

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. PA0020249
APS ID 328568
Authorization ID 1486675

Applicant and Facility Information

Applicant Name	<u>Roaring Spring Borough Municipal Authority Blair County</u>	Facility Name	<u>Roaring Spring Borough STP</u>
Applicant Address	<u>PO Box 33 616 Spang Street</u> <u>Roaring Spring, PA 16673-0033</u>	Facility Address	<u>131 Paper Mill Road</u> <u>Roaring Spring, PA 16673-0033</u>
Applicant Contact	<u>Steve Weaver</u>	Facility Contact	<u>Steve Weaver</u>
Applicant Phone	<u>(814) 224-4814</u>	Facility Phone	<u>(814) 224-4814</u>
Client ID	<u>77311</u>	Site ID	<u>248590</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Roaring Spring Borough</u>
Connection Status	<u>No Limitations</u>	County	<u>Blair</u>
Date Application Received	<u>May 24, 2024</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u>May 30, 2024</u>	If No, Reason	<u>Significant CB Discharge</u>
Purpose of Application	<u>This is an application request for NPDES renewal.</u>		

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	June 12, 2024
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for	June 25, 2024
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	June 25, 2024

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Roaring Spring WWTP located at 131 Paper Mill Road, Roaring Spring, PA 16673 in Blair County, municipality of Freedom Township. The existing permit became effective on February 1, 2020 and expires(d) on January 31, 2025. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on May 24, 2024.

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 0.70 MGD average annual design flow treatment facility. 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 Blair County, Roaring Spring Borough Council, and Freedom Township supervisors and the notice was received by the parties on April 15, 2024. 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 Frankstown Branch Juniata River. The sequence of receiving streams that the Frankstown Branch Juniata River discharges into are 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 fishes (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 2024 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life and fish consumption. 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 Chesapeake Bay WIP, monitoring for nitrogen species and phosphorus shall be at least 2x/week.**
- **Due to the EPA triennial review, monitoring shall be required for E. Coli.**
- **Bromide has been eliminated from monitoring.**

Sludge use and disposal description and location(s): Sewage Sludge/Biosolids disposed at the landfill at Laurel Highlands as sewage sludge

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:	Roaring Springs WWTP
NPDES Permit #	PA0020249
Physical Address:	131 Paper Mill Road Roaring Spring, PA 16673
Mailing Address:	616 Spang Street Roaring Spring, PA 16673
Contact:	Steve Weaver seweaver@atlanticbb.net (814) 224-4814
Consultant:	Brock Bowers, EIT Keller Engineers, Inc. dcunningham@keller-engineers.com (814) 696-7430

1.2 Permit History

Roaring Springs began construction of a new effluent pumping station in 2015. The discharge location of the treated effluent from the plant was changed from Halter Creek (which is classified as an impaired cold water fishery) to the Frankstown Branch of the Juniata River (which is classified as a trout stocked fishery). The discharge point is north of the treatment plant.

Permit submittal included the following information.

- NPDES Application
- Flow Diagrams
- Influent Sample Data
- Effluent Sample Data

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 131 Paper Mill Road, Roaring Spring, PA 16673. 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

