pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088226**
Facility Type	**Municipal**	APS ID	**44918**
Major / Minor	**Minor**	Authorization ID	**1403416**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**South Woodbury Township Bedford County**	Facility Name	**South Woodbury Township STP**
Applicant Address	125 North Road	Facility Address	1401 Woodbury Pike
	New Enterprise, PA 16664-9121		Loysburg, PA 16664
Applicant Contact	Rachel White	Facility Contact	Rachel White
Applicant Phone	(814) 766-2900	Facility Phone	(814) 766-2900
Client ID	118219	Site ID	534910
Ch 94 Load Status	Not Overloaded	Municipality	South Woodbury Township
Connection Status	No Limitations	County	Bedford
Date Application Received	July 18, 2022	EPA Waived?	Yes
Date Application Accepted	July 25, 2022	If No, Reason	

Purpose of Application: This is an application for a NPDES renewal.

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the South Woodbury Township WWTP located at 1401 Woodbury Pike, Loysburg, PA 16664 in Bedford County, municipality of South Woodbury Township. The existing permit became effective on March 1, 2018 and expires(d) on April 30, 2023. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on July 18, 2022.

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 0.250 MGD average annual 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 Bedford County Commissioners and South Woodbury Township Supervisors and the notice was received by the parties on June 24, 2022 and June 27, 2022. 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 Yellow Creek. The sequence of receiving streams that the Yellow Creek discharges into are Raystown Branch Juniata River, Juniata River,

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	August 12, 2022
X		Daniel W. Martin, P.E. / Environmental Engineer Manager Daniel W. Martin	August 24, 2022

Summary of Review

and 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 high-quality cold water fishes (HQ-CWF) and migratory fishes (MF). The receiving stream is a Class A wild trout stream but not both a Class A and wild trout stream. No Class A Wild Trout fisheries are impacted by this discharge. The presence of high quality and/or exceptional value surface waters triggers the need for an additional evaluation of anti-degradation requirements.

Yellow Creek is a Category 2 stream listed in the 2022 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life. Just upstream of the subject facility, the receiving waters is impaired for aquatic life due to siltation from agriculture. The receiving waters is subject to the Yellow Creek Watershed 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 EPA triennial review, monitoring for E. Coli will be required 1x/month.**
- **Copper effluent limit has been reduced to not exceed 0.24 lbs/day and 0.11 mg/l. Monitoring has been reduced to 2x/month.**
- **Monitoring for total lead shall be 1x/quarter.**
- **Nitrogen species shall be monitored 1x/wk.**

Sludge use and disposal description and location(s): No sludge disposal was reported in 2021 and from January 2022 to June 2022.

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:	South Woodbury Township WWTP
NPDES Permit #	PA0088226
Physical Address:	1401 Woodbury Pike Loysburg, PA 16664
Mailing Address:	125 North Road New Enterprise, PA 16664
Contact:	Rachel White Township Secretary swtbc@embarqmail.com
Consultant:	Brock Bowers Keller Engineers, Inc. bbowers@keller-engineers.com

1.2 Permit History

Permit submittal included the following information.

- NPDES Application
- Flow Diagrams
- Effluent Sample Data

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 1401 Woodbury Pike, Loysburg, PA 16664. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

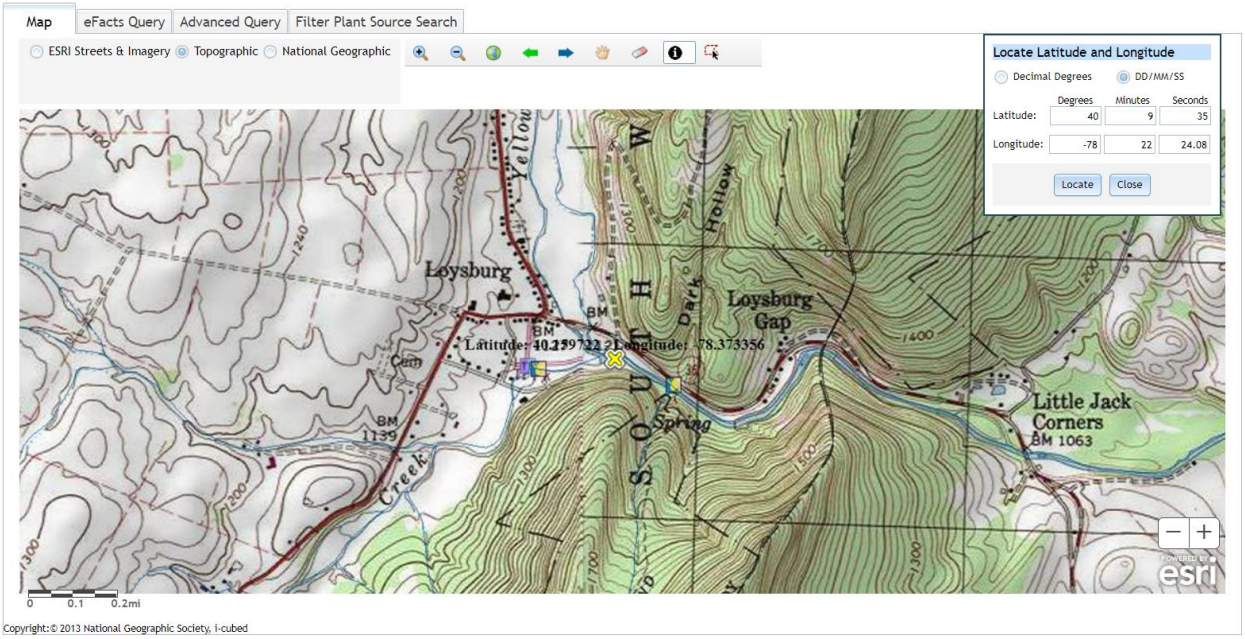
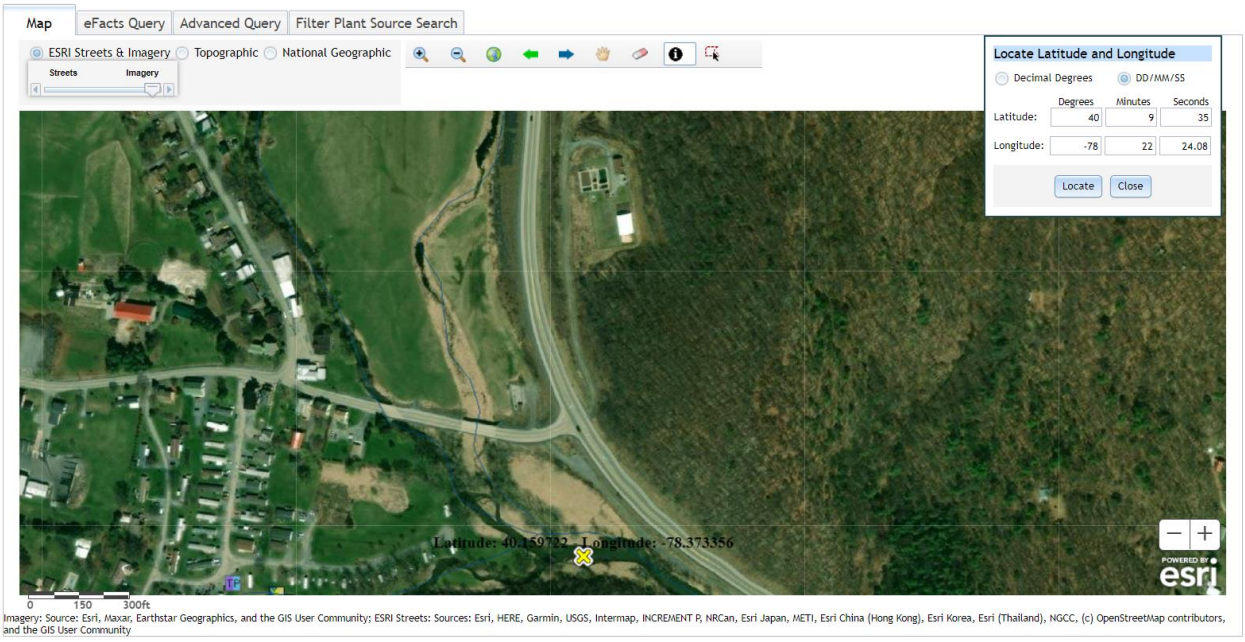


