loads of 7,306 lbs/yr TN and 974 lbs/yr TP or existing performance will be used for permits, and the load will be moved from the Non-Significant sector load to the Significant Sewage sector load. If considered necessary for environmental protection, DEP may decide to move load from the Point Source Reserve to the Significant Sewage sector in the future.

The minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for Significant Sewage dischargers is 2/week.

**This facility is subject to Sector A monitoring requirements. Monitoring shall be required at least 2x/wk.**

### Reporting

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30.

Facilities with NPDES permits must use DEP's eDMR system for reporting, except small flow treatment facilities. An Annual DMR must be submitted by the end of the Truing Period, November 28. As attachments to the Annual DMR a facility must submit a completed Annual Chesapeake Bay Spreadsheet, available through DEP's Supplemental Reports website, which contains an Annual Nutrient Monitoring worksheet and an Annual Nutrient Budget worksheet. This Spreadsheet will be submitted once per Compliance Year only, and reflect all nutrient sample results (for the period October 1 – September 30), Credit transactions (including the Truing Period) and Offsets applied during the Compliance Year.

### **5.5 Anti-Degradation Requirement**

Chapter 93.4a of the PA regulations requires that surface water of the Commonwealth of Pennsylvania may not be degraded below levels that protect the existing uses. The regulations specifically state that *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. Antidegradation requirements are implemented through DEP's guidance manual entitled Water Quality Antidegradation Implementation Guidance (Document #391-0300-02).

The policy requires DEP to protect the existing uses of all surface waters and the existing quality of High Quality (HQ) and Exceptional Value (EV) Waters. Existing uses are protected when DEP makes a final decision on any permit or approval for an activity that may affect a protected use. Existing uses are protected based upon DEP's evaluation of the best available information (which satisfies DEP protocols and Quality Assurance/Quality Control (QA/QC) procedures) that indicates the protected use of the waterbody.

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

**The subject facility's discharge will be to a non-special protection waters and the permit conditions are imposed to protect existing instream water quality and uses. Neither HQ waters or EV waters is impacted by this discharge.**

### **5.6 Anti-Backsliding**

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.I.1 and 40 CFR 122.I.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

### **6.0 NPDES Parameter Details**

The basis for the proposed sampling and their monitoring frequency that will appear in the permit for each individual parameter are itemized in this Section. The final limits are the more stringent of technology based effluent treatment (TBEL) requirements, water quality based (WQBEL) limits, TMDL, antidegradation, anti-degradation, or WET.

The reader will find in this section:

- a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;



- b) a summary of changes from the existing NPDES permit to the proposed permit; and
- c) a summary of the proposed NPDES effluent limits.

**6.1 Recommended Monitoring Requirements and Effluent Limitations**

A summary of the recommended monitoring requirements and effluent limitations are itemized in the tables. The tables are categorized by (a) Conventional Pollutants and Disinfection, (b) Nitrogen Species and Phosphorus, and (c) Toxics.

**6.1.1 Conventional Pollutants and Disinfection**

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Greenfield Township MA, PA0029106			
Parameter	Permit Limitation Required by <sup>1</sup> :	Recommendation	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	Antibacksliding	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	During the months of November 1 to April 30, the effluent limits shall not exceed 167 lbs/day and 25 mg/l as an average monthly. During the months of May 1 to October 31, the effluent limits shall not exceed 133 lbs/day and 20 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3. The Fact Sheet from July 2016 modelled Greenfield MA, Roaring Spring, Freedom Twp MA, Appvion, Balir Chalet, and Hollidaysburg as outfalls for water quality modeling. Among those Greensfield MA was the most upstream outfall. Due to antibacksliding, the current limits shall continue to the proposed permit.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 200 lbs/day and 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD. Since the TBEL is more stringent than TBEL, TBEL will apply.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to recording the UV transmittance..
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.
<b>Notes:</b>			

1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other

2 Monitoring frequency based on flow rate of 0.8 MGD.

3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97

4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)