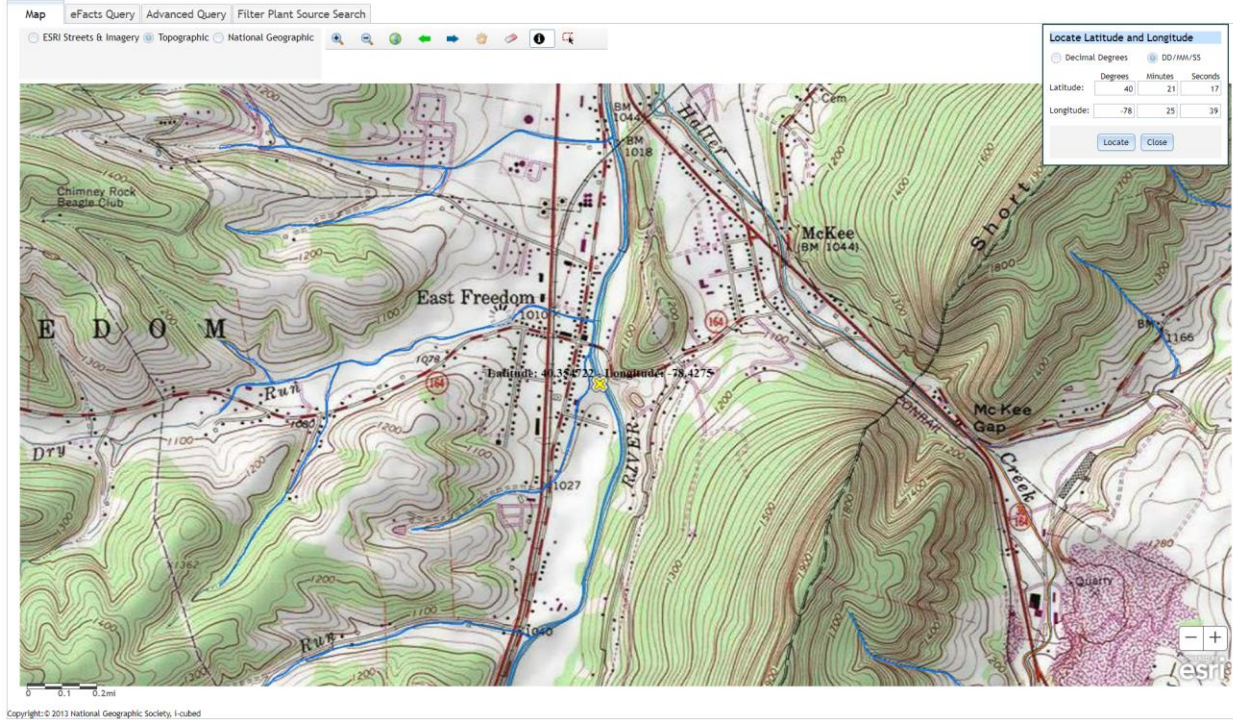


Figure 2: Aerial Photograph of the subject facility

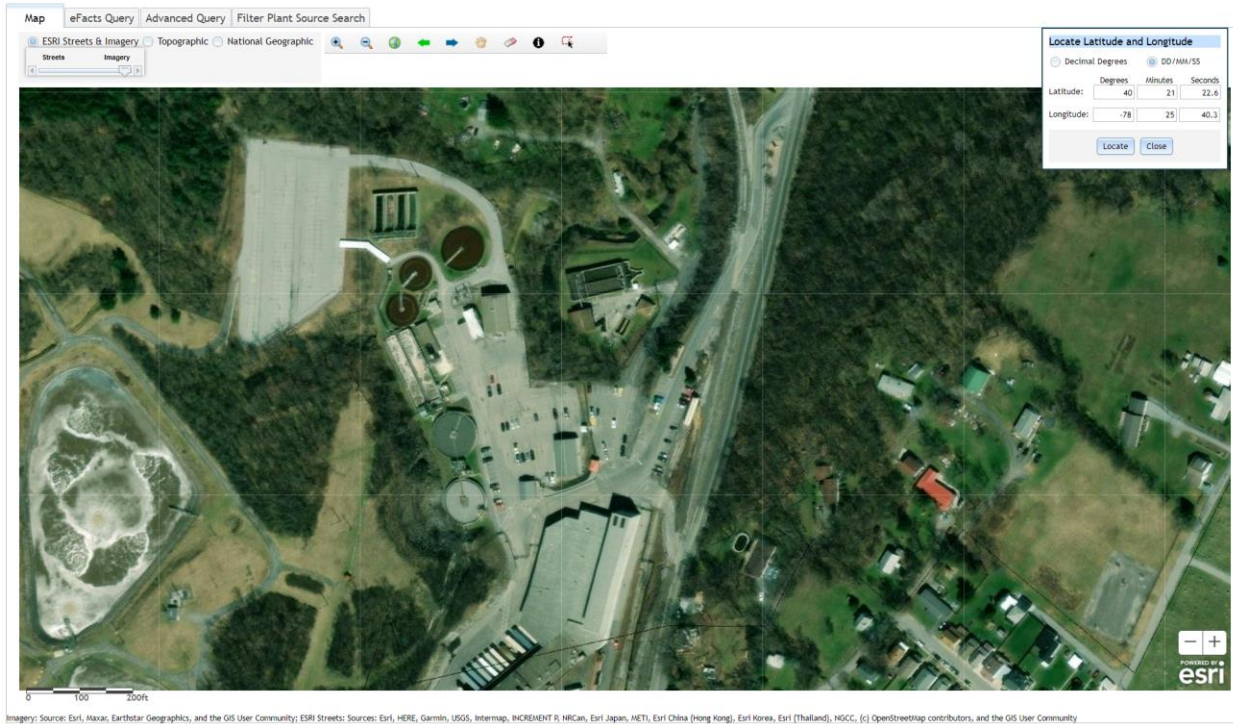
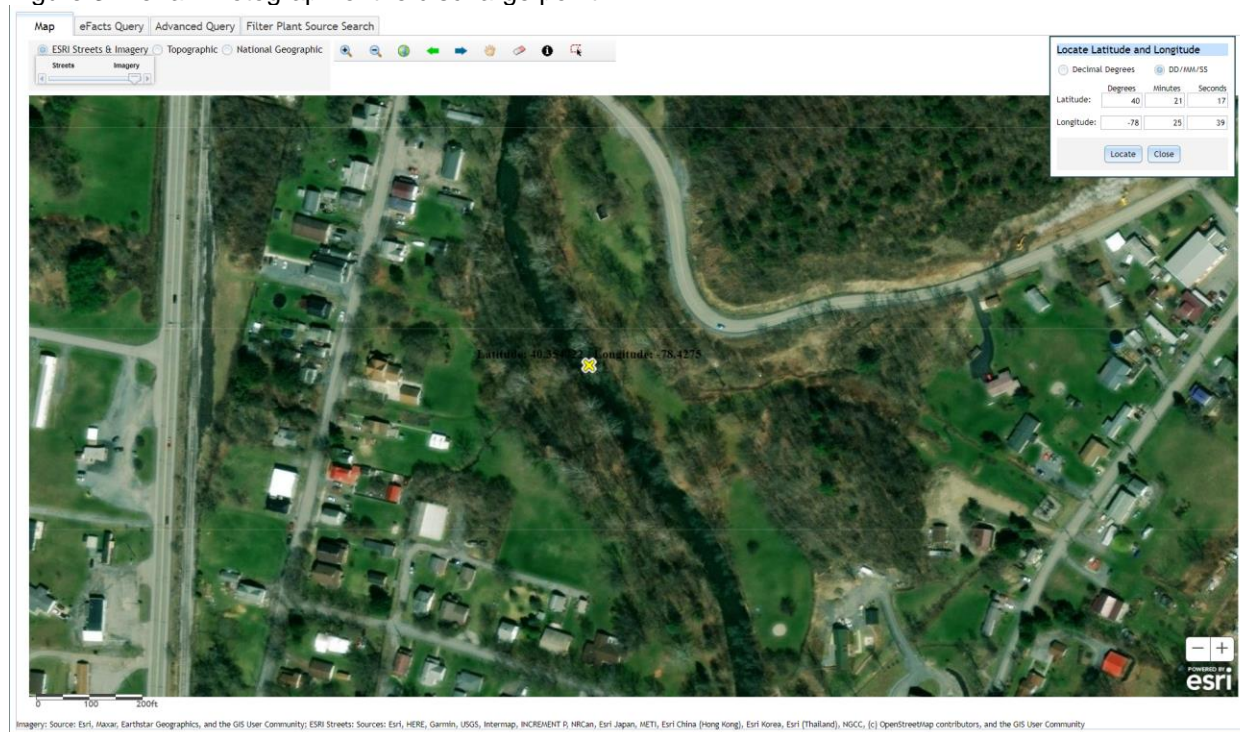


Figure 3: Aerial Photograph of the discharge point



2.1.2 Sources of Wastewater/Stormwater

Roaring Springs Borough contributes 100% of the wastewater to the wastewater treatment plant.

The facility receives industrial / commercial wastewater from Nason Hospital (0.014 MGD) and Graystone Courts Apartment Complex (0.006 MGD).