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The following table summarizes the municipalities that discharge flow to the wastewater treatment plant.

Municipalities Served	Flow Contribution	Population
South Woodbury Township	55%	2050
Woodbury Township	35%	1200
Woodbury Borough	10%	317
Total	100%	

The facility does not have any industrial/commercial users.

The facility does not have an EPA-approved pretreatment program.

The facility did not receive hauled-in wastes nor anticipates any hauled in wastes in the next five years.

2.2 Description of Wastewater Treatment Process

The subject facility is a 0.25 MGD annual average design flow facility. The hydraulic design capacity is 0.265 MGD. The wastewater treatment plant is designed and operated using the Schreiber Process – Counter Current Low Load Aeration system. This process includes aeration basins (2), secondary clarifier (2), a sludge holding tank, a sludge drying bed, a uv disinfection unit, and post aeration. An equalization tank controls overflows from the sludge holding tank to the splitter box at the plant headworks. Sludge recycle pumps return up to 150% of the flow to the aeration tank. An ultraviolet disinfection unit with a processing capacity of 0.7 MGD provides for disinfection.

The facility is being evaluated for flow, pH, dissolved oxygen, CBOD5, TSS, fecal coliform, ultraviolet disinfection intensity, nitrogen species, phosphorus, and total copper. The existing permits limits for the facility is summarized in Section 2.4.

The treatment process is summarized in the table.

Treatment Facility Summary

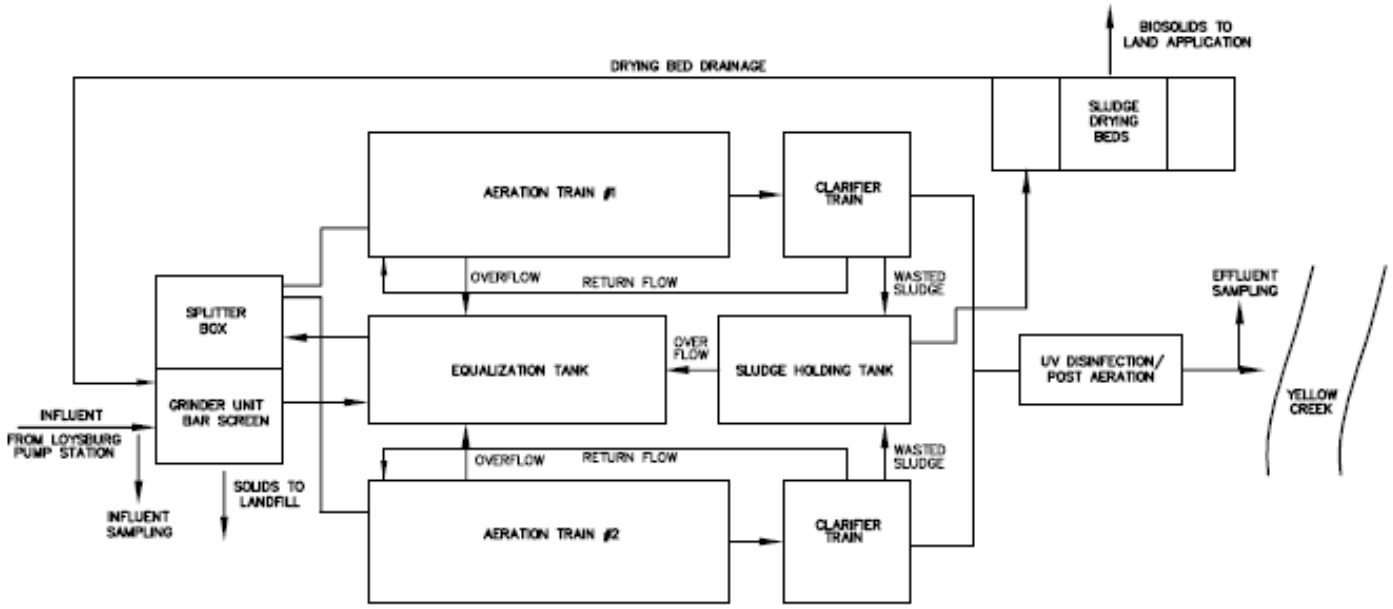
Treatment Facility Name: S Woodbury Township STP

WQM Permit No.	Issuance Date
0500407	9/14/2000
0500407	11/05/2004 A-1
0500407	12/10/2014 A-2

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Counter Current With Solids Removal	Ultraviolet	0.25

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.265	459	Not Overloaded	Dewatering	Land Application

A schematic of the process is shown.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.25
Latitude	40º 9' 32.00"	**Longitude**	-78º 22' 15.00"
Wastewater Description:	Sewage Effluent		

2.3.1 Operational Considerations- Chemical Additives

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

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

- The facility did not list any chemical used at the facility.

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

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

I. A. For Outfall 001 , **Latitude** 40° 9' 32" , **Longitude** 78° 22' 15" , **River Mile Index** 10.3 , **Stream Code** 13809

Receiving Waters: Yellow Creek

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **May 1, 2018** through **April 30, 2023**.
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)	Required
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
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	6.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	21	31	XXX	10.0	15.0	20	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	21	31	XXX	10.0	15.0	20	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 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Ammonia-Nitrogen Nov 1 - Apr 30	9.0	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	3.0	XXX	XXX	1.5	XXX	3	1/week	24-Hr Composite
Total Phosphorus	2.1	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite
Copper, Total	0.41	XXX	XXX	0.2	XXX	0.4	1/week	24-Hr Composite

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

at Outfall 001

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

I. B. For Outfall 001 , **Latitude** 40° 9' 32" , **Longitude** 78° 22' 15" , **River Mile Index** 10.3 , **Stream Code** 13809

Receiving Waters: Yellow Creek

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **May 1, 2018** through **April 30, 2023**.
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	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/month	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	Report	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	Report	XXX	XXX	XXX	XXX	1/month	Calculation

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

at Outfall 001

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

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

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

The DEP inspector noted the following during the inspection.