5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

**6.1.2 Nitrogen Species and Phosphorus**

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus			
Greenfield Township MA, PA0029106			
Parameter	Permit Limitation Required by <sup>1</sup> :	Recommendation	
Ammonia-Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as a 24-hr composite sample
		Effluent Limit:	During the months of May 1 to October 31, the effluent requirement shall be 37 lbs/day and 5.5 mg/l. During the months of November 1 to April 30, the effluent requirement shall be 110 lbs/day and 16.5 mg/l.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/yr.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/wk.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a calculation
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/wk.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 2x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 2x/wk.
Net Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit:	Effluent limits shall not exceed 14,612 lbs/day.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Net Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit:	Effluent limits shall not exceed 1,948 lbs/day.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.

**Notes:**

- 1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other
- 2 Monitoring frequency based on flow rate of 0.8 MGD.
- 3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document # 362-0400-001) Revised 10/97
- 4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)
- 5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017

**6.1.3 Toxics**

Summary of Proposed NPDES Parameter Details for Toxics			
Greenfield Township MA, PA0029106			
Parameter	Permit Limitation Required by <sup>1</sup> :	Recommendation	
Total Copper	WQBEL / Anti-backsliding	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 0.28 lbs/day and 0.042 mg/l as an average monthly.
		Rationale:	Toxics Management Spreadsheet recommends limits. Modeling shows that the limits are less stringent than the current permit. However, due to antibacksliding regulations, the current permit limits shall continue to the proposed permit.
Notes:			
1 The NPDES permit was limited by (a) anti-Backsliding, (b) Anti-Degradation, (c) SOP, (d) TBEL, (e) TMDL, (f) WQBEL, (g) WET, or (h) Other			
2 Monitoring frequency based on flow rate of 0.8 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits) (Document # 362-0400-001) Revised 10/97			
4 Water Quality Antidegradation Implementaton Guidance (Document # 391-0300-002)			
5 Phase 2 Watershed Implementation Plan Wastewater Supplement, Revised September 6, 2017			

**6.2 Summary of Changes From Existing Permit to Proposed Permit**

A summary of how the proposed NPDES permit differs from the existing NPDES permit is summarized as follows.

- Due to the EPA triennial review, E. Coli shall be monitored on a 1x/quarter basis.

**6.3.1 Summary of Proposed NPDES Effluent Limits**

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.

The proposed NPDES effluent limitations are summarized in the table below.

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. A. For Outfall 001, Latitude 40° 18' 41.00", Longitude 78° 26' 36.89", River Mile Index 45, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF)

Type of Effluent: Effluent

1. The permittee is authorized to discharge during the period from Permit Effective Date through Permit Expiration Date.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	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
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	167	267	XXX	25.0	40.0	50	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	133	200	XXX	20.0	30.0	40	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	200	300	XXX	30.0	45.0	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab

Outfall001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	110	XXX	XXX	16.5	XXX	33	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	37	XXX	XXX	5.5	XXX	11	2/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Copper, Total	0.28	XXX	XXX	0.042	XXX	0.084	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

**PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS**

I. B. For Outfall 001, Latitude 40° 18' 41.00", Longitude 78° 26' 36.89", River Mile Index 45, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF)

Type of Effluent: Effluent

1. The permittee is authorized to discharge during the period from Permit Effective Date through Permit Expiration Date.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia-N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl-N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation 24-Hr Composite
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	XXX	14612	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	1948	XXX	XXX	XXX	XXX	1/year	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Footnotes:

- (1) See Part C for Chesapeake Bay Requirements.
- (2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.

**6.3.2 Summary of Proposed Permit Part C Conditions**

The subject facility has the following Part C conditions.