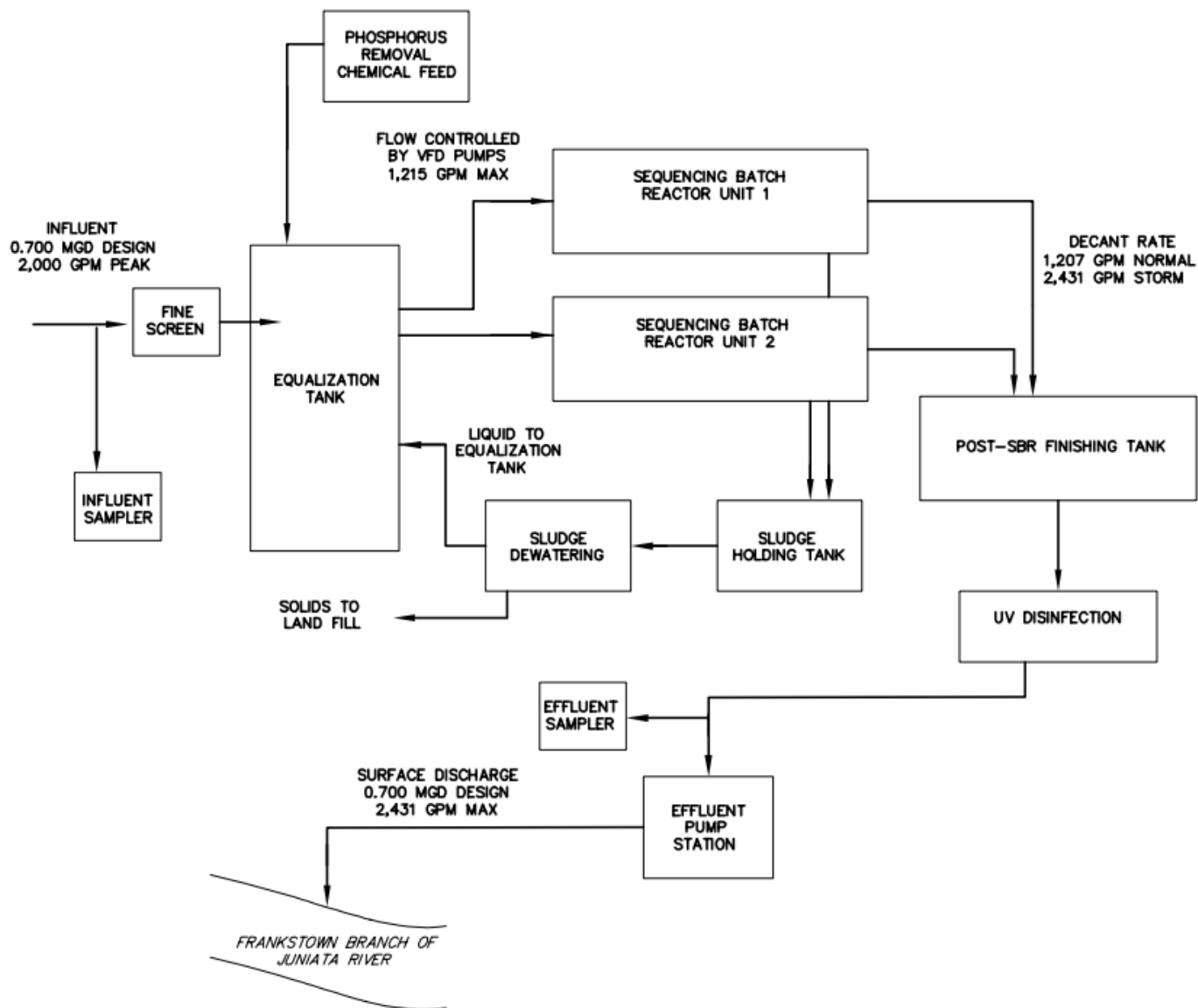
2.2 Description of Wastewater Treatment Process

The subject facility is a 0.70 MGD annual average design flow facility. The subject facility treats wastewater using an equalization basin, a sequencing batch reactor (SBR), a post SBR finishing tank, and UV disinfection prior to discharge through the outfall. The facility is being evaluated for flow, pH, dissolved oxygen, CBOD5, TSS, fecal coliform, UV, nitrogen species, phosphorus, and bromide. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary				
Treatment Facility Name: Roaring Spring STP				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.7
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.2	1190	Not Overloaded		

A flow diagram for the facility is depicted.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No. 002
Latitude 40° 21' 17.00"
Wastewater Description: Sewage Effluent

Design Flow (MGD) 1.2
Longitude -78° 25' 39.00"

The subject facility outfall is within the vicinity of another sewage/wastewater outfall. The upstream outfall is Greenfield Township STP (PA0029106) which is about 3 miles from the subject facility. The downstream outfall is Freedom Township STP (PA0110361) which is about 2 miles from the subject facility.

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.

- The facility did not report any chemical usages/additives in their NPDES applications.

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 002, Latitude 40° 21' 17.00", Longitude 78° 25' 39.00", River Mile Index 40, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF, MF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **February 1, 2020** through **January 31, 2025**.
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) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	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)	146	233	XXX	25	40	50	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	175	263	XXX	30	45	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
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

Outfall 002, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	37	XXX	XXX	6.5	XXX	13	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Bromide	XXX	XXX	XXX	Report	XXX	XXX	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 002

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

I. B. For Outfall 002, Latitude 40° 21' 17.00", Longitude 78° 25' 39.00", River Mile Index 40, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF, MF)

Type of Effluent: Sewage Effluent

- The permittee is authorized to discharge during the period from **February 1, 2020** through **January 31, 2025**.
- 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) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Net Total Nitrogen	Report	12785	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1705	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 002

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.

02/13/2020:

- The facility was cited for (a) 25 Pa. Code 91.33 Failure to provide immediate oral notification to DEP of an SSO or to submit a written report within 5 days of incident (b) 25 Pa. Code 92a.47 Discharges from an SSO are prohibited (c) 25 Pa. Code 92a.61- Failure to monitor pollutants as required by the NPDES permit. Effluent sample taken end of chamber.

01/12/2021:

- Conducted an administrative review of the Roaring Spring STP Annual Chesapeake Bay report. DEP received a 2019-2020 Annual DMR on November 20, 2020. The report used an older version of the Chesapeake Bay annual spreadsheet. Future reports should include the newest version (V2.2) of the spreadsheet, which can be found on the DEP's website. A review of the annual DMR showed a reporting error for the final effluent total phosphorus. The facility did not generate any phosphorus or nitrogen credits and needed to purchase credits for phosphorus. Two transactions were made to purchase a total of 432 phosphorus credits. Based on the data submitted, including credits purchased, the facility has achieved compliance with nitrogen and phosphorus annual loading limits for the 2019-2020 compliance year.

03/15/2022:

- Since last inspection the sludge filter press was repaired and one sludge pump was rebuilt. Starting in December 2021, the facility had been accepting liquid sludge from the IWTP at the former Appvion paper mill. About 4000 gallons of sludge is received each week. The sludge is held in one of the EQ tanks and gradually mixed with influent. A review of monthly DMRs revealed that hauled in waste supplemental forms are not being submitted for the sludge.

04/18/2023:

- One (of two) equalization tank was off line and nearly empty. The operators had plans to drain and clean out the tank and replace any broken diffusers.

03/21/2024:

- One SBR actuator was replaced. The Authority still has plans to clean out both EQ tanks.

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 0.4968 MGD in January 2024. The design capacity of the treatment system is 1.2 MGD.

The off-site laboratory used for the analysis of the parameters was Pace Analytical Laboratory Network located at 2019 9th Avenue, Altoona, PA 16602.