11/14/2018:

- Floating sludge was noticed in the last compartment of the UV tank. Tank should be checked for solids build-up and cleaned as necessary. Clarifier tank showed signs of sludge build-up. The UV intensity meter had been out of service for about a month. The meter needed a new fuse. The bottom of the UV tank caved in earlier in the year. The operator had to temporarily use chlorine for disinfection while the tank was replaced

11/18/2019:

- There was nothing significant to report.

07/08/2020:

- The facility was issued a Notice of Violation (NOV) on May 29, 2020 for exceeding the permit limit for Total Suspended Solids (TSS) each month from December 2019 through April 2020. The DMR for May 2020 showed violations for the TSS monthly average and weekly average. An NOV response was submitted to the Department by contract operator M&B Environmental on behalf the South Woodbury Township. The response attributed the TSS violations to a broken pipe connecting

the final clarifier and the UV tank. The facility stated that the violations were caused by a separation of the pipe that connects the final clarifier to the UV tank and because of disturbances caused by the investigation and repair of the pipe. The operator mentioned that there were major structural repairs made to the UV tank last year and he believes that setting of the tanks caused the pipe to separate. The leaking pipe was discovered in April 2020 after adding flow meters to the influent pumps and comparing the results to the effluent discharge readings. The UV tank was also cleaned out in June. The facility also mentioned that an additional problem with the UV piping was discovered and it was causing water to flow into the unused UV tank. A temporary repair was made to the pipe and that it would be permanently repaired in the near future.

05/11/2021:

- A Discharge Monitoring Report (DMR) for March 2021 showed three permit violations. The effluent limits for TSS monthly average concentration, TSS average weekly concentration and CBOD average weekly concentration were exceeded. Comments included in the report attribute the violations to malfunctioning valves for the sludge wasting lines.
- The facility stated that two wasting valves had become difficult to operate and the facility believes they are partially clogged. The operator saw an increase of rags entering the plant and thinks they were causing clogging problems with pipes and valves. The township was arranging for a contractor to excavate and inspect the valves. The township was also purchasing a spare valve to have on hand in case replacement is necessary. To compensate for the partial clogging, the facility has increased usual sludge wasting time by about 15 minutes. Another repair was being made to an air line. A leak was discovered in the line leading to the post aeration tank.

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 0.1061 MGD in September 2021. The design capacity of the treatment system is 0.265 MGD.

The off-site laboratory used for the analysis of the parameters was Fairway Laboratories located at 2019 Ninth Avenue, Altoona, PA 16603.

DMR Data for Outfall 001 (from July 1, 2021 to June 30, 2022)

Parameter	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21
Flow (MGD) Average Monthly	0.0702	0.0891	0.0829	0.1037	0.0899	0.0723	0.0731	0.0681	0.0691	0.1061	0.0747	0.0668
Flow (MGD) Daily Maximum	0.1112	0.2093	0.1518	1.00	0.2089	0.1071	0.0928	0.103	0.095	0.3483	0.1951	0.096
pH (S.U.) Daily Minimum	7.0	6.9	6.9	7.0	6.8	6.7	7.0	7.0	7.0	7.0	6.9	6.8
pH (S.U.) Instantaneous Maximum	7.4	7.4	7.4	7.5	7.3	7.6	7.5	7.6	7.9	7.6	7.7	7.5
DO (mg/L) Daily Minimum	5.9	6.0	7.3	6.5	6.2	7.6	7.0	7.2	7.3	6.0	6.1	6.5
CBOD5 (lbs/day) Average Monthly	< 3.0	< 2	< 3	< 2	< 3	< 4	< 2	< 2.0	< 2	< 4	< 3	< 2
CBOD5 (lbs/day) Weekly Average	5	< 2	4	< 2	5	6	3	5.0	2	9	8	< 2
CBOD5 (mg/L) Average Monthly	< 4.3	< 3.1	< 4.4	< 3.0	< 4.9	< 5.5	< 3.5	< 4.3	< 3.3	< 3.0	< 3.7	< 3.0
CBOD5 (mg/L) Weekly Average	6.1	3.6	7.1	< 3.0	6.8	8.3	5.4	8.2	4.3	3.0	5.8	< 3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	102	149	230	131	71	88	93	89	57	68	77	104
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	135	198	307	185	93	119	161	128	60	116	152	176
BOD5 (mg/L) Raw Sewage Influent Average Monthly	163	237	343	209	126	132	150	89.0	99	64	105	198
TSS (lbs/day) Average Monthly	2	5	< 1	3	2	10	3	< 5.0	4	< 6	7	< 1
TSS (lbs/day) Raw Sewage Influent Average Monthly	94	162	272	110	26	36	65	54	46	43	55	119

TSS (lbs/day) Raw Sewage Influent Daily Maximum	126	322	418	253	36	58	185	72	64	68	97	213
TSS (lbs/day) Weekly Average	3	9	2	3	2	30	5	10.0	6	22	22	2
TSS (mg/L) Average Monthly	3.4	8.3	< 1.7	4.0	2.9	14.4	5.4	< 8.3	6.6	< 3.1	8.2	< 2.8
TSS (mg/L) Raw Sewage Influent Average Monthly	150	241	400	167	44	54	103	54.0	81	42	81	209
TSS (mg/L) Weekly Average	5.6	12.4	2.0	5.2	4.4	42.4	8.4	18.0	11.2	7.6	16.4	3.6
Fecal Coliform (No./100 ml) Geometric Mean	< 2	1	< 1	< 2	< 1	< 1	< 1	< 1.0	1	< 6	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	6.3	< 1	< 1	< 4	< 2	3.1	1	< 1.0	2	727	2	1
UV Intensity (mW/cm²) Daily Minimum	1.9	1.2	2	0.8	1.2	1.1	2.3	1.8	2.8	1.0	2.4	3.6
Nitrate-Nitrite (mg/L) Average Monthly	< 46.89	< 42.02	< 42.15	< 31.07	< 34.37	< 41.86	< 46.66	< 46.93	< 45.74	< 33.63	< 41	< 47.5
Nitrate-Nitrite (lbs) Total Monthly	< 30	< 771	< 857	< 628	< 558	< 859	< 889	< 806	< 815	< 1258	< 916	< 815
Total Nitrogen (mg/L) Average Monthly	< 47.39	< 42.52	< 42.85	< 33.22	< 34.75	< 42.36	< 47.16	< 47.43	< 46.24	< 34.19	< 42.646	< 48.25
Total Nitrogen (lbs) Effluent Net Total Monthly	< 908	< 780	< 867	< 670	< 565	< 869	< 899	< 815	< 824	< 1281	< 944	< 828
Total Nitrogen (lbs) Total Monthly	< 30	< 780	< 867	< 22	< 565	< 869	< 899	< 815	< 824	< 1281	< 944	< 828
Total Nitrogen (lbs) Effluent Net Total Annual										< 10243		
Total Nitrogen (lbs) Total Annual										< 10243		
Ammonia (lbs/day) Average Monthly	< 0.05	< 0.06	< 0.07	< 1.7	< 0.3	< 0.1	< 0.06	< 0.06	< 0.06	< 0.9	< 0.07	< 0.2

Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.01	< 2.8	< 0.4	< 0.2	< 0.1	< 0.1	< 0.1	0.4	< 0.1	< 0.3
Ammonia (lbs) Total Monthly	< 1.5	< 1.9	< 2.1	< 51.7	< 7.5	< 3.1	< 1.9	< 1.7	< 1.8	< 27.5	< 2.2	< 5.1
Ammonia (lbs) Total Annual										< 64		
TKN (mg/L) Average Monthly	< 0.5	< 0.5	< 42.65	< 2.2	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5	< 0.56	< 1.646	< 0.5
TKN (lbs) Total Monthly	< 10	< 10	< 867	< 42	< 8	< 10	< 10	< 9.0	< 9	< 23.0	< 27	< 9
Total Phosphorus (lbs/day) Average Monthly	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.8	0.4	0.3
Total Phosphorus (mg/L) Average Monthly	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.6	0.6	0.5	0.5	0.5
Total Phosphorus (lbs) Effluent Net Total Monthly	5.0	5.9	5.8	5.3	5.1	10.8	9.0	10.7	10.4	25	13.5	8.5
Total Phosphorus (lbs) Total Monthly	5.0	5.9	5.8	5.3	5.1	10.8	9.0	10.7	10.4	25	13.5	8.5
Total Phosphorus (lbs) Effluent Net Total Annual										95		
Total Phosphorus (lbs) Total Annual										95		
Total Copper (lbs/day) Average Monthly	0.02	0.01	0.01	< 0.20	0.009	0.01	0.01	0.02	0.02	0.03	0.02	0.01
Total Copper (mg/L) Average Monthly	0.03	0.02	0.02	< 0.01	0.02	0.02	0.02	0.03	0.03	0.02	0.03	0.03

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 May 1, 2018 to August 4, 2022, the following were observed effluent non-compliances.

NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	NON_COMPL_CATEGORY_DESC	PARAMETER	SAMPLE_VALUE	VIOLATION_CONDITION	PERMIT_VALUE	UNIT_OF_MEASURE	STAT_BASE_CODE	FACILITY_COMMENTS
6/25/2018	Violation of permit condition	Effluent	Total Phosphorus	1.2	>	1	mg/L	Average Monthly	The bottom of the UV tank rusted out. The permittee pumped the tank out to start making repairs without notifying the operator. The operator was pulling samples at the time. We suspect that some of the stirred up sediments at thet bottom of the tank got into the samples, which is why the TSS and total phosphorus were high.
6/25/2018	Violation of permit condition	Effluent	Total Suspended Solids	10.3	>	10	mg/L	Average Monthly	The bottom of the UV tank rusted out. The permittee pumped the tank out to start making repairs without notifying the operator. The operator was pulling samples at the time. We suspect that some of the stirred up sediments at thet bottom of the tank got into the samples, which is why the TSS and total phosphorus were high.
6/25/2018	Violation of permit condition	Effluent	Total Suspended Solids	30.8	>	15	mg/L	Weekly Average	The bottom of the UV tank rusted out. The permittee pumped the tank out to start making repairs without notifying the operator. The operator was pulling samples at the time. We suspect that some of the stirred up sediments at thet bottom of the tank got into the samples, which is why the TSS and total phosphorus were high.
7/25/2018	Violation of permit condition	Effluent	Total Phosphorus	1.1	>	1	mg/L	Average Monthly	Unknown cause of high phosphorus. We are looking into it.
8/22/2018	Sample collection less frequent than required	Other Violations	Total Suspended Solids						
8/22/2018	Violation of permit condition	Effluent	Total Phosphorus	1.6	>	1	mg/L	Average Monthly	Aluminum chloride pump was broken. It has been repaired.
8/22/2018	Violation of permit condition	Effluent	Total Suspended Solids	12	>	10	mg/L	Average Monthly	The UV tank was leaking. We believe the leak to be the source of the high TSS on the sample taken on 7/2. The tank has been repaired.
8/22/2018	Violation of permit condition	Effluent	Total Suspended Solids	25.2	>	15	mg/L	Weekly Average	The UV tank was leaking. We believe the leak to be the source of the high TSS on the sample taken on 7/2. The tank has been repaired.
9/26/2018	Violation of permit condition	Effluent	Total Suspended Solids	16.4	>	15	mg/L	Weekly Average	We are unsure of the cause of the high TSS. Around that time the plant was having power outages due to the weather, which could have had an impact on the TSS. The rest of the samples taken for the month were at or below 4.8 mg/L.
12/24/2018	Sample collection less frequent than required	Other Violations	Ultraviolet light intensity						
1/25/2019	Violation of permit condition	Effluent	Carbonaceous Biochemical Oxygen Demand (CBOD5)	18.1	>	15	mg/L	Weekly Average	Unknown cause of high CBOD5 on the week of 12/23/18. Subsequent samples have been within permitted limits.
2/25/2019	Violation of permit condition	Effluent	Total Suspended Solids	14.5	>	10	mg/L	Average Monthly	Fluctuating temperatures and inconsistent flows are causing settling issues with the biomass.
2/25/2019	Violation of permit condition	Effluent	Total Suspended Solids	40	>	31	lbs/day	Weekly Average	Fluctuating temperatures and inconsistent flows are causing settling issues with the biomass.
2/25/2019	Violation of permit condition	Effluent	Total Suspended Solids	62	>	15	mg/L	Weekly Average	Fluctuating temperatures and inconsistent flows are causing settling issues with the biomass.
5/28/2019	Violation of permit condition	Effluent	Total Phosphorus	1.5	>	1	mg/L	Average Monthly	Unknown cause of high total phosphorus. We are currently troubleshooting this issue.
5/28/2019	Violation of permit condition	Effluent	Total Suspended Solids	20.2	>	15	mg/L	Weekly Average	Unknown cause of high total suspended solids. Subsequent samples have been within the permit's limits.