- SBR Batch Discharge Condition
- Hauled-in Waste Restrictions
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems
- Special Part C Condition for compliance with Part A, Additional Requirements, Paragraph 1.d

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input 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 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 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 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 type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, rev 10/11/2012
<input type="checkbox"/>	Other: [redacted]



# Attachment A

## Stream Stats/Gauge Data

**Table 1.** List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi<sup>2</sup>, square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi <sup>2</sup> )	Regulated <sup>1</sup>
01541303	West Branch Susquehanna River at Hyde, Pa.	41.005	-78.457	474	Y
01541308	Bradley Run near Ashville, Pa.	40.509	-78.584	6.77	N
01541500	Clearfield Creek at Dimeling, Pa.	40.972	-78.406	371	Y
01542000	Moshannon Creek at Osceola Mills, Pa.	40.850	-78.268	68.8	N
01542500	WB Susquehanna River at Karthaus, Pa.	41.118	-78.109	1,462	Y
01542810	Waldy Run near Emporium, Pa.	41.579	-78.293	5.24	N
01543000	Driftwood Branch Sinnemahoning Creek at Sterling Run, Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First Fork Sinnemahoning Creek near Sinnemahoning, Pa.	41.402	-78.024	245	Y
01544500	Kettle Creek at Cross Fork, Pa.	41.476	-77.826	136	N
01545000	Kettle Creek near Westport, Pa.	41.320	-77.874	233	Y
01545500	West Branch Susquehanna River at Renovo, Pa.	41.325	-77.751	2,975	Y
01545600	Young Womans Creek near Renovo, Pa.	41.390	-77.691	46.2	N
01546000	North Bald Eagle Creek at Milesburg, Pa.	40.942	-77.794	119	N
01546400	Spring Creek at Houserville, Pa.	40.834	-77.828	58.5	N
01546500	Spring Creek near Axemann, Pa.	40.890	-77.794	87.2	N
01547100	Spring Creek at Milesburg, Pa.	40.932	-77.786	142	N
01547200	Bald Eagle Creek below Spring Creek at Milesburg, Pa.	40.943	-77.786	265	N
01547500	Bald Eagle Creek at Blanchard, Pa.	41.052	-77.604	339	Y
01547700	Marsh Creek at Blanchard, Pa.	41.060	-77.606	44.1	N
01547800	South Fork Beech Creek near Snow Shoe, Pa.	41.024	-77.904	12.2	N
01547950	Beech Creek at Monument, Pa.	41.112	-77.702	152	N
01548005	Bald Eagle Creek near Beech Creek Station, Pa.	41.081	-77.549	562	Y
01548500	Pine Creek at Cedar Run, Pa.	41.522	-77.447	604	N
01549000	Pine Creek near Waterville, Pa.	41.313	-77.379	750	N
01549500	Blockhouse Creek near English Center, Pa.	41.474	-77.231	37.7	N
01549700	Pine Creek below Little Pine Creek near Waterville, Pa.	41.274	-77.324	944	Y
01550000	Lycoming Creek near Trout Run, Pa.	41.418	-77.033	173	N
01551500	WB Susquehanna River at Williamsport, Pa.	41.236	-76.997	5,682	Y
01552000	Loyalsock Creek at Loyalsockville, Pa.	41.325	-76.912	435	N
01552500	Muncy Creek near Sonestown, Pa.	41.357	-76.535	23.8	N
01553130	Sand Spring Run near White Deer, Pa.	41.059	-77.077	4.93	N
01553500	West Branch Susquehanna River at Lewisburg, Pa.	40.968	-76.876	6,847	Y
01553700	Chillisquaque Creek at Washingtonville, Pa.	41.062	-76.680	51.3	N
01554000	Susquehanna River at Sunbury, Pa.	40.835	-76.827	18,300	Y
01554500	Shamokin Creek near Shamokin, Pa.	40.810	-76.584	54.2	N
01555000	Penns Creek at Penns Creek, Pa.	40.867	-77.048	301	N
01555500	East Mahantango Creek near Dalmatia, Pa.	40.611	-76.912	162	N
01556000	Frankstown Branch Juniata River at Williamsburg, Pa.	40.463	-78.200	291	N
01557500	Bald Eagle Creek at Tyrone, Pa.	40.684	-78.234	44.1	N
01558000	Little Juniata River at Spruce Creek, Pa.	40.613	-78.141	220	N
01559000	Juniata River at Huntingdon, Pa.	40.485	-78.019	816	LF
01559500	Standing Stone Creek near Huntingdon, Pa.	40.524	-77.971	128	N
01559700	Sulphur Springs Creek near Manns Choice, Pa.	39.978	-78.619	5.28	N
01560000	Dunning Creek at Belden, Pa.	40.072	-78.493	172	N