DMR Data for Outfall 002 (from April 1, 2023 to March 31, 2024)

Parameter	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
Flow (MGD) Average Monthly	0.4934	0.4541	0.4968	0.4012	0.3779	0.3629	0.3889	0.3805	0.4383	0.4102	0.4025	0.4132
Flow (MGD) Daily Maximum	0.8208	0.5973	0.7348	0.4954	0.6582	0.4663	0.4888	0.5371	0.5634	0.4845	0.5025	0.5382
pH (S.U.) Instantaneous Minimum	6.7	6.8	6.8	6.8	6.8	6.7	6.8	6.8	6.8	6.9	6.9	6.9
pH (S.U.) Instantaneous Maximum	7.0	7.0	7.1	7.2	7.1	6.9	7.0	7.0	7.2	7.1	7.3	7.3
DO (mg/L) Instantaneous Minimum	8.0	8.3	8.0	7.9	7.8	7.4	7.4	7.5	7.6	7.9	7.6	7.9
CBOD5 (lbs/day) Average Monthly	< 12	15	< 17	< 12	< 12	< 9	< 10	< 9	< 11	10	10	13
CBOD5 (lbs/day) Weekly Average	< 13	18	28	17	23	< 9	< 10	10	< 12	11	12	18
CBOD5 (mg/L) Average Monthly	< 3	4	< 4	< 3	< 4	< 3	< 3	< 3	< 3	3	3	4
CBOD5 (mg/L) Weekly Average	< 3	5	6	5	6	< 3	< 3	3	< 3	3	3	5
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	610	607	393	494	393	285	364	281	269	350	343	504
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	741	863	710	603	698	377	474	400	314	567	478	645
BOD5 (mg/L) Raw Sewage Influent Average Monthly	139	132	90	132	110	92	111	91	83	108	104	151
TSS (lbs/day) Average Monthly	< 6	12	< 7	< 6	< 6	< 5	< 9	< 6	< 7	9	6	9
TSS (lbs/day) Raw Sewage Influent Average Monthly	429	504	452	368	384	320	353	296	284	261	267	344
TSS (lbs/day) Raw Sewage Influent Daily Maximum	606	613	613	465	632	383	479	425	418	318	408	464

NPDES Permit Fact Sheet
Roaring Spring Borough STP

NPDES Permit No. PA0020249

TSS (lbs/day) Weekly Average	< 7	20	9	6	8	< 5	12	12	9	14	7	12
TSS (mg/L) Average Monthly	< 2	3	< 2	< 2	< 2	< 2	< 3	< 2	< 2	3	2	3
TSS (mg/L) Raw Sewage Influent Average Monthly	98	110	101	99	106	104	108	97	89	81	80	104
TSS (mg/L) Weekly Average	< 2	5	2	2	2	< 2	4	4	2	4	2	3
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 2	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	5.2	1.0	1	1	< 1	< 1	1	< 1	2	1	1
UV Intensity (mW/cm²) Instantaneous Minimum	436	397	313	327	309	323	400	369	345	229	248	283
Nitrate-Nitrite (mg/L) Average Monthly	3.26	3.667	18	3.72	3.791	4.091	5.027	4.733	4.433	4.783	4.184	3.761
Nitrate-Nitrite (lbs) Total Monthly	402	427	4.192	404	369	372	492	460	502	505	444	389
Total Nitrogen (mg/L) Average Monthly	4.904	4.9231	23	5.15	< 4.5306	5.262	6.5321	< 5.7012	5.3942	5.916	5.726	5.609
Total Nitrogen (lbs) Effluent Net Total Monthly	607	574	708	563	< 443	479	642	< 554	< 612	624	609	580
Total Nitrogen (lbs) Total Monthly	607	574	708	563	< 443	479	642	< 554	612	624	609	580
Total Nitrogen (lbs) Effluent Net Total Annual							7471					
Total Nitrogen (lbs) Total Annual							7471					
Ammonia (lbs/day) Average Monthly	4	3	3	2	< 2	1	1	1	1	2	2	3
Ammonia (mg/L) Average Monthly	0.913	0.7885	0.7102	0.6541	< 0.5623	0.4895	0.4	0.3266	0.3832	0.48	0.68	0.825
Ammonia (lbs) Total Monthly	115	93	96	72	< 58	45	35	32	43	51	73	86
Ammonia (lbs) Total Annual							871					

**NPDES Permit Fact Sheet
Roaring Spring Borough STP**

NPDES Permit No. PA0020249

TKN (mg/L) Average Monthly	1.645	1.2566	< 5	1.431	< 0.7396	1.171	1.5054	< 0.9682	< 0.9614	1.134	1.542	1.848
TKN (lbs) Total Monthly	206	147	< 156	158	< 74	106	149	< 93	< 111	119	165	191
Total Phosphorus (mg/L) Average Monthly	1.73	1.64	7	1.9	2.3	2.44	2.2	2.22	1.81	2.25	2.62	2.33
Total Phosphorus (lbs) Effluent Net Total Monthly	211	194	212	207	222	221	215	216	204	237	277	241
Total Phosphorus (lbs) Total Monthly	211	194	212	207	222	221	215	216	204	237	277	241
Total Phosphorus (lbs) Effluent Net Total Annual							1705					
Total Phosphorus (lbs) Total Annual							2568					
Bromide (mg/L) Average Monthly	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	< 0.2	0.2

3.2.1 Chesapeake Bay Truing

The table summarizes the facility's compliance/noncompliance with Chesapeake Bay cap loads.

Chesapeake Bay Annual Nutrient Summary								
Roaring Springs Borough MA WWTP								
PA0020249								
Year for Truing Period (Oct 1 - Sept 30)	Nitrogen (lbs)			Phosphorus (lbs)			Compliant with Permit Limits (Yes/No)	
	Annual Total Mass Load	Lbs Credit Purchased	Annual Net Mass Load	Annual Total Mass Load	Lbs Credit Purchased	Annual Net Mass Load	Nitrogen	Phosphorus
2020	10301		10,301	2,695	991	1,704	Yes	Yes
2021	9264		9,264	2,515	860	1,655	Yes	Yes
2022	8352		8,352	2,582	879	1,703	Yes	Yes
2023	7471		7,471	2,568	863	1,705	Yes	Yes
Notes:								
Nitrogen Annual Net Mass CAP Load =			12,785	lbs				
Phosphorus Annual Net Mass CAP Load =			1,705	lbs				

To aid in the precipitation of phosphorus within the wastewater and in order to lessen the Authority's dependence on nutrient credit trading, a chemical feed pump controlled by the EQ pumps allows for the feeding of alum as needed to the EQ tank.

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 in February 1, 2020 to May 31, 2024, the following were observed effluent non-compliances.

Summary of Non-Compliance w/NPDES Effluent Limits Beginning February 1, 2020 and Ending May 31, 2024									
NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	DISCHARGE_COMMENTS
3/16/2020	Violation of permit condition	Other Violations							
4/22/2020	Sample type not in accordance with permit	Other Violations							
4/22/2020	Sample collection less frequent than required	Other Violations	Bromide						
6/22/2020	Other	Other Violations							
6/22/2020	Violation of permit condition	Effluent	Ammonia-Nitrogen	6.817	>	6.5	mg/L	Average Monthly	
9/22/2021	Other	Other Violations							
9/22/2021	Violation of permit condition	Effluent	Fecal Coliform	1011.2	>	1000	No./100 ml	Instantaneous Maximum	
11/17/2022	Violation of permit condition	Other Violations							
7/28/2023		Unauthorized Discharges							broken 6 inch clay pipe. repaired with 6 inch plastic pipe. added a cleanout to prevent further incident's.