6/25/2019	Violation of permit condition	Effluent	Ammonia-Nitrogen	< 3.3	>	1.5	mg/L	Average Monthly	The chemical feed pump was not feeding enough chemical to properly treat the plant. The pump was replaced.
6/25/2019	Violation of permit condition	Effluent	Total Phosphorus	1.5	>	1	mg/L	Average Monthly	The chemical feed pump was not feeding enough chemical to properly treat the plant. The pump was replaced.
7/24/2019	Violation of permit condition	Effluent	Total Phosphorus	1.7	>	1	mg/L	Average Monthly	We recently replaced the chemical feed pump to deal with the high phosphorus. We are now working on dialing in the chemical feed rate of the new pump because we do not think that this pump is dosing enough.
8/28/2019	Violation of permit condition	Effluent	Total Phosphorus	1.4	>	1	mg/L	Average Monthly	We were having issues with the chemical feed pump, so we replaced the pump with a new pump. The new pump was made by a different manufacturer. We were dialing in the chemical feed rate with the new pump, which we got straightened out in the middle of the month. By the third sample (on 7/17/19) we went from a total phosphorus of 2.3 mg/L to 0.922 mg/L. The phosphorus has remained below the 1.0 mg/L limit since then.
1/28/2020	Violation of permit condition	Effluent	Total Suspended Solids	16.4	>	15	mg/L	Weekly Average	Unknown cause of high TSS. The operator suspects that it was due to cold temperatures at the plant, which prevented settling, however he is unsure if that was the cause. All previous samples in the month were with permit.
2/24/2020	Violation of permit condition	Effluent	Total Suspended Solids	22.8	>	15	mg/L	Weekly Average	Unknown cause of the high weekly TSS. The plant has issues with settling when the temperature fluctuates above and below freezing, which it was doing on the days around when the high sample was taken (January 2). All subsequent samples were within permitted limits.
3/25/2020	Violation of permit condition	Effluent	Total Suspended Solids	20	>	15	mg/L	Weekly Average	We are unsure why the TSS was elevated in the sample on the week of 2/23/2020. The operator stated that he had cleaned the sides of the tanks the day before, which may have stirred up solids that had previously settled out. All other samples taken in the month were within the permitted limits.
4/24/2020	Violation of permit condition	Effluent	Total Suspended Solids	13	>	10	mg/L	Average Monthly	We discovered the line between the clarifier and the UV tank was leaking solids into the tank. The solids built up in the UV tank, and washed out during a period of high flow, which was when we were sampling. The line has since been repaired.
4/24/2020	Violation of permit condition	Effluent	Total Suspended Solids	16.2	>	15	mg/L	Weekly Average	We discovered the line between the clarifier and the UV tank was leaking solids into the tank. The solids built up in the UV tank, and washed out during a period of high flow, which was when we were sampling. The line has since been repaired.
5/27/2020	Violation of permit condition	Effluent	Total Suspended Solids	11.1	>	10	mg/L	Average Monthly	The line between the clarifier and the UV tank was leaking and letting solids (sediment) in. The solids built up and were washed out during a period of high flow, which caused the elevated TSS. The line has been repaired.
5/27/2020	Violation of permit condition	Effluent	Total Suspended Solids	15.6	>	15	mg/L	Weekly Average	The line between the clarifier and the UV tank was leaking and letting solids (sediment) in. The solids built up and were washed out during a period of high flow, which caused the elevated TSS. The line has been repaired.
6/25/2020	Violation of permit condition	Effluent	Total Suspended Solids	12.3	>	10	mg/L	Average Monthly	The UV tank had accumulated debris from a break in the pipe between the clarifier and the UV tank. We suspect that the high TSS is from the accumulated debris washing out. We have repaired the pipe and cleaned out the UV tank.
6/25/2020	Violation of permit condition	Effluent	Total Suspended Solids	15.4	>	15	mg/L	Weekly Average	The UV tank had accumulated debris from a break in the pipe between the clarifier and the UV tank. We suspect that the high TSS is from the accumulated debris washing out. We have repaired the pipe and cleaned out the UV tank.
4/21/2021	Violation of permit condition	Effluent	Carbonaceous Biochemical Oxygen Demand (CBOD5)	33.1	>	15	mg/L	Weekly Average	We were having issues with the wasting valves not functioning correctly. The valves (and lines) are partially clogged and not wasting at the normal rate. The operator has increased the amount of time that he wastes at the plant to account for this change.
4/21/2021	Violation of permit condition	Effluent	Total Suspended Solids	< 10.8	>	10	mg/L	Average Monthly	We were having issues with the wasting valves not functioning correctly. The valves (and lines) are partially clogged and not wasting at the normal rate. The operator has increased the amount of time that he wastes at the plant to account for this change.
4/21/2021	Violation of permit condition	Effluent	Total Suspended Solids	47	>	15	mg/L	Weekly Average	We were having issues with the wasting valves not functioning correctly. The valves (and lines) are partially clogged and not wasting at the normal rate. The operator has increased the amount of time that he wastes at the plant to account for this change.
9/24/2021	Violation of permit condition	Effluent	Total Suspended Solids	16.4	>	15	mg/L	Weekly Average	Due to heavy rains the flow was elevated resulting in higher TSS levels than normal
12/20/2021	Violation of permit condition	Effluent	Total Suspended Solids	18	>	15	mg/L	Weekly Average	
2/16/2022	Violation of permit condition	Effluent	Total Suspended Solids	14.4	>	10	mg/L	Average Monthly	A broken belt on a blower caused a higher TSS result. The operator repaired the belt and all samples returned to normal values.
2/16/2022	Violation of permit condition	Effluent	Total Suspended Solids	42.4	>	15	mg/L	Weekly Average	A broken belt on a blower caused a higher TSS result. The operator repaired the belt and all samples returned to normal values.
7/20/2022	Violation of permit condition	Effluent	Dissolved Oxygen	5.9	<	6	mg/L	Daily Minimum	There was a power outage and the blowers were off. The operator fixed the issue.

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 May 1, 2018 to August 4, 2022, the following were observed enforcement actions.

ENF ID	ENF TYPE	ENF TYPE DESC	DATE	EXECUTED DATE	VIOLATIONS	ENF FINAL STATUS	DATE
378636	NOV	Notice of Violation	09/09/2019	09/05/2019	92A.44	Comply/Closed	07/27/2020
386031	NOV	Notice of Violation	05/29/2020	05/29/2020	92A.44		
368566	NOV	Notice of Violation	10/19/2018	10/12/2018	92A.44	Comply/Closed	11/14/2018

3.4 Summary of Biosolids Disposal

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

No sludge disposal was reported in 2021 and from January 2022 to June 2022.

3.5 Open Violations

No open violations existed as of August 2022.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Yellow Creek. The sequence of receiving streams that the Yellow Creek discharges into are Raystown Branch Juniata River, Juniata River, and 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 Saxton Municipal Water Authority (PWS ID #4050021) located approximately 39 miles downstream of the subject facility on the Raystown Branch 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 receiving stream is a Class A wild trout stream but not both a Class A and wild trout stream. No Class A Wild Trout fisheries are impacted by this discharge.