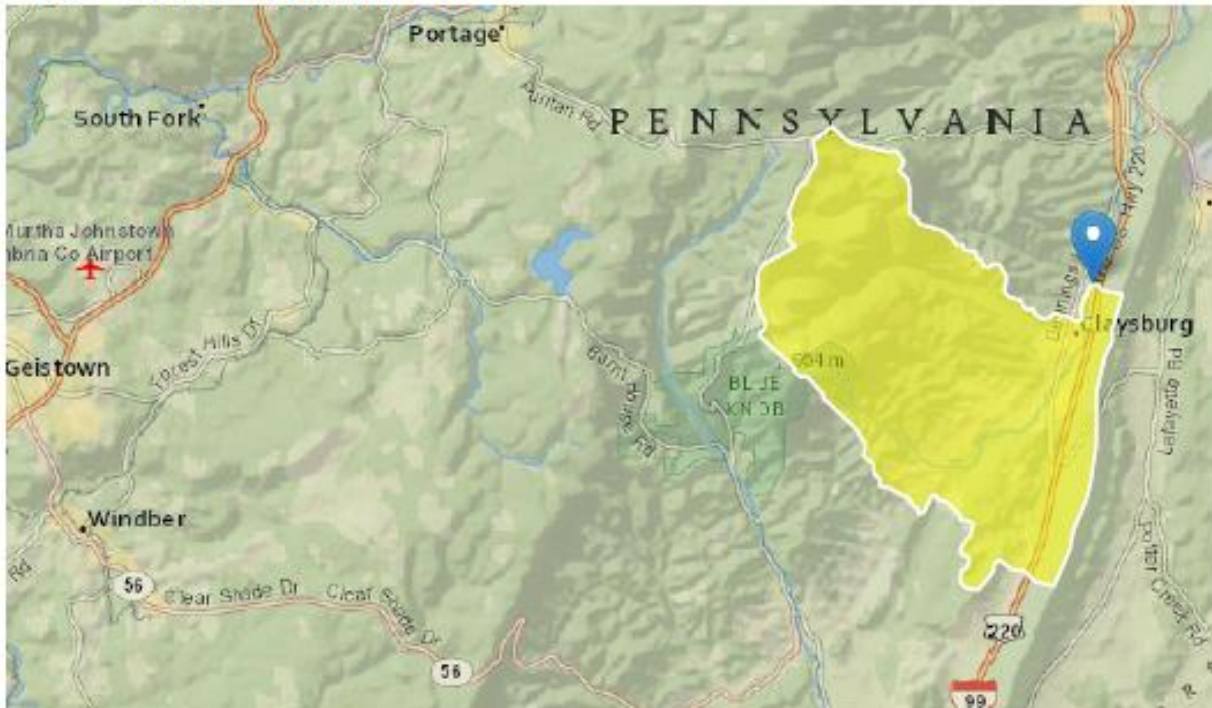
**Table 2.** Selected low-flow statistics for streamgauge locations in and near Pennsylvania.—Continued