3.3.2 Non-Compliance- Enforcement Actions

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

Beginning in February 1, 2020 to May 31, 2024, the following were observed enforcement actions.

Summary of Enforcement Actions
Beginning February 1, 2020 and Ending May 31, 2024

ENF REGION	ENF ID	ENF TYPE	ENF TYPE DESC	ENF CREATION DATE	EXECUTED DATE	INITIATED DATE	VIOLATIONS	# OF VIOLATIONS	PENALTY AMOUNT	AMOUNT RECEIVED
SCRO	384074	CACP	Consent Assessment of Civil Penalty	02/24/2020	02/24/2020	01/30/2020	92A.44	1	\$4,672.00	\$4,672.00

3.4 Summary of Biosolids Disposal

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

2023			
Sewage Sludge / Biosolids Production Information			
	Dewatered Sewage Sludge/Biosolids		
Date (YEAR)	Tons Dewatered	% Solids	Dry Tons
January	51.36	13	6.677
February	30.73	13	3.995
March	32.58	13	4.235
April	31.84	15	4.776
May	16.63	15	2.49
June	32.97	15	4.946
July	16.31	15	2.447
August	17.15	15	2.57
September	16.12	15	2.42
October	16.92	15	2.538
November	35.09	15	5.264
December	34.87	15	5.231
Notes:			
Sewage Sludge/Biosolids disposed at the landfill at Laurel Highlands as sewage sludge			

3.5 Open Violations

No open violations existed as of June 2024.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Frankstown Branch Juniata River. The sequence of receiving streams that the Frankstown Branch Juniata River discharges into are 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 the Mifflintown Municipal Authority (PWS ID #4340008) located approximately 105 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 2024 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 2024 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life and fish consumption. The designated use has been classified as protected waters for trout stocking fishes (TSF) 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 station (WQN224). This WQN station is located approximately 24 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Frankstown Branch Juniata River at Williamsburg, PA (USGS station number 1556000). This gauge station is located approximately 22 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 22 and the stream water temperature was estimated to be 7.84 C.

The hardness of the stream was estimated from the water quality network to be 135 mg/l CaCO₃.

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 Br Juniata River at Williamsburg, PA		
Q710	47.8	ft ³ /sec	
Drainage Area (DA)	291	mi ²	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(47.8 ft ³ /sec / 291 mi ²)		
LFY =	0.1643	ft ³ /sec/mi ²	
The low flow at the subject site is based upon the DA of		1.69	mi ²
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.1643 ft ³ /sec/mi ²)(1.69 mi ²)			
Q710 =	0.278	ft ³ /sec	

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>002</u>	Design Flow (MGD)	<u>1.2</u>
Latitude	<u>40° 21' 17.14"</u>	Longitude	<u>-78° 25' 38.83"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Frankstown Branch Juniata River (TSF, MF)</u>	Stream Code	<u>16061</u>
NHD Com ID	<u>65610012</u>	RMI	<u>41.2</u>
Drainage Area	<u>47.1</u>	Yield (cfs/mi ²)	<u>0.1643</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.278</u>	Q ₇₋₁₀ Basis	<u>Streamstats/streamgauge</u>
Elevation (ft)	<u>1009</u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>11-A</u>	Chapter 93 Class.	<u>TSF, MF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Attaining Use(s) supports aquatic life and fish consumption.</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>	<u>WQN224; median July to Oct</u>	
Temperature (°C)	<u>22</u>	<u>WQN224; median July to Oct</u>	
Hardness (mg/L)	<u>135</u>	<u>WQN224; median historical</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>105</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 ₅	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

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.

The modeling point nodes utilized for this facility are summarized below.

General Data 1	(Modeling Point #1)	(Modeling Point #2)	(Modeling Point #3)- Greenfield	(Modeling Point #4)- Freedom	Units
Stream Code	16061	16061	16061	16061	
River Mile Index	41.2	39.29	44.52	39.66	miles
Elevation	1009	979	1096	987	feet
Latitude	40.354722	40.377088	40.311392	40.376352	
Longitude	-78.4275	-78.419874	-78.443606	-78.427212	
Drainage Area	47.1	90.7	37.1	55.5	sq miles
Low Flow Yield	0.1643	0.1643	0.1643	0.1643	cfs/sq mile

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 (NH₃-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 NH₃-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 NH₃-N in the discharge;
- (d) 24-hour average concentration for NH₃-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 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).

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 lead, 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.

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

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

5.3.3 Whole Effluent Toxicity (WET)

The facility is not subject to WET.

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.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. The TMDL components are illustrated using the following equation:

$$TMDL = \sum WLAs + \sum LAs + MOS$$

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 September 13, 2021.

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.

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. For facilities that have received Cap Loads in any other form, the Cap Loads will be modified accordingly when the permits are renewed.

Offsets have been incorporated into Cap Loads in several permits issued to date. From this point forward, permits will be issued with the WLAs as Cap Loads and will identify Offsets separately to facilitate nutrient trading activities and compliance with the TMDL.

Based upon the supplement the subject facility has been categorized as a Sector A discharger. The supplement defines Sector A as a sewage facility is considered significant if it has a design flow of at least 0.4 MGD.

Table 5 of the Phase 3 WIP (revised September 13, 2021) 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 this 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)	12,785
TN Delivery Ratio	0.713
TP Cap Load (lbs/yr)	1,705
TP Delivery Ratio	0.519

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, (c) Toxics, and (d) Non-Conventional Pollutants, and (e) Chapter 92a.61 targeted parameters

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection Roaring Springs MA WWTP, PA0020249			
Parameter	Permit Limitation Required by ¹ :	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	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 146 lbs/day and 25 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). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 175 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.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to recording the UV intensity.
		Effluent Limit:	No effluent limits
		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).
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 0.70 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 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.2 Nitrogen Species and Phosphorus

Summary of Proposed NPDES Parameter Details for Nitrogen Species and Phosphorus			
Roaring Springs MA WWTP, PA0020249			
Parameter	Permit Limitation Required by ¹ :	Recommendation	
Ammonia-Nitrogen	Anti-backsliding	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, effluent limits shall not exceed 37 lbs/day and 6.5 mg/l as an average monthly.
		Rationale:	Water quality modeling recommends effluent limits. Due to anti-backsliding,the current permits limits shall continue to the proposed permit.
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/month 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/month.
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
		Edffluent Limit:	Edffluent limits shall not exceed 12,785 lbs/yr.
		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
		Edffluent Limit:	Edffluent limits shall not exceed 1,705 lbs/yr.
		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 0.70 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 Implementation Guidance (Document # 391-0300-002)

5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3 Toxics

DMR monitoring data for bromide from February 2020 to April 2024 was reviewed. The maximum concentration observed was 1 mg/l. This value was used in the Toxics Management Spreadsheet. No reasonable potential was observed for bromide or any other pollutant. The NPDES application reported copper, lead, and zinc as mg/l. The certified lab data from Pace reported the data as ug/l.