4.4 2022 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 2022 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life. The Integrated Water Report indicates that the Yellow River segment just upstream of the discharge point is listed as Category 4a and is impaired for aquatic life due to siltation from agriculture. The designated use has been classified as protected waters for high-quality cold water fishes (CWF) 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 Raystown Branch Juniata River at Saxton, PA (WQN223). This WQN station is located approximately 20 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Raystown Branch Juniata River at Saxton, PA (USGS station number 1562000). This gauge station is located approximately 20 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 8.0 and the stream water temperature was estimated to be 23.3 C.

The hardness of the stream was estimated from the water quality network to be 96 mg/l $CaCO_3$.

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

Gauge Station Data			
USGS Station Number	1562000		
Station Name	Raystown Branch Juniata River at Saxton, PA		
Q710	67.1	ft^3/sec	
Drainage Area (DA)	756	mi^2	
Calculations			
The low flow yield of the gauge station is:			
Low Flow Yield (LFY) = Q710 / DA			
LFY =	(67.1 ft^3/sec / 756 mi^2)		
LFY =	0.0888	$ft^3/sec/mi^2$	
The low flow at the subject site is based upon the DA of		69.3	mi^2
Q710 = (LFY@gauge station)(DA@Subject Site)			
Q710 = (0.0888 $ft^3/sec/mi^2$)(69.3 mi^2)			
Q710 =	6.151	ft^3/sec	

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.25
Latitude	40º 9' 32.41"	Longitude	-78º 22' 16.63"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Yellow Creek (HQ-CWF, MF)	Stream Code	13809
NHD Com ID	65843933	RMI	10.3
Drainage Area	69.3	Yield (cfs/mi^2)	0.0888
Q_{7-10} Flow (cfs)	6.151	Q_{7-10} Basis	StreamStats/streamgauge
Elevation (ft)	1110	Slope (ft/ft)	
Watershed No.	11-D	Chapter 93 Class.	HQ-CWF, MF
Existing Use	Same as Chapter 93 class	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) supports aquatic life. Just upstream of facility impaired for aquatic life		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	Final	Name	Yellow Creek Watershed

Background/Ambient Data		Data Source
pH (SU)	8	Median July to Sept.; WQN 223
Temperature (°C)	23.3	Median July to Sept.; WQN 223
Hardness (mg/L)	96	Historical median; WQN 223
Other:		

Nearest Downstream Public Water Supply Intake		Saxton Municipal Water Authority	
PWS Waters	Raystown Branch Juniata River	Flow at Intake (cfs)	
PWS RMI	38.6	Distance from Outfall (mi)	19

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 Chorine (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)	***Input Value***	***Units***
Stream Code	13809	
River Mile Index	10.3	miles
Elevation	1110	feet
Latitude	40.159722	
Longitude	-78.373356	
Drainage Area	69.3	sq miles
Low Flow Yield	0.0888	cfs/sq mile
General Data 2 (Modeling Point #2)	***Input Value***	***Units***
Stream Code	13809	
River Mile Index	7.68	miles
Elevation	985.15	feet
Latitude	40.150194	
Longitude	-78.335054	
Drainage Area	78.8	sq miles
Low Flow Yield	0.0888	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 NH_3-N in mg/l for the discharge(s) in the simulation.

Four types of limits may be recommended. The limits are

(a) a *minimum concentration for DO in the discharge as 30-day average;*
(b) a 30-day average concentration for CBOD5 in the discharge;
(c) a 30-day average concentration for the NH_3-N in the discharge;
(d) *24-hour average concentration for NH_3-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:

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

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 discharges into a local TMDL- Yellow Creek Watershed TMDL.

Nutrients and sediment have been identified as the pollutants causing designated use impairments in the Yellow Creek Watershed, with the source listed as agricultural practices. The remaining sources are nonpoint in nature, and are found throughout the watershed.

There is one point source addressed in these TMDL segments. The South Woodbury Township Wastewater Treatment Plant discharges suspended solids and phosphorus, and is included in the wasteload allocation (WLA). The WLA portion of the TMDL equation is the total loading of a pollutant that is assigned to point sources.

The instantaneous maximums for suspended solids and phosphorus are 20.0 mg/L and 2.0 mg/L, respectively, which was included in the AVGWLF modeling runs for determining existing conditions. The design flow for the South Woodbury Township Wastewater Treatment Plant is 0.262 mgd (million gallons per day). Based on the instantaneous maximums for this facility, the potential for sediment and phosphorus loads if the South Woodbury Township Wastewater Treatment Plant capacities were fully utilized is 43.7278 lbs/day and 4.3728 lbs/day, respectively. This loading rate based on the design capacities of the plant is used in the final TMDL allocations (WLA).

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 C discharger. The supplement defines Sector C as a non-significant dischargers include sewage facilities (Phase 4 facilities: ≥ 0.2 MGD and < 0.4 MGD and Phase 5 facilities: > 0.002 MGD and < 0.2 MGD), small flow/single residence sewage treatment facilities (≤ 0.002 MGD), and non-significant IW facilities, all of which may be covered by statewide General Permits or may have individual NPDES permits.

At this time, there are approximately 850 Phase 4 and 5 sewage facilities, approximately 715 small flow sewage treatment facilities covered by a statewide General Permit, and approximately 300 non-significant IW facilities.

For Phase 4 sewage facilities (average annual design flow on August 29, 2005 ≥ 0.2 MGD and < 0.4 MGD), a future decision may be made as to the establishment of Cap Loads in permits. Until then, DEP will permit Phase 4 sewage facilities as follows:

1. Renewed or amended permits for facilities that do not increase design flow (compared to the date of the latest prior permit action) will contain monitoring and reporting for TN and TP throughout the permit term at a frequency no less than monthly.

2. Renewed or amended permits that include an increase in design flow will contain Cap Loads based on the lesser of a) existing TN and TP concentrations at current design average annual flow or b) 7,306 lbs/yr TN and 974 lbs/yr TP.

If no data are available to determine existing concentrations for expanding Phase 4 or 5 facilities, default concentrations of 25 mg/l TN and 4 mg/l TP may be used (these are the average estimated concentrations of all non-significant sewage facilities).

DEP will not issue permits to existing Phase 4 and 5 facilities containing Cap Loads unless it is done on a broad scale or unless the facilities are expanding.

For new Phase 4 and 5 sewage discharges, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance, with the exception of small flow and single residence facilities.

This facility is subject to Sector C monitoring requirements. Monitoring for nitrogen species and phosphorus shall be 1x/wk.

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 facility discharges to a HQ stream. The table below summarizes antidegradation best available combination of technologies (ABACT) expected performance expectations for flow rates greater than 50,000 gpd. The guidance document also encourages UV disinfection. The current process includes UV disinfection.