[ft<sup>3</sup>/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgauge number	Period of record used in analysis <sup>1</sup>	Number of years used in analysis	1-day, 10-year (ft <sup>3</sup> /s)	7-day, 10-year (ft <sup>3</sup> /s)	7-day, 2-year (ft <sup>3</sup> /s)	30-day, 10-year (ft <sup>3</sup> /s)	30-day, 2-year (ft <sup>3</sup> /s)	90-day, 10-year (ft <sup>3</sup> /s)
01546000	1912–1934	17	1.8	2.2	6.8	3.7	12.1	11.2
01546400	1986–2008	23	13.5	14.0	19.6	15.4	22.3	18.7
01546500	1942–2008	67	26.8	29.0	41.3	31.2	44.2	33.7
01547100	1969–2008	40	102	105	128	111	133	117
01547200	1957–2008	52	99.4	101	132	106	142	115
01547500	<sup>2</sup> 1971–2008	38	28.2	109	151	131	172	153
01547500	<sup>3</sup> 1956–1969	14	90.0	94.9	123	98.1	131	105
01547700	1957–2008	52	.5	.6	2.7	1.1	3.9	2.2
01547800	1971–1981	11	1.6	1.8	2.4	2.1	2.9	3.5
01547950	1970–2008	39	12.1	13.6	28.2	17.3	36.4	23.8
01548005	<sup>2</sup> 1971–2000	25	142	151	206	178	241	223
01548005	<sup>3</sup> 1912–1969	58	105	114	147	125	165	140
01548500	1920–2008	89	21.2	24.2	50.1	33.6	68.6	49.3
01549000	1910–1920	11	26.0	32.9	78.0	46.4	106	89.8
01549500	1942–2008	67	.6	.8	2.5	1.4	3.9	2.6
01549700	1959–2008	50	33.3	37.2	83.8	51.2	117	78.4
01550000	1915–2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	<sup>2</sup> 1963–2008	46	520	578	1,020	678	1,330	919
01551500	<sup>3</sup> 1901–1961	61	400	439	742	523	943	752
01552000	1927–2008	80	20.5	22.2	49.5	29.2	69.8	49.6
01552500	1942–2008	67	.9	1.2	3.1	1.7	4.4	3.3
01553130	1969–1981	13	1.0	1.1	1.5	1.3	1.8	1.7
01553500	<sup>2</sup> 1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	<sup>3</sup> 1941–1966	26	562	619	880	690	1,090	881
01553700	1981–2008	28	9.1	10.9	15.0	12.6	17.1	15.2
01554000	<sup>2</sup> 1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	<sup>3</sup> 1939–1979	41	1,560	1,630	2,870	1,880	3,620	2,570
01554500	1941–1993	53	16.2	22.0	31.2	25.9	35.7	31.4
01555000	1931–2008	78	33.5	37.6	58.8	43.4	69.6	54.6
01555500	1931–2008	78	4.9	6.5	18.0	9.4	24.3	16.6
01556000	1918–2008	91	43.3	47.8	66.0	55.1	75.0	63.7
01557500	1946–2008	63	2.8	3.2	6.3	4.2	8.1	5.8
01558000	1940–2008	69	56.3	59.0	79.8	65.7	86.2	73.7
01559000	1943–2008	66	104	177	249	198	279	227
01559500	1931–1958	28	9.3	10.5	15.0	12.4	17.8	15.8
01559700	1963–1978	16	.1	.1	.2	.1	.3	.2
01560000	1941–2008	68	8.5	9.4	15.6	12.0	20.2	16.2
01561000	1932–1958	27	.4	.5	1.6	.8	2.5	1.7
01562000	1913–2008	96	64.1	67.1	106	77.4	122	94.5
01562500	1931–1957	27	1.1	1.6	3.8	2.3	5.4	3.7
01563200	<sup>2</sup> 1974–2008	35	—	—	—	112	266	129
01563200	<sup>3</sup> 1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	<sup>2</sup> 1974–2008	35	384	415	519	441	580	493
01563500	<sup>3</sup> 1939–1972	34	153	242	343	278	399	333
01564500	1940–2008	69	3.6	4.2	10.0	6.2	14.4	10.6

# StreamStats Report

Region ID: PA  
 Workspace ID: PA20210714131203592000  
 Clicked Point (Latitude, Longitude): 40.31147, -78.44367  
 Time: 2021-07-14 09:12:19 -0400