6.1.3.1 Implementation of Regulation- Chapter 92a.61

Chapter 92a.61 provides provisions to DEP to monitor for pollutants that may have an impact on the quality of waters of the Commonwealth.

Based upon DEP policy directives the following pollutants shall be monitored:

- Consistent with DEP Management directives issued on March 22, 2021 and in conjunction with EPA's 2017 Triennial Review, monitoring for E. Coli shall be required. The monitoring frequency is based upon flow rate.

6.1.3.2 Summary of Toxics Monitoring/Limits

TMS did not identify toxics that were reasonable potential

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 Chesapeake Bay WIP, monitoring for nitrogen species and phosphorus shall be at least 2x/week.**
- **Due to the EPA triennial review, monitoring shall be required for E. Coli.**
- **Bromide has been eliminated from monitoring.**

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 002, Latitude 40° 21' 17.00", Longitude 78° 25' 39.00", River Mile Index 41.2, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF, MF)

Type of Effluent: Sewage Effluent

- The permittee is authorized to discharge during the period from Permit Effective Date through Permit Expiration Date.
- 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) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	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)	146	233	XXX	25	40	50	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	175	263	XXX	30	45	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
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

Outfall 002, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ultraviolet light intensity (mW/cm ²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	37	XXX	XXX	6.5	XXX	13	2/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	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 002

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

I. B. For Outfall 002, Latitude 40° 21' 17.00", Longitude 78° 25' 39.00", River Mile Index 41.2, Stream Code 16061

Receiving Waters: Frankstown Branch Juniata River (TSF, MF)

Type of Effluent: Sewage 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) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	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
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	12785	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	Report	1705	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 002

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
- UV Monitoring Conditions
- Hauled-in Waste Restrictions
- Chesapeake Bay Nutrient Definitions
- Solids Management for Non-Lagoon Treatment Systems

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment)
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment)
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 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, 386-2000-008, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 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, 386-2000-016, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 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, 386-2000-006, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP:
<input type="checkbox"/>	Other:

Attachment A

Stream Stats/Gauge Data

Table 1 13

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; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi ²)	Regulated ¹
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

26 Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

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

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis ¹	Number of years used in analysis	1-day, 10-year (ft ³ /s)	7-day, 10-year (ft ³ /s)	7-day, 2-year (ft ³ /s)	30-day, 10-year (ft ³ /s)	30-day, 2-year (ft ³ /s)	90-day, 10-year (ft ³ /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	² 1971–2008	38	28.2	109	151	131	172	153
01547500	³ 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	² 1971–2000	25	142	151	206	178	241	223
01548005	³ 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	² 1963–2008	46	520	578	1,020	678	1,330	919
01551500	³ 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	² 1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	³ 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	² 1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	³ 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	² 1974–2008	35	—	—	—	112	266	129
01563200	³ 1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	² 1974–2008	35	384	415	519	441	580	493
01563500	³ 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: PA20240530184858173000
Clicked Point (Latitude, Longitude): 40.35493, -78.42764
Time: 2024-05-30 14:49:19 -0400



Roaring Spring Municipal Authority PA0020249 Modeling Point #1 May 2024

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	10.93	percent
DRNAREA	Area that drains to a point on a stream	47.1	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.3	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.38	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	47.1	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	10.93	percent	0	99

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	3.81	ft ³ /s	38	38
30 Day 2 Year Low Flow	5.17	ft ³ /s	33	33
7 Day 10 Year Low Flow	1.8	ft ³ /s	51	51
30 Day 10 Year Low Flow	2.46	ft ³ /s	46	46
90 Day 10 Year Low Flow	3.81	ft ³ /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/>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20240530185226784000
Clicked Point (Latitude, Longitude): 40.37717, -78.41990
Time: 2024-05-30 14:52:46 -0400



Roaring Spring Municipal Authority PA0020249 Modeling Point #2 May 2024

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	29.95	percent
DRNAREA	Area that drains to a point on a stream	90.7	square miles
PRECIP	Mean Annual Precipitation	38	inches
ROCKDEP	Depth to rock	4.7	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.3	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	90.7	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	38	inches	35	50.4
STRDEN	Stream Density	2.3	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.7	feet	3.32	5.65
CARBON	Percent Carbonate	29.95	percent	0	99

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	10.8	ft ³ /s	38	38
30 Day 2 Year Low Flow	13.6	ft ³ /s	33	33
7 Day 10 Year Low Flow	6.27	ft ³ /s	51	51
30 Day 10 Year Low Flow	7.81	ft ³ /s	46	46
90 Day 10 Year Low Flow	10.5	ft ³ /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/>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20240531133944571000
Clicked Point (Latitude, Longitude): 40.31175, -78.44367
Time: 2024-05-31 09:40:05 -0400



Roaring springs MA WWTP PA0020249 Modeling Point #3 - Greenfield Twp STP May 2024

+ Collapse All

Basin Characteristics

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

Low-Flow Statistics

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	12.85	percent	0	99

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

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

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20240531134312131000
Clicked Point (Latitude, Longitude): 40.37611, -78.42588
Time: 2024-05-31 09:43:37 -0400



Roaring Spring MA WWTP PA0020249 Modeling Point #4 May 2024

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	9.27	percent
DRNAREA	Area that drains to a point on a stream	55.5	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	4.3	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.46	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	55.5	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	2.46	miles per square mile	0.51	3.1

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ROCKDEP	Depth to Rock	4.3	feet	3.32	5.65
CARBON	Percent Carbonate	9.27	percent	0	99

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

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	4.33	ft ³ /s	38	38
30 Day 2 Year Low Flow	5.9	ft ³ /s	33	33
7 Day 10 Year Low Flow	2.05	ft ³ /s	51	51
30 Day 10 Year Low Flow	2.81	ft ³ /s	46	46
90 Day 10 Year Low Flow	4.36	ft ³ /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/>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.20.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Attachment B

WQM 7.0 Modeling Output Values TMS Output

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	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
44.520	Greenfield	PA029106-24	0.800	CBOD5	20		
				NH3-N	4.74	9.48	
				Dissolved Oxygen			5
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
41.200	Roaring Springs	PA0020249-24	0.700	CBOD5	25		
				NH3-N	8.35	16.7	
				Dissolved Oxygen			5
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
39.660	Freedom	PA0110361-24	0.970	CBOD5	25		
				NH3-N	5.17	10.34	
				Dissolved Oxygen			5