ABACT Performance Expectations

Parameter	Performance Expectations (mg/l)
CBOD (May 1 - Oct 31)	10
CBOD (Nov 1 - Apr 30)	10
SS	10
NH3-N (May 1 - Oct 31)	1.5
NH3-N (Nov 1 - Apr 30)	4.5

Notes:

1Treatment Performance Expectations flow rates > 50k gpd

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

The subject facility's discharge will be to a HQ special protection waters. Prior Fact Sheets state that existing limits were developed using social economic justification (SEJ), water quality standards, and the April 26, 1993 anti-degradation guidance. Revised water quality anti-degradation implementation guidance applicable to new and expanding discharges have been developed effective November 23, 2003. Since this is a renewal application and there is no expansion on average annual design flow, further anti-degradation analysis is not required. The permit conditions have been imposed to protect existing instream water quality and uses.

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.l.1 and 40 CFR 122.l.2). A review of the existing permit limitations with the proposed permit limitations confirm that the facility is consistent with anti-backsliding requirements. The facility has proposed effluent limitations that are as stringent as the existing permit.

6.0 NPDES Parameter Details

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

The reader will find in this section:

a) a justification of recommended permit monitoring requirements and limitations for each parameter in the proposed NPDES permit;
b) a summary of changes from the existing NPDES permit to the proposed permit; and
c) a summary of the proposed NPDES effluent limits.

6.1 Recommended Monitoring Requirements and Effluent Limitations

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

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection South Woodbury Township WWTP; PA0088226			
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 6.0 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	ABACT	Monitoring:	The monitoring frequency shall be 1x/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 21 lbs/day and 10 mg/l as an average monthly.
		Rationale:	Effluent limits are consistent with the ABACT guidance document.
TSS	ABACT	Monitoring:	The monitoring frequency shall be 1x/week as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 21 lbs/day and 10 mg/l as an average monthly.
		Rationale:	Effluent limits are consistent with the ABACT guidance document.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to recording the UV intensity.
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/week as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.
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 0.250 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

South Woodbury Township WWTP; PA0088226

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	ABACT	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	No effluent requirements.
		Rationale:	During the months of May 1 to October 31, effluent limits shall not exceed 3 lbs/day and 1.5 mg/l as an average monthly. During the months of November 1 to April 30, effluent limits shall not exceed 9 lbs/day and 4.5 mg/l as an average monthly.
Nitrate-Nitrite as N	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/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 1x/wk.
Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/mo as a calculation
		Effluent Limit:	No effluent requirements.
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/mo.
TKN	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/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 1x/wk.
Total Phosphorus	Anti-backsliding	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 2.1 lbs/day and 1.0 mg/l as an average monthly.
		Rationale:	A phosphorus limit exists due to protection of Raystown Lake. Due to anti-backsliding regulations, the current permit limit shall continue to the proposed permit.
Notes:			

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

2 Monitoring frequency based on flow rate of 0.250 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

6.1.3 Toxics

Toxics modeling was conducted on two separate runs for total copper. The DMR results from May 1, 2018 to June 1, 2022 gave an average result of 0.0214 mg/l. The total copper value provided in the NPDES application over 104 samples was 40 mg/l. Modeling should be completed using the maximum value from sampling. When modeling, the Toxics Modeling Spreadsheet (TMS) recommended monitoring for total copper using either the average DMR results value or the NPDES application value.

The current NPDES permit limit is 0.2 mg/l. The Fact Sheet from September 2011 had toxics modeling results recommending a copper effluent limit of 0.11 mg/l. The Fact Sheet from January 2018 had toxics modeling results recommending a copper effluent limit of 0.18 mg/l.

This fact sheet had toxics modeling results recommending monitoring for copper. Based upon the two previous fact sheets and the review for this fat sheet, if an effluent limit should be established, TMS recommends an effluent limit of 0.11 mg/l. The current effluent limit in the NPDES permit of 0.2 mg/l has been updated and corrected to 0.11 mg/l. Anti-backsliding prevents the effluent limit from becoming less stringent.

The average DMR result of 0.0214 mg/l would be below the 0.11 mg/l proposed permit limit. This supports reduction in monitoring frequency.

The TMS output for the total copper using 40 mg/l appears in the Fact Sheet attachment.

Summary of Proposed NPDES Parameter Details for Toxics

South Woodbury Township WWTP; PA0088226

Parameter	Permit Limitation Required by[1]:	Recommendation	
Total Copper	WQBEL	Monitoring:	The monitoring frequency shall be 2x/month as a 24-hr composite sample
		Effluent Limit:	Effluent limits shall not exceed 0.24 lbs/day and 0.11 mg/l as an average monthly.
		Rationale:	Toxics Management Spreadsheet recommends monitoring.
Total Lead	WQBEL	Monitoring:	The monitoring frequency shall be 1x/quarter as a 24-hr composite sample
		Effluent Limit:	No effluent limit requirements.
		Rationale:	Toxics Management Spreadsheet recommends monitoring. Pending favorable results, future renewals may reduce or eliminate monitoring

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 0.250 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

6.2 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.

Changes in Permit Monitoring or Effluent Quality

Parameter	Existing Permit	Draft Permit
Nitrate-Nitrite as N	Monitoring is 2x/mo	To maintain consistency with sampling frequency among all nitrogen species, monitoring shall be 1x/wk
TKN	Monitoring is 2x/mo	To maintain consistency with sampling frequency among all nitrogen species, monitoring shall be 1x/wk
Total Copper	Monitoring is 1x/wk	Monitoring shall be 2x/month
Total Lead	No monitoring or effluent limits	Monitoring shall be 1x/quarter
E. Coli	No monitoring or effluent limits	Due to the EPA triennial review, monitoring shall be 1x/quarter.

6.3.1 Summary of Proposed NPDES Effluent Limits

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

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

I. A. For Outfall 001 , **Latitude** 40° 9' 32.00" , **Longitude** 78° 22' 15.00" , **River Mile Index** 10.03 , **Stream Code** 13809

Receiving Waters: Yellow Creek (HQ-CWF, 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
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	6.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	21	31	XXX	10.0	15.0	20	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	21	31	XXX	10.0	15.0	20	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
Ultraviolet light intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	9.0	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	3.0	XXX	XXX	1.5	XXX	3	1/week	24-Hr Composite
Ammonia-Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Kjeldahl Nitrogen (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	2.1	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite
Total Phosphorus (Total Load, lbs) (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Copper, Total	0.24	XXX	XXX	0.11	XXX	0.4	2/month	24-Hr Composite
Lead, Total	Report Total Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite

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

at Outfall 001

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

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

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications; rev 2/3/2022
☐	Other:

Attachment A

Stream Stats/Gauge Data

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

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01561000	Brush Creek at Gapsville, Pa.	39.956	-78.254	36.8	N
01562000	Raystown Branch Juniata River at Saxton, Pa.	40.216	-78.265	756	N
01562500	Great Trough Creek near Marklesburg, Pa.	40.350	-78.130	84.6	N
01563200	Raystown Branch Juniata River below Rays Dam nr Huntingdon, Pa.	40.429	-77.991	960	Y
01563500	Juniata River at Mapleton Depot, Pa.	40.392	-77.935	2,030	Y
01564500	Aughwick Creek near Three Springs, Pa.	40.213	-77.925	205	N
01565000	Kishacoquillas Creek at Reedsville, Pa.	40.655	-77.583	164	N
01565700	Little Lost Creek at Oakland Mills, Pa.	40.605	-77.311	6.52	N
01566000	Tuscarora Creek near Port Royal, Pa.	40.515	-77.419	214	N
01566500	Cocolamus Creek near Millerstown, Pa.	40.566	-77.118	57.2	N
01567000	Juniata River at Newport, Pa.	40.478	-77.129	3,354	Y
01567500	Bixler Run near Loysville, Pa.	40.371	-77.402	15.0	N
01568000	Sherman Creek at Shermans Dale, Pa.	40.323	-77.169	207	N
01568500	Clark Creek near Carsonville, Pa.	40.460	-76.751	22.5	LF
01569000	Stony Creek nr Dauphin, Pa.	40.380	-76.907	33.2	N
01569800	Letort Spring Run near Carlisle, Pa.	40.235	-77.139	21.6	N
01570000	Conodoguinet Creek near Hogestown, Pa.	40.252	-77.021	470	LF
01570500	Susquehanna River at Harrisburg, Pa.	40.255	-76.886	24,100	Y
01571000	Paxton Creek near Penbrook, Pa.	40.308	-76.850	11.2	N
01571500	Yellow Breeches Creek near Camp Hill, Pa.	40.225	-76.898	213	N
01572000	Lower Little Swatara Creek at Pine Grove, Pa.	40.538	-76.377	34.3	N
01572025	Swatara Creek near Pine Grove, Pa.	40.533	-76.402	116	N
01572190	Swatara Creek near Inwood, Pa.	40.479	-76.531	167	N
01573000	Swatara Creek at Harper Tavern, Pa.	40.403	-76.577	337	N
01573086	Beck Creek near Cleona, Pa.	40.323	-76.483	7.87	N
01573160	Quittapahilla Creek near Bellegrove, Pa.	40.343	-76.562	74.2	N
01573500	Manada Creek at Manada Gap, Pa.	40.397	-76.709	13.5	N
01573560	Swatara Creek near Hershey, Pa.	40.298	-76.668	483	N
01574000	West Conewago Creek near Manchester, Pa.	40.082	-76.720	510	N
01574500	Codorus Creek at Spring Grove, Pa.	39.879	-76.853	75.5	Y
01575000	South Branch Codorus Creek near York, Pa.	39.921	-76.749	117	Y
01575500	Codorus Creek near York, Pa.	39.946	-76.755	222	Y
01576000	Susquehanna River at Marietta, Pa.	40.055	-76.531	25,990	Y
01576085	Little Conestoga Creek near Churchtown, Pa.	40.145	-75.989	5.82	N
01576500	Conestoga River at Lancaster, Pa.	40.050	-76.277	324	N
01576754	Conestoga River at Conestoga, Pa.	39.946	-76.368	470	N
01578310	Susquehanna River at Conowingo, Md.	39.658	-76.174	27,100	Y
01578400	Bowery Run near Quarryville, Pa.	39.895	-76.114	5.98	N
01580000	Deer Creek at Rocks, Md.	39.630	-76.403	94.4	N
01581500	Bynum Run at Bel Air, Md.	39.541	-76.330	8.52	N
01581700	Winters Run near Benson, Md.	39.520	-76.373	34.8	N
01582000	Little Falls at Blue Mount, Md.	39.604	-76.620	52.9	N
01582500	Gunpowder Falls at Glencoe, Md.	39.550	-76.636	160	Y
01583000	Slade Run near Glyndon, Md.	39.495	-76.795	2.09	N
01583100	Piney Run at Dover, Md.	39.521	-76.767	12.3	N

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

[ft^3/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

Attachment B

WQM 7.0 Modeling Output Values
Toxics Screening Analysis

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
11D	13809	YELLOW CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
10.300	South Woodbury	PA0088226	0.250	CBOD5	25		
				NH3-N	14.05	28.1	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
11D	13809	YELLOW CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
10.300	South Woodbury	3.73	50	3.73	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
10.300	South Woodbury	.73	14.05	.73	14.05	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
10.30	South Woodbury	25	25	14.05	14.05	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
11D	13809	YELLOW CREEK	**10.300**	1110.00	69.30	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.089	0.00	0.00	0.000	0.000	0.0	0.00	0.00	23.30	8.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
South Woodbury	PA0088226	0.2500	0.2500	0.2500	0.000	20.00	7.23

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
11D	13809	YELLOW CREEK	**7.680**	985.15	78.80	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
Q7-10	0.089	0.00	0.00	0.000	0.000	0.0	0.00	0.00	23.30	8.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	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
11D	13809	YELLOW CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
10.300	0.250	23.105	7.890
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
36.368	0.723	50.270	0.249
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.36	0.472	0.83	0.889
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.051	22.947	Tsivoglou	5
Reach Travel Time (days)			
0.644			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.064	3.24	0.78	7.79
0.129	3.13	0.74	7.79
0.193	3.02	0.70	7.79
0.258	2.92	0.66	7.79
0.322	2.82	0.62	7.79
0.386	2.72	0.59	7.79
0.451	2.63	0.56	7.79
0.515	2.54	0.53	7.79
0.580	2.45	0.50	7.79
0.644	2.37	0.47	7.79

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
11D	13809	YELLOW CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
10.300	6.15	0.00	6.15	.3868	0.00903	.723	36.37	50.27	0.25	0.644	23.10	7.89
Q1-10 Flow												
10.300	5.91	0.00	5.91	.3868	0.00903	NA	NA	NA	0.24	0.658	23.10	7.89
Q30-10 Flow												
10.300	7.08	0.00	7.08	.3868	0.00903	NA	NA	NA	0.27	0.598	23.13	7.90

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☐
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.96	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.15	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **South Woodbury WWTP** NPDES Permit No.: **PA0088226** Outfall No.: **001**

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.25	100	7.23						

					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		504									
	Chloride (PWS)	mg/L		97									
	Bromide	mg/L		0.4									
	Sulfate (PWS)	mg/L		29.2									
	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		40									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L		8									
	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		35.6									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

South Woodbury WWTP, NPDES Permit No. PA0088226, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Yellow Creek**

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	013809	10.3	1110	69.3			Yes
End of Reach 1	013809	7.68	985	78.8			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	10.3	0.0888										100	8		
End of Reach 1	7.68	0.0888										100	8		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	10.3														
End of Reach 1	7.68														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

South Woodbury WWTP, NPDES Permit No. PA0088226, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All | ○ Inputs | ○ Results | ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.740 Analysis Hardness (mg/l): 100 Analysis pH: 7.86

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	13.439	14.0	179	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	1,042	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	1,530	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 27.426 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.89

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	8.956	9.33	158	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	53.8	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	2,026	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 27.426 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 9.708 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	Report	Report	Report	Report	Report	µg/L	115	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	53.8	CFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***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 Zinc	981	µg/L	Discharge Conc ≤ 10% WQBEL