Greenfield Township STP PA0029106 Modeling Point #1 July 2021

Basin Characteristics			
Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	37.1	square miles
PRECIP	Mean Annual Precipitation	39	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	2.28	miles per square mile
ROCKDEP	Depth to rock	4.3	feet
CARBON	Percentage of area of carbonate rock	12.85	percent

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	37.1	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	2.28	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.3	feet	3.32	5.65
CARBON	Percent Carbonate	12.85	percent	0	99

Low-Flow Statistics Flow Report [Low Flow Region 2]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	3.12	ft <sup>3</sup> /s	38	38
30 Day 2 Year Low Flow	4.23	ft <sup>3</sup> /s	33	33
7 Day 10 Year Low Flow	1.47	ft <sup>3</sup> /s	51	51
30 Day 10 Year Low Flow	2.01	ft <sup>3</sup> /s	46	46
90 Day 10 Year Low Flow	3.1	ft <sup>3</sup> /s	36	36

*Low-Flow Statistics Citations*

Stuckey, M.H., 2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (<http://pubs.usgs.gov/sir/2006/5130/>)

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Application Version: 4.6.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.1.2

# StreamStats Report

Region ID: PA  
 Workspace ID: PA20210714131600163000  
 Clicked Point (Latitude, Longitude): 40.33863, -78.43416  
 Time: 2021-07-14 09:16:16 -0400



Greenfield Township STP PA0029106 Modeling Point #2 July 2021

Basin Characteristics			
Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	44.6	square miles
PRECIP	Mean Annual Precipitation	39	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	2.38	miles per square mile
ROCKDEP	Depth to rock	4.3	feet
CARBON	Percentage of area of carbonate rock	11.19	percent

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	44.6	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	2.38	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.3	feet	3.32	5.65
CARBON	Percent Carbonate	11.19	percent	0	99

Low-Flow Statistics Flow Report [Low Flow Region 2]

PIl: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	3.6	ft <sup>3</sup> /s	38	38
30 Day 2 Year Low Flow	4.89	ft <sup>3</sup> /s	33	33
7 Day 10 Year Low Flow	1.69	ft <sup>3</sup> /s	51	51
30 Day 10 Year Low Flow	2.32	ft <sup>3</sup> /s	46	46
90 Day 10 Year Low Flow	3.59	ft <sup>3</sup> /s	36	36

*Low-Flow Statistics Citations*

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (<http://pubs.usgs.gov/sir/2006/5130/>)

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Application Version: 4.6.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.1.2

# Attachment B

## WQM 7.0 Modeling Output Values Toxics Management Spreadsheet

**WQM 7.0 Effluent Limits**

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
11A		16061		FRANKSTOWN BRANCH JUNIATA RIVER			
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
45.000	Greenfield	PA0029106	0.800	CBOD5	25		
				NH3-N	5.5	11	
				Dissolved Oxygen			5

### WQM 7.0 D.O. Simulation

<u>\$WP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER			
<hr/>					
<u>RM1</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
45.000	0.800	21.662		7.584	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
35.939	0.701	51.282		0.291	
<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>	
5.88	0.958	0.93		0.796	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
7.896	15.386	Tsivoglou		5	
<u>Reach Travel Time (days)</u>	<b>Subreach Results</b>				
0.439	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>	
	0.044	5.62	0.90	7.89	
	0.088	5.37	0.87	7.99	
	0.132	5.13	0.84	7.99	
	0.175	4.91	0.81	7.99	
	0.219	4.69	0.78	7.99	
	0.263	4.48	0.75	7.99	
	0.307	4.28	0.73	7.99	
	0.351	4.09	0.70	7.99	
	0.395	3.91	0.68	7.99	
	0.439	3.74	0.65	7.99	

### WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.91	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.15	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

**WQM 7.0 Hydrodynamic Outputs**

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
11A		16061				FRANKSTOWN BRANCH JUNIATA RIVER						
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (f/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
<b>Q7-10 Flow</b>												
45.000	6.10	0.00	6.10	1.2376	0.00535	.701	35.94	51.28	0.29	0.439	21.66	7.58
<b>Q1-10 Flow</b>												
45.000	5.55	0.00	5.55	1.2376	0.00535	NA	NA	NA	0.28	0.458	21.64	7.57
<b>Q30-10 Flow</b>												
45.000	7.01	0.00	7.01	1.2376	0.00535	NA	NA	NA	0.31	0.411	21.70	7.61