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		
44.520	Greenfield	7.24	11	7.24	11	0	0		
41.200	Roaring Springs	6.62	49.57	7.95	49.57	0	0		
39.660	Freedom	6.88	12	8.56	12	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		
44.520	Greenfield	1.13	5.5	1.13	4.74	3	14		
41.200	Roaring Springs	1.07	9.68	1.19	8.35	3	14		
39.660	Freedom	1.09	6	1.24	5.17	3	14		
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)		
44.52	Greenfield	20	20	4.74	4.74	5	5	0	0
41.20	Roaring Springs	25	25	8.35	8.35	5	5	0	0
39.66	Freedom	25	25	5.17	5.17	5	5	0	0

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
11A	16061	FRANKSTOWN BRANCH JUNIATA R	44.520	1096.00	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	PA029106-24	0.8000	0.8000	0.8000	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	20.00	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	41.200	1009.00	47.10	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
Roaring Springs	PA0020249-24	0.7000	0.7000	0.7000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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	39.660	987.00	55.50	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	pH	Stream Temp	pH
	(cfs)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
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
Freedom	PA0110361-24	0.9700	0.9700	0.9700	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	6.00	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	39.290	979.00	90.70	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Stream pH	Stream Temp (°C)	Stream 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 D.O.Simulation

SWP Basin	Stream Code	Stream Name		
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
44.520	0.800	22.507	7.539	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
36.145	0.701	51.589	0.289	
<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>	
5.04	0.794	0.80	0.849	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
7.695	14.470	Tsivoglou	5	
<u>Reach Travel Time (days)</u>	Subreach Results			
0.702	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
	0.070	4.74	0.76	7.87
	0.140	4.45	0.71	7.87
	0.211	4.18	0.67	7.87
	0.281	3.93	0.63	7.87
	0.351	3.69	0.59	7.87
	0.421	3.47	0.56	7.87
	0.491	3.26	0.53	7.87
	0.561	3.06	0.50	7.87
	0.632	2.87	0.47	7.87
	0.702	2.70	0.44	7.87

<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
41.200	1.500	22.693	7.466	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
43.651	0.739	59.068	0.311	
<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>	
4.99	0.951	1.22	0.861	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
7.624	6.129	Tsivoglou	5	
<u>Reach Travel Time (days)</u>	Subreach Results			
0.302	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
	0.030	4.83	1.19	7.46
	0.060	4.68	1.16	7.33
	0.091	4.53	1.13	7.24
	0.121	4.38	1.10	7.17
	0.151	4.24	1.07	7.12
	0.181	4.11	1.05	7.09
	0.212	3.97	1.02	7.08
	0.242	3.85	0.99	7.07
	0.272	3.72	0.97	7.07
	0.302	3.60	0.94	7.09

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER			
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
39.660	2.470	22.887		7.401	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
47.390	0.762	62.208		0.358	
<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>	
5.92	1.128	1.33		0.874	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
6.967	10.712	Tsivoglou		5	
<u>Reach Travel Time (days)</u>	Subreach Results				
0.063	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)	
	0.006	5.87	1.33	6.98	
	0.013	5.82	1.32	6.99	
	0.019	5.78	1.31	7.00	
	0.025	5.73	1.30	7.01	
	0.032	5.68	1.30	7.02	
	0.038	5.64	1.29	7.03	
	0.044	5.59	1.28	7.04	
	0.051	5.54	1.28	7.05	
	0.057	5.50	1.27	7.06	
	0.063	5.46	1.26	7.08	

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	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
44.520	6.08	0.00	6.08	1.2376	0.00496	.701	36.15	51.59	0.29	0.702	22.51	7.54
41.200	7.72	0.00	7.72	2.3205	0.00271	.739	43.65	59.07	0.31	0.302	22.69	7.47
39.660	9.10	0.00	9.10	3.8211	0.00410	.762	47.39	62.21	0.36	0.063	22.89	7.40
Q1-10 Flow												
44.520	5.54	0.00	5.54	1.2376	0.00496	NA	NA	NA	0.28	0.733	22.55	7.52
41.200	7.03	0.00	7.03	2.3205	0.00271	NA	NA	NA	0.30	0.315	22.74	7.45
39.660	8.28	0.00	8.28	3.8211	0.00410	NA	NA	NA	0.35	0.066	22.95	7.38
Q30-10 Flow												
44.520	6.88	0.00	6.88	1.2376	0.00496	NA	NA	NA	0.31	0.663	22.46	7.56
41.200	8.73	0.00	8.73	2.3205	0.00271	NA	NA	NA	0.33	0.287	22.63	7.49
39.660	10.29	0.00	10.29	3.8211	0.00410	NA	NA	NA	0.38	0.060	22.81	7.42

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	1.13	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		



Discharge Information

Instructions Discharge Stream

Facility: **Roaring Springs MA WWTP** NPDES Permit No.: **PA0020249** Outfall No.: **002**

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 ₇₋₁₀	Q _h
0.7	100	6.95						

				0 if left blank		0.5 if left blank		0 if left blank			1 if left blank				
Discharge Pollutant				Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		470											
	Chloride (PWS)	mg/L		108											
	Bromide	mg/L		1											
	Sulfate (PWS)	mg/L		26.5											
	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	µg/L		3.88											
	Free Cyanide	µg/L													
	Total Cyanide	µg/L													
	Dissolved Iron	µg/L													
	Total Iron	µg/L													
	Total Lead	µg/L		0.283											
	Total Manganese	µg/L													
	Total Mercury	µg/L													
	Total Nickel	µg/L													
	Total Phenols (Phenolics) (PWS)	µg/L													
	Total Selenium	µg/L													
	Total Silver	µg/L													
	Total Thallium	µg/L													
	Total Zinc	µg/L		27.5											
	Total Molybdenum	µg/L													
	Acrolein	µg/L	<												
	Acrylamide	µg/L	<												
	Acrylonitrile	µg/L	<												
	Benzene	µg/L	<												
	Bromoform	µg/L	<												
	Carbon Tetrachloride	µg/L	<												
	Chlorobenzene	µg/L													
	Chlorodibromomethane	µg/L	<												
	Chloroethane	µg/L	<												
	2-Chloroethyl Vinyl Ether	µg/L	<												



Stream / Surface Water Information

Roaring Springs MA WWTP, NPDES Permit No. PA0020249, Outfall 002

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 ²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	016061	41.2	1009	47.1			Yes
End of Reach 1	016061	39.29	979	90.7			Yes

Q₇₋₁₀

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	41.2	0.1643										135	7.84		
End of Reach 1	39.29	0.1643										135	7.84		

Q_h

Location	RMI	LFY (cfs/mi ²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	41.2														
End of Reach 1	39.29														



Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Roaring Springs MA WWTP, NPDES Permit No. PA0020249, Outfall 002

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

☐ Hydrodynamics

☒ Wasteload Allocations

☒ AFC

CCT (min): 15

PMF: 0.528

Analysis Hardness (mg/l): 127.67

Analysis pH: 7.46

Pollutants	Stream Conc	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	16.917	17.6	84.1	Chem Translator of 0.96 applied
Total Lead	0	0		0	84.169	111	532	Chem Translator of 0.755 applied
Total Zinc	0	0		0	144.124	147	703	Chem Translator of 0.978 applied

☒ CFC

CCT (min): 53.803

PMF: 1

Analysis Hardness (mg/l): 130.7

Analysis pH: 7.58

Pollutants	Stream Conc	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	11.258	11.7	95.5	Chem Translator of 0.96 applied
Total Lead	0	0		0	3.364	4.47	36.4	Chem Translator of 0.752 applied
Total Zinc	0	0		0	148.226	150	1,225	Chem Translator of 0.986 applied

☒ THH

CCT (min): 53.803

PMF: 1

Analysis Hardness (mg/l): N/A

Analysis pH: N/A

Pollutants	Stream Conc	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 Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☒ **CRL**

CCT (min): **22.560**

PMF: **1**

Analysis Hardness (mg/l): **N/A**

Analysis pH: **N/A**

Pollutants	Stream Conc	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 Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☒ **Recommended WQBELs & Monitoring Requirements**

No. Samples/Month: **4**

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☒ **Other Pollutants without Limits or Monitoring**

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Copper	53.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	36.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	451	µg/L	Discharge Conc ≤ 10% WQBEL

Attachment C

Bromide DMR Results

Summary of Bromide DMR Data
Beginning February 2020 and Ending April 2024

Monitoring Period	Monitoring Period	DMR Received Date	Parameter Name	DMR Value		Units	Statistical Base Code
02/01/2020	02/29/2020	03/17/2020	Bromide		E	mg/L	Average Monthly
03/01/2020	03/31/2020	04/22/2020	Bromide	<	0.20	mg/L	Average Monthly
04/01/2020	04/30/2020	05/21/2020	Bromide		0.2	mg/L	Average Monthly
05/01/2020	05/31/2020	06/22/2020	Bromide		0.2	mg/L	Average Monthly
06/01/2020	06/30/2020	07/27/2020	Bromide	<	0.2	mg/L	Average Monthly
07/01/2020	07/31/2020	08/24/2020	Bromide	<	0.318	mg/L	Average Monthly
08/01/2020	08/31/2020	09/15/2020	Bromide	<	0.2	mg/L	Average Monthly
09/01/2020	09/30/2020	10/20/2020	Bromide	<	0.2	mg/L	Average Monthly
10/01/2020	10/31/2020	11/19/2020	Bromide	<	0.2	mg/L	Average Monthly
11/01/2020	11/30/2020	12/22/2020	Bromide	<	0.2	mg/L	Average Monthly
12/01/2020	12/31/2020	01/18/2021	Bromide	<	0.2	mg/L	Average Monthly
01/01/2021	01/31/2021	02/23/2021	Bromide	<	0.2	mg/L	Average Monthly
02/01/2021	02/28/2021	03/22/2021	Bromide		0.2	mg/L	Average Monthly
03/01/2021	03/31/2021	04/27/2021	Bromide		0.2	mg/L	Average Monthly
04/01/2021	04/30/2021	05/22/2021	Bromide		0.2	mg/L	Average Monthly
05/01/2021	05/31/2021	06/24/2021	Bromide		0.2	mg/L	Average Monthly
06/01/2021	06/30/2021	07/20/2021	Bromide		0.2	mg/L	Average Monthly
07/01/2021	07/31/2021	08/23/2021	Bromide		0.2	mg/L	Average Monthly
08/01/2021	08/31/2021	09/22/2021	Bromide		0.2	mg/L	Average Monthly
09/01/2021	09/30/2021	10/26/2021	Bromide		0.2	mg/L	Average Monthly
10/01/2021	10/31/2021	11/24/2021	Bromide		0.2	mg/L	Average Monthly
11/01/2021	11/30/2021	12/14/2021	Bromide		0.2	mg/L	Average Monthly
12/01/2021	12/31/2021	01/21/2022	Bromide		0.2	mg/L	Average Monthly
01/01/2022	01/31/2022	02/23/2022	Bromide		0.2	mg/L	Average Monthly
02/01/2022	02/28/2022	03/25/2022	Bromide		0.2	mg/L	Average Monthly
03/01/2022	03/31/2022	04/22/2022	Bromide		1	mg/L	Average Monthly
04/01/2022	04/30/2022	05/23/2022	Bromide		0.2	mg/L	Average Monthly
05/01/2022	05/31/2022	06/23/2022	Bromide		0.2	mg/L	Average Monthly
06/01/2022	06/30/2022	07/22/2022	Bromide	<	0.2	mg/L	Average Monthly
07/01/2022	07/31/2022	08/22/2022	Bromide	<	0.2	mg/L	Average Monthly
08/01/2022	08/31/2022	09/23/2022	Bromide		0.2	mg/L	Average Monthly
09/01/2022	09/30/2022	10/21/2022	Bromide	<	0.2	mg/L	Average Monthly
10/01/2022	10/31/2022	11/17/2022	Bromide		0.2	mg/L	Average Monthly
11/01/2022	11/30/2022	12/20/2022	Bromide		0.2	mg/L	Average Monthly
12/01/2022	12/31/2022	01/16/2023	Bromide		0.2	mg/L	Average Monthly
01/01/2023	01/31/2023	02/21/2023	Bromide		0.2	mg/L	Average Monthly
02/01/2023	02/28/2023	03/24/2023	Bromide		0.2	mg/L	Average Monthly
03/01/2023	03/31/2023	04/20/2023	Bromide		0.2	mg/L	Average Monthly
04/01/2023	04/30/2023	05/16/2023	Bromide		0.2	mg/L	Average Monthly
05/01/2023	05/31/2023	06/12/2023	Bromide	<	0.2	mg/L	Average Monthly
06/01/2023	06/30/2023	07/20/2023	Bromide		0.2	mg/L	Average Monthly
07/01/2023	07/31/2023	08/18/2023	Bromide	<	0.2	mg/L	Average Monthly
08/01/2023	08/31/2023	09/21/2023	Bromide	<	0.2	mg/L	Average Monthly
09/01/2023	09/30/2023	10/23/2023	Bromide	<	0.2	mg/L	Average Monthly
10/01/2023	10/31/2023	11/21/2023	Bromide	<	0.2	mg/L	Average Monthly
11/01/2023	11/30/2023	12/18/2023	Bromide	<	0.2	mg/L	Average Monthly
12/01/2023	12/31/2023	01/22/2024	Bromide	<	0.2	mg/L	Average Monthly
01/01/2024	01/31/2024	02/16/2024	Bromide	<	0.2	mg/L	Average Monthly
02/01/2024	02/29/2024	03/13/2024	Bromide	<	0.2	mg/L	Average Monthly
03/01/2024	03/31/2024	04/18/2024	Bromide	<	0.2	mg/L	Average Monthly
04/01/2024	04/30/2024	05/21/2024	Bromide	<	0.2	mg/L	Average Monthly
				Max	1	mg/l	