**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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	45.000	1097.00	37.10	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		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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
Greenfield	PA0029106	0.8000	0.8000	0.8000	0.000	20.00	7.08

**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	5.50	0.00	0.00	0.70

**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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	42.910	1038.00	44.60	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		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data							
Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data				
Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70



### WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
11A	16061	FRANKSTOWN BRANCH 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
45.000	Greenfield	7.26	11	7.26	11	0	0

**NH3-N Chronic Allocations**

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
45.000	Greenfield	1.13	5.5	1.13	5.5	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)		
45.000	Greenfield	25	25	5.5	5.5	5	5	0	0



## Discharge Information

Instructions Discharge Stream

Facility: Greenfield Township STP NPDES Permit No.: PA0029106 Outfall No.: 001

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q <sub>7-10</sub>	Q <sub>n</sub>
0.8	100	7.08						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank		
			Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl	
Group 1	Total Dissolved Solids (PWS)	mg/L	254									
	Chloride (PWS)	mg/L	54.7									
	Bromide	mg/L	< 0.12									
	Sulfate (PWS)	mg/L	49.4									
	Fluoride (PWS)	mg/L										
Group 2	Total Aluminum	µg/L										
	Total Antimony	µg/L										
	Total Arsenic	µg/L										
	Total Barium	µg/L										
	Total Beryllium	µg/L										
	Total Boron	µg/L										
	Total Cadmium	µg/L										
	Total Chromium (III)	µg/L										
	Hexavalent Chromium	µg/L										
	Total Cobalt	µg/L										
	Total Copper	mg/L	0.1									
	Free Cyanide	µg/L										
	Total Cyanide	µg/L										
	Dissolved Iron	µg/L										
	Total Iron	µg/L										
	Total Lead	µg/L										
	Total Manganese	mg/L	< 0.00056									
	Total Mercury	µg/L										
	Total Nickel	µg/L										
	Total Phenols (Phenolics) (PWS)	µg/L										
Total Selenium	µg/L											
Total Silver	µg/L											
Total Thallium	µg/L											
Total Zinc	mg/L	0.0197										
Total Molybdenum	µg/L											
Acrolein	µg/L	<										
Acrylamide	µg/L	<										
Acrylonitrile	µg/L	<										
Benzene	µg/L	<										
Bromoform	µg/L	<										



### Stream / Surface Water Information

Greenfield Township STP, NPDES Permit No. PA0029106, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: Frankstown Branch Juniata River No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi <sup>2</sup> )*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	018081	45	1097	37.1			Yes
End of Reach 1	018081	42.91	1038	44.8			Yes

**Q<sub>7-10</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	45	0.1643										135	7.84		
End of Reach 1	42.91	0.1643										135	7.84		

**Q<sub>n</sub>**

Location	RMI	LFY (cfs/mi <sup>2</sup> )*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	45														
End of Reach 1	42.91														



## Model Results

Greenfield Township STP, NPDES Permit No. PA0029106, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	16.877	17.6	80.4	Chem Translator of 0.96 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	143.816	147	672	Chem Translator of 0.978 applied

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	11.140	11.6	68.8	Chem Translator of 0.96 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	146.677	149	881	Chem Translator of 0.986 applied

THH

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	

Total Copper	0	0		0	N/A	N/A	N/A
Total Manganese	0	0		0	1,000	1,000	5,925
Total Zinc	0	0		0	N/A	N/A	N/A

CRL      CCT (min):       PMF:       Analysis Hardness (mg/l):       Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	0.34	0.54	0.052	0.08	0.13	mg/L	0.052	AFC	Discharge Conc ≥ 50% WQBEL (RP)

Other Pollutants without Limits or Monitoring